Evolutionary International Regime for the Protection of the Marine Environment under the United Nations Convention on the Law of the Sea

Thesis submitted for the Award of the Degree of Ph.D

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The marine environment is under stress from marine pollution, over-exploitation of marine living resources and over-exploitation of the coastal zones caused by the ever intensifying human activities in the sea. Perceiving the problem of the degradation of the marine environment, international society has established a variety of international legal regimes with a view to resolving this problem. Since the United Nations Convention on the Law of the Sea (the 1982 UNCLOS) is internationally recognized as the international basis for the protection and sustainable development of the marine and coastal environment and its resources, the regime for the protection of the marine environment established thereunder constitutes a framework for different international regimes for the protection of the marine environment. In analyzing international regimes, regime theory can be used as a theoretical tool. A regime is a norm-based institution composed of a set of substantives norms, procedural rules and behavioural aspects (convergent expectations and compliance) in a given issue area. Since any legal regime evolves with the passage of time, a theory of evolution of legal regimes can be built up by identifying different mechanisms of evolution, such as amendments, additional agreements, evolutionary interpretation, rules of reference, sub-regimes. With these two sets of theoretical tools, the regime for the protection of the marine environment under the 1982 UNCLOS is analyzed in this thesis, by reviewing its components and their relations with those in other regimes.

Chapter 1 presents the nature of the issue-area of the protection of the marine environment. Chapter 2 presents regime theory with a view to applying it to the analysis of the regime for the protection of the marine environment under the 1982 UNCLOS. In Chapter 3, evolutionary mechanisms of the regime under the 1982 UNCLOS are examined. In Chapters 4 and 5, substantive norms of the regime (principles and rules) are examined in the light of the theory of evolution of legal regimes. In Chapter 6, procedural and behavioural aspects, i.e., decision-making procedures, convergent expectations, and compliance system under the regime are examined also in the light of the theory of evolution of legal regimes.

Declaration

I, the undersigned declare that this thesis has been composed by me and is a record of my work. No part of it has been submitted for another degree at this or any other University.

Hai-ung Jung

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ABBREVIATIONS

AJIL	American Journal of International Law
BYIL	British Yearbook of International Law
CNRS	Centre National de Recherche Scientifique
EJIL	European Journal of International Law
FAO	Food and Agricultural Organization
GESAMP	Joint Group pf Experts on the Scientific Aspects of Marine Pollution
GPA	Global Programme of Action
GYIL	German Yearbook of International Law
HELR	Harvard Environmental Law Review
HILJ	Harvard International Law Journal
IAEA	International Atomic Energy Agency
ICJ	International Court of Justice
ICLQ	International and Comparative Law Quarterly
IJMCL	International Journal of Marine and Coastal Law
ILA	International Law Association
ILC	International Law Commission
ILM	International Law Materials
IMO	International Maritime Organization
IO	International Organization
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Union for the Conservation of Nature
NYIL	Netherlands Yearbook of International Law
ODIL	Ocean Development and International Law
PCIJ	Permanent Court of International Law
RECIEL	Review of European Community and International Environmental Law
RGDIP	Revue Générale de Droit International Public
UNRIAA	United Nations Reports of International Arbitral Awards
UNCHE	United Nations Conference on the Human Environment
UNCLOS	United Nations Convention on the Law of the Sea
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environmental Programme
UNGA	United Nations General Assembly
WCED	World Commission on Environment and Development
WHO	World Health Organization
YIEL	Yearbook of International Environmental Law
ZAÖRV	Zeitschrift für Ausländisches und Öffentliches Recht und Völkerrecht

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Introduction

In the literature of international law, the term 'international regime' is widely used. But more vigorous studies on international regimes are undertaken by a school of international relations theorists. Since regimes are norm-based institutions, regime theory can be used as a theoretical tool for the analysis of international legal institutions. Without finding any systematic application of regime theory to the analysis of international regimes for the protection of the marine environment, I have used regime theory as an analytical tool for the analysis of the international regime for the protection of the marine environment under the United Nations Convention on the Law of the Sea (hereinafter referred to as the 1982 UNCLOS). Since the regime evolves with the passage of time adapting to the changing environment, a set of evolutionary mechanisms of the regime is examined and used as another theoretical scheme for the analysis of the regime.

Chapter 1 presents the issue-area of the regime. The problem of the degradation of the marine environment is caused by marine pollution, the over-exploitation of marine living resources and the over-development of the coastal areas. After the analysis of the nature of these problems, different streams of environmental ethics underlying human attitudes vis-à-vis nature are reviewed. In order to resolve the problem of the degradation of the marine environment, international society has established a series of international regimes and a comprehensive international agenda. Before the conclusion of the 1982 UNCLOS, all international regimes had developed piecemeal, dealing with specific issues, such as the protection of a particular type of marine pollution, the conservation of particular fish stocks, or having limited geographical scopes. The 1982 UNCLOS has established a comprehensive international regime for the law of the sea, within which the regime for the protection of the marine environment is embedded. At the United Nations Conference on Environment and Development held at Rio at Rio de Janeiro, 3-14 June 1992 (hereinafter referred to as the 1992 UNCED), international society has adopted Agenda 21, in which Chapter 17 has established a comprehensive programme of action for the protection of the marine environment. The content of Chapter 17 of Agenda 21 and its relationship with the 1982 UNCLOS is examined.

Chapter 2 presents regime theory with a view to applying it to the analysis of the regime for the protection of the marine environment under the 1982 UNCLOS. The concept of international regimes, theories of regime creation and regime consequences are examined. Regime theorists employ the terms 'principles', 'norms', and 'rules' as normative elements of regimes. The concepts of these terms as defined by regime theorists are somewhat different from those used in legal literature. In applying regime theory to the analysis of a legal regime, some adjustment is necessary in order to avoid any confusion which may arise from the difference in the use of terms. These terms are redefined and rearranged according to how these concepts are usually understood in legal theory. In behavioural aspects, regime theorists focus on convergent expectations as a necessary condition for cooperation among sovereign States in anarchical international society. In a legal regime, the problem of compliance with legal norms is as important as the convergence of expectations. Therefore, compliance is introduced as an additional variable in analysing the regime under the 1982 UNCLOS.

Chapter 3 examines the evolutionary mechanisms, such as amendments, additional agreements, evolutionary interpretations, rules of reference and the creation of sub-regimes with which the regime for the protection of the marine environment under the 1982 UNCLOS is endowed. This chapter shows how these mechanisms work so as to allow the regime to adapt to the changing environment, while maintaining its integrity.

In Chapter 4, the principles embodied in the 1982 UNCLOS are examined in the framework of regime theory and the evolutionary mechanisms of legal regimes. The regime for the protection of the marine environment under the 1982 UNCLOS embraces the integrated approach by providing a set of substantive norms covering all issues concerning marine pollution, applicable to all States and to the entire sea area of the globe. Although it does not explicitly articulate relatively new principles, such as the ecosystem approach, sustainable development, precautionary principle, it contains many precursory ideas of these principles, or it can readily embrace these principles.

Chapter 5 examines the operational rules provided by the 1982 UNCLOS to ensure the rational behaviour of States in their dealing with the marine environment. Most of the rules are the result of the codification of the rules of customary international

law, but some new elements are introduced in the 1982 UNCLOS. These rules are examined in the light of the theory of rationality.

Chapter 6 deals with the procedural and behavioural aspects of the regime. In this chapter, the decision-making procedures set down in the regime and the expectations converging around the regime are examined in the light of regime theory. Since the 1982 UNCLOS provides a variety of compliance mechanisms, this chapter also examines the compliance system, which is absent from regime theory or embedded in the concept of convergence of expectations, but essential in analysing the effectiveness of a legal regime. It is in the analysis of these procedural and behavioural aspects of the regime that regime theory shows its particular merits.

Chapter 1
The Issue-area of the Protection of the Marine Environment

In regime theory, an issue refers to a problem perceived by policy-makers and adopted as an agenda, and an issue-area is a set of closely interconnected issues in a particular field.[1] Conceived as such, an issue-area has a dual aspect; a set of perceived *problems*, and an *agenda* aimed at solving the problems.

The protection of the marine environment is an issue-area, since international society has perceived a set of problems of the degradation of the marine environment, and has established a set of agendas to deal with the problems.

1. Problems of degradation of the marine environment

The degradation of the marine environment is a problem caused and perceived by humanity. The development of science and technology coupled with the increase in human population has led to an intensification of human activities in the sea. Traditional uses of the sea such as fishing and navigation have notably intensified. After having found new uses of the sea, such as the exploitation of seabed resources, the production of energy from seawater, currents and winds, the construction of artificial islands, the development of marine leisure industry, etc., humans are continuing in their endeavour to find still other uses of the sea. Human activities causing the degradation of the marine environment may be classified into three main categories: 1) marine pollution; 2) over-exploitation of marine living resources; 3) over-development of coastal areas.

1.1 Marine pollution

1.1.1 The concept of marine pollution

[1] Formal definitions of the terms issue and issue-area will be given in Chapter 2

The most widely accepted legal definition of marine pollution is that adopted in the 1982 UNCLOS, which is based on the definition formulated by the Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP).

GESAMP had made efforts to draft a definition of marine pollution since 1969 and, after several amendments, proposed the following definition in 1982;

> "Marine pollution is defined as the introduction by man, directly or indirectly, of substances or energy into the marine environment (including estuaries) resulting in such deleterious effects as harm to living resources, hazard to human health, hindrance to marine activities including fishing, impairment of quality for use of seawater and reduction of amenities."[2]

The definition proposed by GESAMP served as the basis of the definition of the marine environment in the 1982 UNCLOS. The GESAMP definition was slightly modified in the 1982 UNCLOS as follows (the italic letters inserted in the following definition);

> "Pollution of the marine environment means the introduction by man, directly or indirectly, of substances or energy into the marine environment, *including estuaries*, which results *or is likely to result* in such deleterious effects as harm to living resources and *marine life*, hazards to human health, hindrance to marine activities, including fishing *and other legitimate uses of the sea*, impairment of quality for use of seawater and reduction of amenities."[3]

Many regional or global conventions adopt either the GESAMP definition or the UNCLOS definition, with slight modification according to their respective objective and policy orientation.[4]

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[2] GESAMP Report, 1982
[3] 1982 UNCLOS, Article 1, para.1 (4)
[4] The following regional or international instruments, *i.a.* adopt a definition of (marine) pollution on the basis of the GESAMP definition or the UNCLOS definition:

<Anthropogenic phenomenon>

In the UNCLOS definition of marine pollution, the act of man only is taken into account; *the introduction by man, directly or indirectly* is considered as the cause of marine pollution. The degradation of the marine environment by natural disaster or by animals is not considered as pollution.[5] This distinction between act of man and act of nature is natural in a policy-oriented definition, since legal norms are aimed at regulating human activities. This element is common to all the definitions of marine pollution adopted in the instruments, listed in the footnote 4.

<Scope of the marine environment>

The physical scope of the concept of marine pollution is all of the seas in the world. But it covers also estuaries. In the GESAMP definition, the words "*including estuaries*" are

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The 1974 Convention on the protection of the Marine Environment of the Baltic Sea Area (Art.2);
The 1974 Convention for the Prevention of marine Pollution from Land-based Sources (Art.1);
The 1976 Convention for the Protection of the Mediterranean Sea Against Pollution (Art.2);
The 1978 Kuwait Regional Convention on the Protection of the Marine Environment from Pollution (Art.1);
The 1981 Convention for Cooperation in the Protection and Development of the Marine Environment of the West and Central African Region (Art.2);
The 1981 Convention for the Protection of the Marine Environment and Coastal Sea of the South-East Pacific (Art.2);
The 1982 Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment (Art. 1);
The 1985 Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Art.2);
The 1985 Montreal Guidelines for the protection of the marine environment against pollution from land-based sources; (para.1)
The 1986 Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (Art.2);
The 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area (replacing the 1974 Convention on the Protection of the Marine Environment of the Baltic Sea Area) (Art.2);
The 1992 Convention for the Protection of the marine Environment of the North East Atlantic (OSPAR) (Art.1)
The 1992 Convention on the Protection of the Black Sea against pollution (Art. II)
The 1995 Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Art.2)
The 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other matter, 1972 (Art.1)

[5] See M. Despax, La pollution des eaux et ses problèmes juridiques, Librairies Techniques, 1968, p. 3 « La présence de l'élément perturbateur doit d'abord résulter d'une intervention humaine. L'action des phénomènes naturels, cyclone, éruptions pétrolière sous-marine, réchauffement ou éloignement soudain d'un courant sous-marin, tous faits de Dieu, n'entrent pas ici en ligne de compte. »

in the parenthesis, reflecting the hesitation of GESAMP whether to include estuaries into the marine realm. In scientific terms, it is questionable whether estuaries, mixing points of the marine ecosystem and the terrestrial ecosystem, belong to the marine environment. But in a policy-oriented definition, it is reasonable that the estuaries be included in the marine environment, since they are ecologically inseparable from the marine realm.[6] The 1982 UNCLOS clearly includes the estuaries into the concept of marine environment, eliminating the parentheses around the words *including estuaries*. After the adoption of the 1982 UNCLOS, most, not all, instruments include 'estuaries' in their definition of marine pollution, following the example of the UNCLOS definition.[7]

<Substances or energy>

Marine pollution is caused by certain categories of *substances or energy*, which may be called pollutants or contaminants. What kinds of substances and energy cause pollution?

First, there are some substances intrinsically harmful or hazardous to living things. According to the Convention for the Prevention of Pollution from Ships (hereinafter referred to as MARPOL 1973/78), 'harmful substance' means "any substance which, if introduced into the sea, is liable to create hazards to human health, to harm living

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[6] See Daniel D. Chiras, Environmental Science, Wadsworth Publishing Co. Fifth Edition, 1998, p. 89 "Estuaries are places where freshwater mixes with salt water. Estuaries are very rich life zones because streams and rivers transport many nutrients from the land and because incoming tides carry nutrients into estuaries from the ocean. These nutrients support abundant plant and algal growth and sizeable populations of fish and molluscs."
See also Carol M. Lalli & Timothy R. Parsons, Biological Oceanography, Butterworth Heinemann, Second Edition 1997, p. 209

[7] Regarding 'estuaries', there are, among the instruments listed in footnote 4, four types of definition, as follows:

A) GESAMP type definitions, which put the term 'estuaries' in the parenthesis (estuaries): the 1974 Convention for the prevention of marine pollution from land-based sources, the 1981 South-East Pacific Convention, the 1986 South Pacific Region Convention,
B) UNCLOS type definitions, which include clearly the term 'estuaries': the 1974 Baltic Sea Area Convention, the 1985 Eastern African Region Convention, the 1992 Baltic Sea Area Convention, the 1992 Black Sea Area Convention, the 1995 Mediterranean Convention
C) Definitions which do not mention 'estuaries': the 1976 Mediterranean sea Convention, the 1978 Kuwait Regional Convention, the 1982 Red Sea and Gulf of Aden Convention, the 1985 Montreal Guidelines, the 1992 North East Atlantic Convention (Ospar), the 1996 Protocol to the London Dumping Convention
D) The definition which employs the term 'coastal zones' instead of 'estuaries': the 1981 The West and Central African Region Convention

The 1997 Convention on the Law of the Non-navigational Uses of International Watercourses also includes 'estuaries' in the concept of marine environment. "States shall...take all measures with respect to an international watercourse that are necessary to protect and preserve the marine environment, including

resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea..."[8]In some instruments, harmful substances are classified according to their degree of intrinsic harmfulness. For instance, the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (hereinafter referred to as the 1972 London Dumping Convention) established a black list, a grey list and a white list.[9]

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estuaries, taking into account generally accepted international rules and standards." Art. 23

[8] Convention for the Prevention of Pollution from ships (MARPOL 1973/78), Article 2 (2)
Besides the MARPOL 1973/78 and many other instruments provide for similar definitions of harmful substance.

A) Some instruments provide similar, but not identical, definitions of 'harmful substances': for example,
The 1974 Convention on the Protection of the Marine Environment of the Baltic Sea defines "harmful substances" any hazardous, noxious or other substances, which, if introduced into the sea, is liable to cause pollution (Art.2);
The 1982 Regional Convention for the Conservation of the Red Sea and Gulf of Arden Environment defines "harmful substance" as any substance whose introduction or presence in the marine environment causes a danger threatening or impairing that environment (Art. I);
The 1985 Protocol concerning co-operation in combating marine pollution in cases of emergency in the Eastern African Region defines "harmful substance" as any substance other than oil which, if introduced into the sea, creates hazards to human health, harms living resources and marine life, damages amenities or interferes with other legitimate uses of the sea (Art.1);
The 1992 Convention on the Protection of the Black Sea against Pollution, "harmful substance" means any hazardous, noxious or other substance, the introduction of which into the marine environment would result in pollution or adversely affect the biological processes due to its toxicity and/or persistent and/or bioaccumulation characteristics (Art. II);

B) Some instruments employ the term "hazardous substance" instead of 'harmful substance":
The 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes defines "hazardous substances" substances which are toxic, carcinogenic, mutagenic, teratogenic or bio-accumulative, especially when they are persistent (Art.1)

C) The 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area distinguishes 'harmful substance' and 'hazardous substance'. "Harmful substance" means any substance which, if introduced into the sea, is liable to cause pollution. "Hazardous substance" means any harmful substance which due to its intrinsic properties is persistent, toxic or liable to bio-accumulate. (Art.2)

D) The 1993 Convention on Civil Liability for Damages Resulting from Activities Dangerous to the Environment employs the term "dangerous substance", which means a) substances or preparations which have properties which constitute a significant risk for man, the environment or property. A substance or preparation which is explosive, oxidizing, extremely flammable, highly flammable, flammable, very toxic, toxic, harmful, corrosive, irritant, sensitising, carcinogenic, mutagenic, toxic for reproduction or dangerous for the environment within the meaning of Annex I, Part A. b) substances specified in Annex I, Part B to the Convention.

[9] In the 1972 Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the 1972 London Dumping Convention), wastes or other matter are classified into three categories, listed in Annex I, Annex II, and Annex III, according to the degree of toxicity.
In the 1996 Protocol to the 1972 London Dumping Convention, this structure is completely changed by the introduction of the 'reverse list', which means any dumping and incineration at sea is prohibited unless allowed exceptionally in cases listed in the Protocol. See the 1996 Protocol, Articles 4, 5, 8
The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their

Second, there are some substances that are not intrinsically harmful, but can be harmful, if highly concentrated in a given space and time. For instance, phosphorus and nitrogen are indispensable nutrients for many primary producers in the water, but when intensely concentrated in seawater or fresh water they may provoke the eutrophication, which is harmful to aerobic living resources. Contamination is a more correct term to refer to this kind of phenomena. Contamination is defined by GESAMP as "the presence of elevated concentrations of substances in water, sediments or organisms".[10] The 1972 London Dumping Convention uses the concept of pollution based on the concept of concentration of substances, by listing in Annex II "materials which, though of a non-toxic nature, may become *harmful due to the quantities* in which they are dumped, or which are liable to seriously reduce amenities".[11] Thus, pollution is a matter of density of pollutants since the environment has a capacity to absorb wastes. Thanks to this environmental capacity, [12] even the substances that are classified into the category of "intrinsically harmful substances" are not harmful when dispersed in a sufficiently large space or over a sufficiently long period of time.[13] On the contrary, any substance can be harmful, when excessively concentrated in a limited space and time.[14]

Disposal classifies wastes into three categories: Annex I Categories of Wastes to be controlled, Annex II Categories of Wastes Requiring Special Consideration. Annex III provides the list of hazardous characteristics: such as explosive; flammable liquids; flammable solids; substances and wastes liable to spontaneous combustion; substances or wastes which, in contact with water emit flammable gases; oxidizing; organic peroxides; poisonous (acute); infectious substances; corrosives; Liberation of toxic gases in contact with air or water; toxic; ecotoxic; capable by any means, after disposal, of yielding another material. In addition to the lists of Annex I and Annex II, the Basel Convention allows also national definitions of hazardous wastes (Art.3).

The 1991 Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa takes a similar approach: it provides the list of hazardous wastes (Annex I Categories of Wastes which are Hazardous Wastes), and the list of hazardous characteristics (Annex II), which is identical to that of Annex III of the 1989 Basel Convention.

[10] UN Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP)(1982)

[11] 1972 London Dumping Convention, Annex II, D

[12] GESAMP defines environmental capacity of the marine environment as its ability to accommodate a particular activity, or rate of activity, without an unacceptable impact. See V. Pravdic, Environmental Capacity- Is a New Scientific Concept Acceptable as a Strategy to Combat Marine Pollution? 16 *Marine Pollution Bulletin* (1985), pp. 295-296

[13] Even radioactive materials are not harmful below the *de minimis* levels. For example, IAEA has issued in 1996 the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (BSS). The BSS establishes requirements for controlling radiation exposure. On the other hand, BSS defines radioactivity levels below which material may be considered "non-radioactive" (known as *de minimis* or exempt levels), on the basis of the concepts of *exclusion* and *exemption*. Any exposure whose magnitude or likelihood is essentially unamenable to control through the requirements of the BSS is deemed to be excluded from the BSS. Sources that are essentially uncontrollable, such as cosmic radiation at ground level and potassium-40 in the body, can be dealt with by the process of *exclusion* from

Third, energy also can cause harmful effects on the marine environment through thermal pollution. An enhancement of the temperature of the coastal seawater by the thermal discharges from cooling systems of industrial installations may cause changes in the environment with subsequent biological effects on the coastal ecosystems.[15] Thermal pollution lowers the dissolved oxygen content of water and increases the metabolic rate of aquatic organisms.[16]

<Deleterious effects>

If marine pollution is regarded as a problem, it is because it entails "*deleterious effects*". It is difficult to define deleterious effects in conceptual terms, because it is virtually impossible to devise an abstract criterion for the classification of the innumerable effects produced by all substances.[17] The 1982 UNCLOS, without giving a conceptual definition to deleterious effects, presents some examples thereof, such as "harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of seawater and reduction of amenities." Similarly, the definition of harmful substance in the MARPOL 1973/78 enumerates the effects created by a harmful substance: "hazards to human health,

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the scope of regulatory instruments. *Exemption* determines what waste may – and what may not – be freed *a priori* from some or all regulatory controls. Sources which give rise to small individual doses and small collective doses in both normal and accidental conditions are subject to the exemption process.
See IAEA Bulletin 42/3/2000 What waste is "radioactive"? Defining the scope of regulatory system, by John Cooper, Abel J. Gonzalez, Gordon Linsley, and Tony Wrixon.
See also Ivo Rens & Joel Jakubec (ed.), Radioprotection et droit nucléaire, Georg Editeur, 1998

[14] For example, oil is not inherently harmful, as the 1985 Protocol concerning Co-operation in Combating Marine Pollution in cases of Emergency in the Eastern African Region excludes oil from the category of harmful substance, by defining 'harmful substance' as any substance other than oil which, if introduced into the sea, creates hazards to human health, harms living resources and marine life, damages amenities or interferes with other legitimate uses of the sea. But, oil spilled densely in a limited sea area causes marine pollution due to its concentration.

[15] For example, in a nuclear power plant, water from the river is used to cool the reactor. Heat picked up from this process by the river water is then dumped, along with the water, back into the stream, causing a rapid increase in water temperature that is harmful to aquatic ecosystems. Heated river water runs into the sea and elevate the temperature of coastal seawater.

[16] See Daniel D. Chiras, Environmental Science, op. cit. p. 416

[17] In many instruments, the concept of deleterious effects is embedded in the definition of "harmful substance", "hazardous substance", or "dangerous substance". Deleterious effects are presented as the characteristics of "harmful substances" or "hazardous substances". See supra. Note 8

harm to living resources and marine life, damage to amenities and interference with other legitimate uses of the sea."[18]

"Harm" is the core element of the concept of deleterious effects. "Hazard", "hindrance", "impairment", and "interference" can be used interchangeably with "harm" in most cases.[19] But all are highly subjective and relative concepts. "Harm" is a subjective concept in that it is subject to the value judgement of humans. Suppose that a particular ecosystem is succeeded by another ecosystem as a result of the eutrophication. If this change of ecosystem is perceived as a harmful effect, it is implied that the original ecosystem was better than the new one, in the eyes of humans. The notion of harmfulness is based on just such a subjective anthropocentric value judgement.

"Harm" is a relative concept in the sense that the same change caused by a given substance may be beneficial to some things, but detrimental to some other things. For example, mariculture is the creation of conditions favourable to the fish living in the pond, which may be harmful to the fish living around the pond.[20]

Because of the difficulty of defining 'harm' conceptually, it is sometimes defined in a circular expression, for example, "Harm means harm caused to persons, property or the environment."[21]

As to the question of "harmful *to whom*", the GESAMP definition of marine pollution focuses on consequences on human interests; harm to living resources, hazards to human health, hindrance to marine activities, including fishing, impairment of quality for use of seawater and reduction of amenities. Living resources are things that are regarded as *resources* for human consumption. In the GESAMP definition, the term

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[18] Article 2
The instruments enumerated in Note 8 provide similar concepts of harmful effects.

[19] The 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area distinguishes 'harmful substance" and "hazardous substance': "Harmful substance" means any substance which, if introduced into the sea, is liable to cause pollution; "Hazardous substance" means any harmful substance which due to its intrinsic properties is persistent, toxic or liable to bio-accumulate. In the light of these definitions, hazardous substance can be considered to be more damaging than harmful substance.

[20] The main technical problems associated with aquaculture are fish disease and excess food, and antibiotics affecting local ecosystems in the vicinity of the sea cages. See Peter D. Moore, Bill Chaloner, Philip Scott, *Global Environmental Change*, Blackwell Science Ltd, 1996, p.191, and M. Barinaga, Fish money and science in Puget Sound, *Science* 247, 1990, p.631
See also Carl J. Sindermann, Ocean Pollution: Effects on Living Resources and Humans, CRC Press, 1996 pp.195 -197 Biological interactions of aquaculture stocks and native populations.

[21] ILC, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, adopted by ILC at its 53rd session (2001), Article 2

'marine activities' means implicitly human marine activities, 'quality of seawater' and 'amenities' are considered in relation to human use. The 1982 UNCLOS introduces "harm to marine life" into the concept of marine pollution. The term marine life is devoid of any notion of the utility of living things for humans. By considering harm to marine life as pollution, the UNCLOS definition widens the perspective beyond the anthropocentric vision. The fact that harm to marine living resources and marine life is considered as marine pollution signifies that the concept of marine pollution is linked by definition to the marine living resources. This means that the concept of the marine environment should comprise the issues of marine pollution and those of marine living resources. Marine pollution may harm humans directly, but in most cases harms humans through its harm to marine living resources.[22]

Besides the 1982 UNCLOS, several instruments include 'harm to marine life' in the concept of marine pollution.[23] Some instruments introduce 'harm to marine ecosystems', instead of harm to marine life', into the concept of marine pollution.[24]

<Real and potential effects>

It is also noteworthy that not only the actual harm but also the potential harm is taken into account in the UNCLOS definition of marine pollution, by introducing the expression "*or is likely to result*" in deleterious effects. The UNCLOS definition is more policy-oriented than the scientific definition proposed by GESAMP.[25] Scientifically speaking, what is *likely to* result in deleterious effects may not be pollution, without being proved to be deleterious. But in legal norms aimed at preventing marine pollution, it is more appropriate to take into account potential harm to the environment. In 1982, the

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[22] See Carl J. Sindermann, op. cit., Chapter 5 Ocean Pollution and Human Diseases

[23] The 1974 Baltic Sea Convention, the 1981 South-East Pacific Convention, the 1986 South Pacific Region Convention, the 1992 Black Sea Convention, the 1995 Mediterranean Convention.

[24] The 1974 Convention for the Prevention of Marine Pollution from Land-based Sources, the 1985 Montreal guidelines for the protection of the marine environment against pollution from land-based sources, the 1992 Baltic Sea Convention, the 1992 Convention for the Protection of the marine Environment of the North East Atlantic (OSPAR), the 1996 Protocol to the London Dumping Convention. It is noteworthy that the 1992 Baltic Sea Convention, which has replaced the 1974 Baltic Sea Convention, has replaced the term 'marine life' with the term 'marine ecosystems'.

[25] The formulation 'results or likely to result' was judged non-scientific by GESAMP, because the need for scientific exactness requires strict proof, and probability of an event should not be used as the scientific basis for mitigation of anticipated damage. See, M. Tomczak, Jr. Defining marine pollution, *Marine Policy*, October 1984, pp. 311-322

precautionary principle had not yet been formulated. But the notion of potential harm introduced in the concept of marine pollution can be regarded as a forerunner of the precautionary principle.[26]

Many other instruments introduce potential harm into the concept of marine pollution, by using the term "*or is likely to result*" in their definition of marine pollution.[27]

In some instruments dealing with the issues of liability for environmental damage, the concept of "environmental damage" or "pollution damage" is used instead of that of pollution.[28] In a regime of civil liability, damage is an indispensable condition of civil

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[26] For precautionary principle, see Chapter IV, I Principles

[27] The 1978 Kuwait Regional Convention (Art. I), the 1981 South East Pacific Convention (Art. 2), the 1982 Regional Convention of the Red Sea and Gulf of Aden (Art. I), the 1985 Montreal Guidelines (para.1), the 1986 South Pacific Region Convention (Art. 2), the 1992 North East Atlantic Convention (Ospar) (Art.1), the 1992 Black Sea Convention (Art. II), the 1995 Mediterranean Convention (Art. 2), the 1996 Protocol to the London Dumping Convention (Art.1)
The 1992 Baltic Sea Convention employs the term "which are liable to create", different from "is likely to" in wording, but the same in meaning.

[28] In the 1969 International Convention on Civil Liability for Oil Pollution Damage, "pollution damage" means loss or damage caused outside the ship carrying oil by contamination resulting from the escape or discharge of oil from the ship, where such escape or discharge may occur, and includes costs of preventive measures and further loss or damage caused by preventive measures. (Art. I (6))

The IMO Protocol of 1992 to Amend the International Convention on Civil Liability for Oil Pollution Damage modifies slightly this definition: "Pollution damage" means: (a) loss or damage caused outside the ship carrying oil by contamination resulting from the escape or discharge of oil from the ship, where such escape or discharge may occur, provided that compensation for impairment of the environment other than loss of profit from such impairment shall be limited to costs of reasonable measures of reinstatement actually undertaken or to be undertaken; (b) the costs of preventive measures and further loss or damage caused by preventive measures. (Art. 2 (6))

The 1989 International Convention on Salvage defines "damage to the environment" as substantial physical damage to human health or to marine life or resources in coastal or inland waters or areas adjacent thereto, caused by pollution, contamination, fire, explosion or similar major incidents. (Art.1 (d))

In the 1993 Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment (Lugano Convention), "Damage" means: a) loss of life or personal injury; b) loss of or damage to property other than to the installation itself or property held under the control of the operator, at the site of the dangerous activity; c) loss or damage by impairment of the environment in so far as this is not considered to be damage within the meaning of sub-paragraphs a) or b) above provided that compensation for impairment of the environment, other than for loss of profit from such impairment, shall be limited to the costs of measures of reinstatement actually undertaken or to be undertaken; d) the costs of preventive measures and any loss or damage caused by preventive measures, to the extent that the loss or damage referred to in sub-paragraphs a) to c) of this paragraph arises out of or results from the hazardous properties of the dangerous substances, genetically modified organisms or micro-organisms or arises or results from waste. (Art. 2 (7))

In the 1996 International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, "Damage" means: (a) loss of life or personal injury on board or outside the ship carrying the hazardous and noxious substances caused by those substances; (b) loss of or damage to property outside the ship carrying the hazardous and noxious substances caused by those substances; (c) loss or damage by contamination of the environment caused by the hazardous and noxious substances, provided that compensation for impairment of the environment other than loss of profit from such impairment shall be limited to costs of reasonable measures of

liability.[29] He who is responsible for damage is liable for reparation or compensation. On the contrary, the concept of pollution is not directly related to the concept of reparation or compensation. For this reason, the concept of damage is preferred to that of pollution in the instruments dealing with the issues of civil liability.

1.1.2 Classification of the sources of marine pollution

With a volume of some 1.3 billion cubic kilometres and covering 71% of the earth's surface, the global ocean has an enormous absorptive capacity. In spite of the excellent homeostatic power of the global ocean, the marine environment is threatened by man-made pollutants reaching the marine realm from a variety of sources.

The pollutants arriving in the marine realm are so various that it is necessary to classify them into some categories to deal with them efficiently. In fact, it is common practice for international environmental regimes, in dealing with these pollutants, to classify them into categories appropriate to the purposes of the regimes. For the purpose of scientific analysis, pollutants are commonly classified according to their components, or their biochemical activities. But for the purpose of devising pollution control systems, pollutants are usually classified according to their sources or pathways so that appropriate norms can be applied to control pollutants by their sources or pathways. For example, the 1982 UNCLOS classifies marine pollution into six categories: 1) pollution from land-based sources, 2) pollution from sea-bed activities subject to national jurisdiction, 3) pollution from activities in the Area, 4) pollution from dumping, 5) pollution from vessels, 6) pollution from or through the atmosphere.[30]

This classification contains an ambiguity because of an inconsistency of the application of criteria. The first five categories are classified on the basis of the single criterion, *i.e.* the source of pollutants, but in the case of 'pollution from or through the

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reinstatement actually undertaken or to be undertaken; and (d) the costs of preventive measures and further loss or damage caused by preventive measures. Where it is not reasonably possible to separate damage caused by the hazardous and noxious substances from that caused by other factors, all such damage shall be deemed to be caused by the hazardous and noxious substances except if, and to the extent that, the damage caused by other factors is damage of a type referred to in article 4, paragraph 3. In this paragraph, "caused by those substances" means caused by the hazardous or noxious nature of the substances.

[29] See Patrice Jourdain, Les Principes de la Responsabilité Civile, Dalloz, 5e édition, 2000, p. 137

[30] The United Nations Convention on the Law of the Sea, Articles 207-212

atmosphere', two criteria are applied, *i.e.* the source and pathway of pollutants. Pollution "*from*" the atmosphere is a category classified according to the source of pollutants. It may include pollutants generated by airborne craft such as gases emitted by aircraft or other flying objects. But pollution "*through*" the atmosphere is a category based on the pathway of pollutants. It may include all kinds of airborne pollutants, whether generated on land, in the sea, or in the air, if only they are infused into the sea, after residing some time in the air. This may be a source of confusion. For example, heavy metal particles which are emitted on land, taken up in the air and finally fall into the sea may belong to the category of pollution from land-based sources and also to the category of pollution from or "through" the atmosphere. Likewise, carbon dioxide particles emitted in the sea by a vessel, taken up in the air and finally infused into the sea belong simultaneously to "pollution from vessels" and "pollution through the atmosphere".

It is more logical that pollutants emitted from land-based activities belong to land-based pollutants even though they are infused into the sea *through the atmosphere*. In fact, the 1974 Paris Convention for the Prevention of Marine Pollution from Land-based Sources, the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) and other instruments which deal with pollution from land-based sources, apply the source of pollutants as the unique criterion of the classification of pollution. In the definitions laid down in these instruments, emissions into the atmosphere from land are logically included in the category of "land-based sources", even though they reach the maritime area through the air.[31]

For the sake of simplicity and consistency, marine pollution may be classified into three main categories, on the basis of a single criterion of the source of pollutants; pollution from land-based sources, pollution from sea-based activities, and pollution from atmosphere. According to the purpose of the analysis, each category may be divided into sub-categories. For example, pollution form sea-based activities may be divided into sub-categories such as pollution from sea-bed activities, pollution from dumping, pollution from vessels, etc.

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[31] See infra. <Pollution from land-based sources>

<Pollution from land-based sources>

The 1974 Convention for the Prevention of Marine Pollution from Land-Based Sources defines "pollution from land-based sources" as the pollution of the maritime area

(i) through watercourses,

(ii) from the coast, including introduction through underwater or other pipelines,

(iii) from man-made structures placed under the jurisdiction of a Contracting Party within the limits of the area to which the present convention applies.

(iv) by emissions into the atmosphere from land or from man-made structures as defined in subparagraph (iii) above.[32]

Because pollutants produced from land-based activities are so various, most definitions of pollution from land-based sources focus on describing their pathways to the sea.[33]

Agenda 21, Chapter 17 states, "human settlement, land use, construction of coastal infrastructure, agriculture, forestry, urban development, tourism and industry can affect the marine environment. Coastal erosion and siltation are of particular concern."[34] The land itself is an efficient sink for many pollutants. Most pollutants produced on land are treated or absorbed there. A significant portion of the rest is destined to end up in the sea. Water is the most important transportation means that carries pollutants to the sea. All rivers run to the sea, carrying dissolved and suspended materials, including pollutants. Pollutants from land-based activities can also be introduced into the sea through other

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[32] Article 3 (c)

[33] The 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) defines "land-based sources" as point and diffuse sources on land from which substances or energy reach the maritime area by water, through the air, or directly from the coast. It includes sources associated with any deliberate disposal under the sea-bed made accessible from land by tunnel, pipeline or other means and sources associated with man-made structures placed, in the maritime area under the jurisdiction of a Contracting Party, other than for the purpose of offshore activities.

The 1985 Montreal guidelines for the protection of the marine environment against pollution from land-based sources defines "land-based sources" as (i) municipal, industrial or agricultural sources, both fixed and mobile, on land, discharges from which reach the marine environment, in particular: from the coast, including from outfalls discharging directly into the marine environment and through run-off; through rivers, canals or other watercourses, including underground watercourses; and via the atmosphere; (ii) sources of marine pollution from activities conducted on offshore fixed or mobile facilities within the limits of national jurisdiction, save to the extent that these sources are governed by appropriate international agreements. (Para.1 (b))

In the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area, "land-based pollution" means pollution of the sea by point or diffuse inputs from all sources on land reaching the sea waterborne, airborne or directly from the coast. It includes pollution from any deliberate disposal under the seabed with access from land by tunnel, pipeline or other means. (Art. 2, para.2)

pathways such as runoff from land, groundwater systems, pipelines, outfall structures, etc. The remaining minor portion of the pollutants produced on land is taken up into the atmosphere. But most pollutants which arrive in the atmosphere fall ultimately into the ocean, after certain residence time in the air. The ocean is therefore the final repository of an important portion of pollutants emitted on land. Pollutants produced on land are by far the most important in quantity as well as in variety. Among pollutants introduced into the ocean, these land-based sources are estimated to represent 70% of the total of marine pollution.[35]

From a legal point of view, there are some particular difficulties in dealing with pollution from land-based sources in the context of international regimes. First, these pollutants are generated within the territory of sovereign States. Second, an important portion of these pollutants comes from non-point-sources. Furthermore, before arriving in the ocean, these pollutants pass through zones under national jurisdiction, from internal waters, territorial sea to the exclusive economic zone, or continental shelf, where the primary responsibility of protecting the environment is entrusted to the governments of the coastal States. For these reasons, "there is currently no global scheme to address the special issue-area of marine pollution from land-based sources", as stated in Agenda 21.[36] At the global level, the 1982 UNCLOS provides only a general framework.[37] The 1985 Montreal Guidelines on the Protection of the Environment Against Pollution from Land-based Sources was the first attempt to address the problem of pollution from land-based sources on a global basis and through a single instrument. The Global Programme of Action (GPA) launched under the 1995 Washington Declaration on Protection of the Marine Environment from Land-based Activities, adopted in the intergovernmental conference convened in response to Agenda 21,[38] is a further step toward the development of global regime for the protection of the marine environment from land-

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[34] Agenda 21, Chapter 17, para 17.18, 19
[35] UNCED, Agenda 21, Chapter 17, para.17.18
[36] Agenda 21, Chapter 17, para.17.18
[37] In Article 207, the 1982 UNCLOS requires States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, in accordance with internationally agreed rules, standards and recommended practices and procedures. Under Articles 213, States are required to enforce the laws and regulations adopted in accordance with article 207. As such, the 1982 UNCLOS does not provide any particular rules on the matter. See infra. Chapter 3, Section 2.4 Evolution by incorporation of rules of reference.
[38] See Agenda 21, Chapter 17, para. 17.26

based sources.[39] At the regional level, some instruments, such as the 1974 Paris Convention for the Prevention of Marine Pollution from Land-Based Sources, the 1980 Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources, the 1983 Protocol for the protection of the South-East Pacific Against Pollution from Land-Based Sources, the 1990 Protocol to the Kuwait Regional Convention for the Protection of the Marine Environment Against Pollution from Land-Based Sources, deal with the specific issue-area of marine pollution from land-based sources. Some multi-purpose regional instruments, such as the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic and the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area, include the issue of marine pollution from land-based sources in their issue-areas. Since the impact of land-based pollution is concentrated in coastal zones and most land-based pollutants are produced on land under national sovereignty and traverse coastal waters under national jurisdiction, national and regional approaches can be more efficient means of dealing with this issue. This does not however preclude the necessity of appropriate global regimes for the control of this source of marine pollution.

<Pollution from sea-based activities>

Since main sea-based activities that cause marine pollution are maritime transport, dumping-at-sea and sea-bed activities, marine pollution from these activities can be divided into sub-categories of pollution from maritime transport, pollution from dumping-at-sea and pollution from sea-bed activities.

The terms "pollution from maritime transport" and "pollution from vessels" are often used synonymously. But the term "pollution from vessels" may cause confusion, because vessels can be used not only for maritime transport but also for dumping-at-sea. Deliberate disposal of wastes from vessels belongs to the category of dumping-at-sea, but it can belong to the category of pollution from vessels as well. To avoid this confusion, the term pollution from maritime transport is clearer than pollution from vessels. In practice, however, the term 'pollution from vessels' is more widely used. When the term

[39] See Thomas Mensah, The International Legal Regime for the Protection and Preservation of the Marine Environment from Land-based Sources of Pollution, in Alan Boyle and David Freestone (ed.) International

pollution from vessels is used, dumping from vessels should be understood to be excluded therefrom.

Pollution from maritime transport is mainly a problem of oil pollution. According to Agenda 21, approximately 600,000 tons of oil enter the oceans each year as a result of normal shipping operations, accidents and illegal discharges. When spilled on the sea, oil forms oil slicks, which cause damage to the marine ecosystem, by creating harmful effects on plankton, marine vegetation, fish stocks, seabirds, marine mammals, and sediments.

Pollution from maritime transport may result from operational discharges and accidental discharges. Ballast cleaning of tankers and the disposal of bilge water and fuel oil are the main causes of pollution from operational discharges. The development of deballasting methods, such as load-on-top system and segregated ballast, contributes to the reduction of discharges of oil into the sea.[40] Accidental discharges of oil can be caused by collision, grounding, or explosion of oil tankers.[41]

The total quantity of discharges from maritime casualties is less important than that from operational discharges. But the impact on marine environment from maritime casualties may be more serious than that from operational discharges, because pollution is a matter of concentration. First, oil spilled by accidental discharge is densely concentrated in a limited space and over a short period of time, while oil discharged in the course of operation of vessels is normally dispersed in a large space over a long period of time. Even the density of oil in heavily congested shipping routes is not comparable with the density of oil at the scene of a grounding tanker.[42] Second, most collisions or groundings of oil tankers happen in coastal seas, such as narrow straights or shallow coastal seas. Compared with open oceans, coastal seas are ecologically more

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Law and Sustainable Development, Oxford University Press, 2000.

[40] With the introduction of these improved methods of deballasting, the amount of oil entering the sea as a result of tanker operations has steadily reduced from an estimated 1 million t per year or more in the mid-1970s, to 700,000 t in 1981, and to 158,000 t in 1989. See R.B. Clark, *Marine Pollution*, p. 39

[41] Some of data on the large oil tanker spills may indicate the gravity of this problem; *Atlantic Empress*(1979, off Tobago, 287,000 t), *ATB Summer*(1991, off Angola, 260,000 t), *Castillo de Bellver* (1983, off Cape Town, 257,000 t), *Amoco Cadiz*(1978, Brittany, 223,000 t), *Torry Canyon*(1967, *Scilly Isles*, 119,000 t), *Braer* (Shetland Isles, 85,000 t), *Exxon Valdez*(1989, Prince William Sound, Alaska, 37,000 t). See R. B. Clark, *Marine Pollution*, p.42

[42] If the 119,000 tons of oil spilled by the Torry Canyon had been evenly dispersed on the whole Atlantic, the oil would be thinly dispersed and there would have been no harm to the marine environment.

vulnerable to oil pollution, because costal seas are more densely populated by marine living resources. Besides oil pollution, the effects of harmful anti-fouling paints on marine life can be classified into the category of marine pollution from vessels.[43] Quantitatively, pollution from maritime transport is estimated to contribute 10 % of the total marine pollution.[44]

Compared with pollution from land-based sources, pollution from maritime transport is relatively easy to deal with in the context of international regimes. Except vessels used for coastal navigation, most vessels are not entirely sheltered within the rampart of sovereignty. But complicated legal problems arise in regulating vessels having long-range activities. Ocean-going vessels, in particular oil tankers, move from a port to another, navigating through internal waters, territorial seas, exclusive economic zones of different States and the high seas. The problem of jurisdiction over moving vessels according to their location complicates the regulation of pollution from vessels. The 1982 UNCLOS and the MARPOL1973/78 deal with pollution from ships.

Dumping-at-sea is another main cause of marine pollution. According to the definition provided by the 1972 London Dumping Convention and the 1982 UNCLOS, "dumping is any deliberate disposal of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea, and any deliberate disposal of vessels, aircraft, platforms or other man-made structures at sea."[45] Following this definition, not all dumping is from vessels or sea-borne structures; there is also dumping from aircraft. But dumping is commonly thought of as pollution from sea-based activities, since the major portion of dumping is done from vessels. In essence, dumping is a problem of choice of place for disposal of wastes. If not dumped at sea, wastes should be treated or dumped somewhere on land. Dumping at sea is a deliberate disposal relying on the absorptive capacity of the ocean.[46] Various substances dumped at sea, from biodegradable

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[43] In order to protect the marine environment from anti-fouling systems, International Convention on the Control of Harmful Anti-fouling Systems has been adopted in 2001 under the auspices of IMO. Anti-fouling systems, i.e. a coating, paint, surface treatment, surface or device that is used on a ship to control or prevent of unwanted organisms, proved to kill barnacles and other marine life, persist in the seawater and harm the marine environment. See www.imo.org/Conventions/

[44] UNCED, Agenda 21, Chapter 17, para.17. 18

[45] The 1982 UNCLOS, Article 1, para.1 (5) (a) the 1972 London Dumping Convention, Article 3, para.1.a

[46] Martine Rèmoond-Gouilloud, Du Droit de détruire, Presses Universitaires de France, 1989, pp. 61-72 «*technique d'éloignement*».

material to radioactive material account for approximately 10 % of total marine pollution.[47]

Considering the fact that the impact of dumping on the marine environment differs according to the characteristics of the substances dumped at sea, materials are commonly classified according to their degree of harmfulness. The 1972 London Dumping Convention classifies materials into three categories: the black list (Annex I) contains the most harmful wastes and other matter whose dumping is prohibited; the grey list (Annex II) contains wastes and other matter which can be dumped with a special permit; and the white list (Annex III) contains wastes and other matter which can be dumped with a general permit. The 1996 Protocol to the 1972 London Dumping Convention introduces the 'reverse list' approach, which means that all dumping is prohibited unless explicitly permitted in accordance with the Protocol.[48] Sea-bed activities include human activities in the sea such as exploration, exploitation of oil or other sea-bed mineral resources. The pollution from these activities is concentrated in some limited areas according to deposits of mineral resources. Quantitatively, pollution from sea-bed activities are limited so far. Most sea-bed activities are conducted in areas under national jurisdiction. For these activities, the task of regulation is entrusted to coastal States under the regime of territorial sea, EEZ or continental shelf. The sea-bed activities undertaken in the Area, beyond national jurisdiction, can be regulated by the special international regime, with the International Seabed Authority as its central organ.

<Pollution from atmosphere>

The global ocean has a large sea/air interface through which it exchanges energy and matter with the atmosphere. By means of evaporation of aerosol and gas evolution, the sea sends different materials to the atmosphere. In return, the sea receives materials from the atmosphere through precipitation and dry deposition. Since the global ocean covers 71% of the earth surface, an important portion of the pollutants contained in the atmosphere end up falling into the sea.

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[47] UNCED, Agenda 21, Chapter 17, para.17.18

[48] Articles 4, 8, Annex I, II For the content of the 1996 Protocol, see infra. Chapter 4
The 1996 protocol is not effective at the end of 2002.

Most pollutants residing in the atmosphere are generated on land. For example, atmospheric inputs account for from 80 to 99 per cent of PCBs, DDT, HCB and HCH found in open ocean seawater,[49] but these are materials emitted on land. For these pollutants, the atmosphere provides only a pathway to the sea.

If all the pollutants arriving at sea "from and through" the atmosphere are included into a single category, they represent 33% of total marine pollution.[50] But if the pollution *through* the atmosphere is excluded, the pollution *from* the atmosphere is very limited in quantity.

One of the difficulties which arises in dealing with the pollution from air-based pollution is due to the mixing and spreading capacity of the atmosphere, which makes it difficult to trace the movement of pollutants. Once pollutants are dispersed in the atmosphere, they are almost beyond human control, physically and legally. Therefore atmospheric pollution can be more effectively controlled at its source than in the atmosphere. Pollution from atmosphere is relatively less serious, but even more difficult to deal with. Few international norms have been developed on the matter. Article 212 of the 1982 UNCLOS provides a general framework, by exhorting States to adopt laws and regulations, and take other measures as may be necessary, to prevent, reduce and control pollution of the marine environment from or through the atmosphere. To date, there is no special convention aimed at controlling pollution of the marine environment from aircraft. Even Agenda 21 is relatively indifferent to this problem.

1.2 Over-exploitation of marine living resources

Marine living resources constitute essential components of the marine environment. They are under double threat from the human species: direct threat from human predation and indirect threat through marine pollution. The most serious human impact on the marine ecosystem is caused by the catch of fish stocks to the point of threatening their

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[49] GESAMP, The state of the marine environment, 1990, p. 36 See also R. B. Clark, Marine Pollution, Fourth Edition, Clarendon Press Oxford, 1997, pp. 83-84

[50] GESAMP, ibid.

reproductive capacity.[51] The problem of over-fishing has been accentuated by the increase in demand for fish. This increase in demand is associated with the increase in human population, combined with the change in nutritional patterns.[52] The increase in demand has induced the increase in supply. On the other hand, the increase in the supply of fish has been accelerated by the development of technology applied to fishing and fish processing.

But what level of catch can be said to be over-exploitation? The concept of over-exploitation of renewable resources should be understood in relation to the capacity of reproduction of the fish stocks in question. So, the concept of over-exploitation is associated with the concept of sustainability, which means the maintenance of some kind of ecological equilibrium. All ecosystems are cybernetic systems returning to a steady state after oscillation within a certain limit by the capacity of self-regulation and self-restoration. Once an ecosystem surpasses this threshold, by internal or external factors, it cannot return to the steady state. In the idea of sustainability, natural resources are assimilated with capital, that is, a stock of real goods with the power of producing further goods in the future. Natural capital has most of the characteristics of the traditional concept of capital. If humans consume renewable resources within the limit of reproduction, the stock of natural capital may remain intact, and be bequeathed to future generations.[53]

The ecological complexity inherent in marine living resources entails complex legal issues. First of all, marine living resources are typical commons and apt to suffer the tragedy of the commons. After the advent of the EEZ regime, under which coastal States have sovereign rights for the purpose of exploring, exploiting, conserving and managing the natural resources within the limit of 200 nautical miles from the baselines, the great

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[51] The total world annual fish catch has remained around 91 million tons since 1994, but per capita catch has slightly declined from 17.2kg in 1988 to 15.9kg in 1995. Farmed fish is rapidly increasing up to 19 million tons in 1995. See FAO, *Yearbook of Fishery Statistics: Catches and Landings*, 1988 to 1995

[52] The total world fish consumption is a function of the human population and the per capita fish consumption. Per capita annual fish consumption is 7.5 kg in 1950, 9.5 kg in 1955, and 12.0 kg in 1960. Since 1965 per capita fish consumption has been stabilised within the band between 15.0 and 17.0 kg. This trend indicates that until 1965 the increase in demand for fish was accelerated by the nutrient pattern of humans in addition to the increase in human population, and since 1965 the increase in demand for fish is roughly proportional to the growth of human population.
See Lester R. Brown, Michael Renner, Christopher Flavin, *Vital Signs 1997-1988*, The environmental trends that are shaping our future. Earthscan Publications Ltd. London, 1997, p. 33

majority of fish stocks are now placed under national jurisdiction. Only a minor portion of fish stocks still remains as *res communis* in the high seas. But even the fish stocks under national jurisdiction maintain the characteristics of the commons among competing fishermen of the coastal State, if not properly regulated. Furthermore, there are many species whose life span is not confined within the boundaries of national jurisdiction, such as straddling species, highly migratory species, anadromous stocks, and catadromous species. Another fundamental cause of legal complication concerning marine living resources is their ecological interdependence. Because of a high degree of ecological interdependence among marine living resources, an isolated regime for the protection of a particular species cannot be efficient, or of little value for the whole marine ecosystem. This problem requires an ecosystem approach.[54]

1. 3 Over-development of coastal areas

Humans have shown a tendency to prefer to dwell along coastlines. This preference fosters human migration toward the margin of the sea. According to Agenda 21, "more than half of the world's population lives within 60 km of the shoreline, and this could rise to three quarters by the year 2020."[55] The Food and Agricultural Organization states; "the population of the world's coastal zones is expected to double within the next 20 to 30 years. This rapid increase in construction and outflows of urban and industrial wastes will further endanger fragile coastline environments."[56] In the United States, "each year approximately 300,000 additional acres of U.S. coastal areas are developed, which has resulted in the continued disruption of complex ecosystem composed of estuaries, lagoons, beaches, bays, harbors and islands that shelter a vast array of flora and fauna..."[57]

The large-scale movements of populations to coastal areas have been coupled with a significant increase in economic activity and industrialization along the coastline –

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[53] See infra. Chapter 4
[54] See infra. Chapter 4
[55] Agenda 21, Chapter 17, para.17.3
[56] FAO, Factfile: coastal environments under threat. FAO, 1998, http:/www.fao.org/news/factfile/FF9804-E.HTM
[57] John Warren Kindt, *Marine pollution and the Law of the Sea*, William S. Hein & Co. Inc., Buffalo, N.Y.1986, pp.6-7

such as oil and gas exploration, mining, fish farming, tourism, development of ports, marinas and coastal defences- putting enormous pressure on coastal areas.[58] The principal problem of marine pollution caused by urbanization and industrialization of the coastal areas is the increase in land-based sources of marine pollution. Besides the problem of marine pollution, human concentration in shoreline areas causes a problem of destruction of coastal ecosystems.[59]

Conscious of the complexity of the impact of coastal development on the marine environment, Agenda 21 has chosen the integrated management of coastal and marine areas as the first item among its seven programme areas. The impact of coastal development is basically a national issue, since the activities of coastal development are undertaken on the territory, in internal waters or territorial seas. It is difficult for international regimes to intervene in these activities undertaken within the boundaries of areas under national jurisdiction. But the effects of the coastal development may extend beyond the limit of national jurisdiction, through the ecological interdependence and the movement of ocean currents. Therefore regional approach can be effective in dealing with the issue of integrated management of coastal zones.[60]

The problems relating to marine pollution, the over-exploitation of marine living resources and the impact of coastal development are closely interconnected. Marine pollution entails deleterious effects on marine living resources. Coastal development also causes harm to marine living resources. Marine living resources play important roles in regulating the quality of the marine environment, by bio-degrading wastes and contributing to the biochemical cycles of many materials. Solutions for each problem should be searched for on the basis of each particular problem, since each problem has its own particular characteristics, but such solutions should be evaluated in a holistic and integrated perspective, taking account of the complexity of the relations among the problems.[61]

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[58] UN Documents, United Nations Convention on the Law of the Sea 20th Anniversary (1982-2002), p. 3

[59] See The Noordwijk Guidelines for Integrated Coastal Zone Management, Distributed at the World Coast Conference 1993, 1-5 November 1993, Noordwijk, the Netherlands, "Concern is growing in particular about the destruction of natural coastal ecosystems by the demands placed upon them by population and economic growth." P. 3

[60] See The Noordwijk Guidelines for Integrated Coastal Zone Management, op.cit.

2. Ethical foundations for the protection of the marine environment

Once problems are perceived, the objectives should be established to resolve the problems. An agenda is composed of the established objectives. Before examining the agenda established by international society with a view to ameliorating the marine environment, it is desirable to review different streams of environmental ethics underlying international regimes for the protection of the marine environment. As Stuart Bell & Donald McGillivray assert, "Environmental values affect the way in which law is made and the way it operates on a practical level. Although there is no direct connection between the two, there are many ways in which values play a part in the operation of an environmental regulatory system."[62]

2.1 Anthropocentrism and biocentrism

If the marine environment is to be protected and preserved, is it for the human species or for the marine environment itself? The answer to this question should stem from more fundamental philosophical foundations with regard to the man-nature relationship: should nature be preserved for the sake of humans or for the sake of nature itself? Now that the human species is endowed with the power to destroy nature, the environmental ethics on this question should orient the norms of environmental regimes designed to regulate human activities causing environmental impact. Two lines of thought contrast with each other; anthropocentrism and biocentrism, each having a wide spectrum.

Anthropocentrism is based on the traditional western culture. According to the Judeo-Christian views, human beings are created in the image of God and authorised by God to rule over all the other creatures.[63] This human-centred belief was reinforced by Cartesian man-nature dualism, which proclaims; «*L'homme doit se rendre maître et possesseur de la nature*», because man thinks (*res cogitans*), but nature does not (*res*

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[61] For integrated approach, see infra. Chapter 4.
[62] Stuart Bell & Donald McGillivray, Environmental Law, 5th Edition, Blackstone Press, 2001, p.29
[63] After the Deluge, God said to Noah and his sons "Everything that lives and moves will be food for you. Just as I gave the green plants, I now give you everything." The Old Testament, Genesis 9:3

extensa).[64] The conviction of human dominance over nature was further consolidated by the belief in permanent progress of science and technology. This anthropocentric worldview has become rooted in modern legal and economic systems. In the capitalist market system, value is determined in terms of utility, quantifiable in exchange value measured on the market. From this anthropocentric viewpoint, everything is valued in the light of human preferences and human interests. Humans, distinct from nature, are valuers of nature. Non-human things have only instrumental value, measured in terms of their utility as resources for humans.[65]

In contrast to the anthropocentric man-nature dualism, biocentric (ecocentric) ethics are based on the basic assumptions that humans are part of nature and inseparable therefrom, and humans are not valuers of nature. The concept of intrinsic value[66] constitutes the main theoretical pillar supporting biocentric ecologism. The essence of the intrinsic value argument is that nature has autotelic value, independent of any awareness, interest or appreciation by a conscious being. John O'Neill underlines three basic senses of intrinsic value;[67] (1) Intrinsic value is used as a synonym for non-instrumental value. An object has instrumental value in so far as it is a means to some other end. An object has intrinsic value if it is an end in itself. (2) Intrinsic value is used to refer to the value an object has solely in virtue of its 'intrinsic properties'. Intrinsic properties of an object are its 'non-relational properties'.[68] (3) Intrinsic value is used as a synonym for 'objective

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[64] René Descartes, *Discours de la Méthode*, III, IV

[65] Modern anthropocentric ecological ethics advances the subjective theory of value, which can be summarized as follows;
Values are determined through the preference rankings of valuers (the *no detachable values assumption).*
Valuers' preference rankings are determined through valuers' interests (the *preference reduction thesis).*
Valuers are humans (persons) (the *species assumption).*
Therefore, values are determined through human interests (through the interests of persons).
* Richard Routley and Val Routley present this summary to criticise the subjective theory of value, in their article 'Against the Inevitability of Human Chauvinism', in Robert Elliot (ed.), Environmental Ethics, Oxford University Press, 1995, p. 111

[66] It was G.E. Moore who first defined the term 'intrinsic value', long before the emergence of the concept of ecocentrism. According to him, «To say a kind of value is 'intrinsic' means merely that the question whether a thing possesses it, and in what degree it possesses it, depends solely on the intrinsic nature of the thing in question. G.E. Moore, 'The conception of intrinsic value', in Philosophical Studies, Routledge & Kegan Paul, 1922. P. 260

[67] John O'Neill, *Ecology, Policy and Politics*, Routledge, 1993, pp. 8-10 Arne Naess, 'Identification as a Source of Deep Ecological Attitudes', in Michael Tobias (ed.), *Deep Ecology*, Avant Books, second edition, 1988, p. 268

[68] There are two interpretations for non-relational properties. First, the non-relational properties of an object are those that persist regardless of the existence or non-existence of other objects (weak interpretation).

value', i.e. value that an object possesses independently of the valuations of valuers. It is to deny the subjectivist view that the source of all value lies in valuers - in their attitudes, preferences and so on.

The theory of 'deep ecology' advocated by Arne Naess and some other radical ecologists since 1973,[69] constitutes one of the philosophical foundations of the intrinsic value arguments. Naess formulates the intrinsic value as follows; «Something A is said to have a value independent of whether A has a value for something else, B. The value of A must therefore be said to have a value inherent in A. A has *intrinsic value*.»[70]

Biological egalitarianism, which calls for the respect of all other living and non-living things,[71] is a corollary of the concept of intrinsic value. If all living and non-living things have their intrinsic values, these values must be equal. If there is no valuer, there is no way of establishing a hierarchy of values among objects. Biological egalitarianism is indispensable for the defence of the concept of intrinsic value. Any retreat from the cause of biological equality would undermine the very foundation of intrinsic value, because inequality means differentiation of the values of all things, which in turn presupposes human value judgement. The concept of biological egalitarianism is therefore inseparable from the concept of intrinsic value.

The merits and demerits of anthropocentrism and biocentrism may be evaluated in the light of their moral value on the one hand, and their capacity of generating practical norms conducive to environmentally sound behaviour on the other hand.

It is widely believed that the sense of human superiority and the belief in instrumental values of non-human things based on anthropocentrism contributed to human aggressiveness toward nature. Human-centred vision, coupled with property rights

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Second, the non-relational properties of an object are those that can be characterized without reference to other objects (strong interpretation). See John O'Neill, op.cit.

[69] The term 'deep ecology' was coined by Arne Naess in 1973, in an effort to 'transcend the limit of any particular science of today, including systems theory and scientific ecology', in his article 'The Shallow and the Deep, Long-Range Ecology Movements', *Inquiry*, 16(1973)

[70] Arne Naess, 'Identification as a Source of Deep Ecological Attitudes', in Michael Tobias (ed.), *Deep Ecology*, Avant Books, second edition, 1988, p. 268

[71] For R. Nash, «Rocks, just like people, do have rights in and of themselves. It follows that it is in the rock's interests, not the human interested in the rock, that it is being protected.» R. Nash, 'Do rocks have rights?», *The Center Magazine*, November/December 1977, cited in David Pepper, *Modern environmentalism*, Routledge, 1996, p. 49 George Sessions draws attention to the theology of Saint Francis(1181-1226), who «tried to depose man from his monarchy over creation and set up of a democracy of all God's creatures». George Sessions, 'Ecological Consciousness and Paradigm Change', in Michael

granting the right of *usus, fructus, abusus* to the proprietor and propelled by human egoism, has created even a sense of the right to destroy (*droit de détruire*).[72] Now that mankind is aware of the risk of self-destruction through the destruction of the environment, anthropocentrism itself begins to serve as a driving force of human efforts for the protection of the environment. Humans are now conscious of the necessity of conserving natural resources for the welfare and survival of humans themselves.

Biocentrism is a radical environmentalist vision. But paradoxically, it can be used or abused to justify an anti-environmental attitude, as Elliott Sober points out this risk; "If we are part of nature, then everything we do is part of nature, and is natural in that primary sense."[73] In fact, the following arguments can be derived from the intrinsic value combined with biological egalitarianism: If everything has its own intrinsic value, and everything is equal, then every pollutant has also the same intrinsic value as any other materials, and every ecosystem has the same value as any other. If a given ecosystem is destroyed, it will be succeeded by another. Then where is the reason to worry about the change of ecosystems, while the succeeding ecosystem has the same intrinsic value as the replaced one?

As for the capacity of generating practical norms for the protection of the environment, anthropocentrism is a very fecund ideology. When any norm is properly based on human egoism, it can be a strong device for the protection of the environment. For example, the pollution tax, if properly applied, can motivate humans toward environment-friendly conduct. By complying with such a rule, humans are expected to behave in an environmentally sound manner first of all for their own sake.

The arguments of intrinsic value and biological equality have much difficulty in providing concrete criteria for the choice of human actions in relation to nature.[74] The question posed by Martine Rèmond-Gouilloud reflects this problem; «*Au nom de quel critère privilégier un élément naturel plutôt qu'un autre*?»[75] Arne Naess presents two

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Tobias, ed., *Deep Ecology*, Avant Books, second edition, 1988, pp.36-7

[72] See Martine Rèmond-Gouilloud, *Du droit de détruire*, Presses Universitaires de France, 1989 Rèmond-Gouilloud derives the concept of the right to destroy from the concepts of *abusus*.

[73] Elliott Sober, '*Philosophical Problems for Environmentalism*', in Robert Elliot, Environmental Ethics, Oxford University Press, 1995, p. 234

[74] See Tim Hayward, Ecological Thought, Polity Press, 1995, p. 69 "It (deep ecology) fails to generate the criteria needed to serve as a guideline."

[75] Martine Rèmond-Gouilloud; *Du droit de détruire*; Presse Universitaire de France, 1989; p:45

criteria to be applied in defining priority in the conflict of interests: « vitalness and nearness »: "The more vital interest has priority over the less vital. The nearer has priority over the more remote - in space, in time, culture, species...It may be of vital interest to a family of poisonous snakes to remain in a small area where children play, but it is also of vital interest to children and parents that there are no accidents. The priority rule of nearness makes it justifiable for the parents to remove the snakes. But the priority of vital interest of snakes is important when deciding where to establish the playgrounds."[76]

Paradoxically, we can find a firm subjectivism and a profound anthropocentrism embedded in these criteria, contrary to the doctrine of deep ecology. Is not the determination of vitalness a valuing act? In the example given by Naess, it is human beings who determine the degree of vitalness. It means that human beings emerge as valuers. Thus the criterion of vitalness undermines the very foundation of intrinsic value. The criterion of nearness is also a self-defeating argument. In the concept of nearness, the critical element is the base point from which the distance is measured. In the example given by Naess himself, the base point is ego. Distance - in space, time, culture, species - is measured from ego. This is ego-centrism in its purest sense.[77]

Biological egalitarianism has also much difficulty to explain the relationship between prey and predator.[78] It is even more difficult to explain how humans can consume living resources.[79]

Applied to the issue-area of the marine environment, the two ideologies, *i.e.* anthropocentrism and biocentrism, will give different answers to the question "if the marine environment should be preserved, is it for the human species or for the marine environment itself?" From the anthropocentric standpoint, the marine environment should be protected for the sake of the maintenance of its utility for mankind, *i.e.* values of the

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[76] Arne Naess, 'Identification as a Source of Deep Ecological Attitudes', in Michael Tobias, ed., *Deep Ecology*, Avant Books, second edition, 1988, pp.266-7

[77] 'I', 'you', 'here', 'there', 'this', 'that', 'now', 'past', 'present', and 'future', all these concepts, implying the distance from ego, are typical egocentric particulars. See *The Cambridge Dictionary of Philosophy*, 1995, p. 217

[78] For Tim Hayward, "it is not wholly clear in what sense it would be meaningful to say of prey and predator that they have an equal right to flourish. See Tim Hayward, Ecological Thought, Polity Press, 1995, p. 69

[79] Robin Attfield argues: "if the death of a human would result in a greater number of flourishing lives (e.g. maggots) than the number of lives which the same human being sustains when alive (e.g. intestinal flora),

marine environment as a component of the life-support system, a provider of nutrients, a regulator of the climate, routes of transportation, places for leisure, and so on. From the biocentric viewpoint, the marine environment should be preserved for its own intrinsic value, irrespective of these utilities for human beings.

In international environmental law, anthropocentrism is the dominant underlying ideology. In the 1972 Stockholm Declaration, the anthropocentric ideology is reflected, in paragraphs such as; "The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world."[80] In the Rio Declaration of 1992, it is more explicitly declared that "Human beings are at the centre of concerns for sustainable development."[81]

But the cause of intrinsic value has begun to find some echo in international instruments since the end of the 1970s. The 1979 Convention on the Conservation of European Wildlife and Natural Habitats recognizes; "wild flora and fauna constitute a natural heritage of aesthetic, scientific, cultural, recreational, economic and *intrinsic value* that needs to be preserved and handed on to future generations."[82] In the 1982 World Charter for Nature, the idea of intrinsic value is reflected in phrases such as, "Mankind is a part of nature...", and "Every form of life is unique, warranting respect regardless of its worth to man." In the Convention on Biological Diversity of 1992, it is declared that "the Contracting Parties are conscious of the *intrinsic value of biological diversity* and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components."[83]

2. 2 Conservationism and Preservationism

Conserve or preserve? Should a species be conserved to the extent that it is useful for human well-being? Or should it be preserved independently of its utility for humans? These are issues concerning policy orientation stemming from the basic standpoints with

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then it would be better for the human being to die." Robin Attfield, Silvan, Fox and Deep Ecology: A View from the Continental shelf, *Environmental Values*, 2, 1 (1993), pp. 21-32

[80] Declaration of the UN Conference on the Human Environment (UNCHE), Stockholm, 5-16 June 1972, Preamble, para.2.

[81] Declaration of the UN Conference on Environment and Development (UNCED), Principle 1

[82] Convention on the Conservation of European Wildlife and Natural Habitats, 1979, Preamble

regard to the man-nature relationship. An anthropocentric vision logically leads to conservationist policies, while a biocentric vision advocates preservationist policies.

Conservation means the saving of resources for future use. According to John Passmore, "To conserve is to save...the saving of species from extinction or of wilderness from land-developers as much as the saving of fossil fuels or metals for future use...The conservationist accepts the general principle that it is man's task to make of the world a better place for men to live in."[84] The typical paradigm of environmental policy derived from this concept is 'wise use', or 'rational and efficient management' of natural resources. In contrast, preservation means "the attempt to maintain their present condition such areas of the earth's surface as do not yet bear the obvious marks of man's handiwork and to protect from the risk of extinction those species of living beings which man has not yet destroyed."[85] The rationale of this standpoint is that wilderness and species should be preserved because they have a 'right to exist' and intrinsic value. Typical policy paradigm derived from the preservationism is 'set-aside' or 'wilderness-for-wilderness-sake'.

In international law, the conservationist approach is the dominant policy paradigm. Most of international instruments, soft or hard, are aimed at conserving living or non-living things as 'resources' having effective or potential value for humans. Even international instruments adopted for the protection of wildlife emphasise the value of wildlife for humans. For instance, the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) recognizes "that wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come, and the ever-growing value of wild fauna and flora from aesthetic, scientific, cultural, recreational and economic points of view."[86] The 1979 Convention on the Conservation

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[83] United Nations Convention on Biological Diversity, 1992, Preamble

[84] John Passmore, Man's responsibility for nature, Duckworth, Second edition, 1980, p. 73-4
In the same line, William M. Sutherland considers the meaning of the term 'conserve' to be established by the specific and immediately recognizable purpose which the term denotes, which is to treat the object of the activity in such a way that it will be available for later use. William M. Sutherland, Management, Conservation, and Cooperation in EEZ Fishing: The Law of the Sea Convention and the South Pacific Forum Fisheries Agency, *Ocean Development and International Law*, Volume 18, Number 6, 1987, p. 617

[85] John Passmore, op.cit., p. 101

[86] Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973, Preamble

of Migratory Species of Wild Animals recognizes "that wild animals in their innumerable forms are an irreplaceable part of the earth's natural system which must be conserved for the good of mankind."[87] Polar bears are to be conserved as "significant resources", [88] whales as "the great natural resources for future generations."[89] North Pacific fur seals are to be conserved in a manner to achieve "the maximum sustainable productivity."[90]

Even in the cases where the concept of intrinsic value is introduced in international instruments, it fails to generate concrete preservationist injunctions. For example, the concept of *intrinsic value* introduced in the 1979 Convention on the Conservation of European Wildlife and Natural Habitats,[91] the term "*mankind is a part of nature*" included in the 1982 World Charter for Nature[92] and the concept of the *intrinsic value of biological diversity* embraced in the 1992 Convention on Biological Diversity[93] are mere expressions of the *prise de conscience* of the intrinsic value, rather than concrete injunctions aimed at regulating human behaviour in respect of the intrinsic value of all objects.

When applied to the issue-area of the marine environment, preservationism would mean an absolute ban on the disturbance in the marine life, such as the prohibition of all fishing activities, whereas conservationism would command the optimal use of marine resources for the maximum well-being of mankind in the long term. Conservationism calls for the balance between utilization and conservation of natural resources, and generates thereby such policy paradigms as sustainable utilization, maximum sustainable yield, total allowable catch, etc.[94]

2.3 Individuals, species, communities or ecosystems

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[87] The 1979 Convention on the Conservation of Migratory Species of Wild Animals, Preamble
[88] The 1973 Agreement on the Conservation of Polar Bears, Preamble
[89] The 1946 International Convention for the Regulation of Whaling, Preamble
[90] The 1957 Interim Convention on the Conservation of North Pacific Fur Seals, Preamble
[91] The 1979 Convention on the Conservation of European Wildlife and Natural Habitats, Preamble. See above p.31
[92] World Charter for Nature, 1982, Preamble.
[93] The 1992 United Nations Convention on Biological Diversity, Preamble.
[94] See infra. Chapter 4

Preservation and conservation are still quite abstract concepts. For humans to act in conformity with the cause of preservation or conservation, they need more action-oriented specific injunctions as to the question of the real object of preservation or conservation. Preserve or conserve every individual, every species, every community, every ecosystem, or the entire biosphere? On this point, different spectrums of atomism and holism contrast with each other.

2.3.1 Preservation at individual level

Advocates of animal rights are generally preoccupied with the fate of individual beings, from the atomist viewpoint. The core of their animal welfarism is that it is each individual that should be protected, because it is individual which is sentient, while species or other collective entities are abstract things.[95] Joel Feinberg argues, for example, that "a whole collection, as such, cannot have beliefs, expectations, wants, or desires...Individual elephants can have interests, but the species elephant cannot".[96] For Peter Singer, "species as such are not conscious entities and so do not have interests above and beyond the interests of the individual animals that are members of the species."[97]

If it is individuals that should be preserved, does it mean the preservation of every individual or some selected individuals? In order to be consistent with the philosophical foundation of the preservationism, *i.e.* the intrinsic value and biological egalitarianism, every individual should be preserved. But preservation of every individual is an unnatural and self-contradictory objective. It is unnatural in that it goes against the mechanisms of food chain. Between predator and prey, who should survive? It is self-contradictory in that the preservation of every individual results in self-destruction of all individuals; if a human being is determined to preserve every individual around him, he cannot preserve himself. Preservation of individuals on selective basis is practicable, but inconsistent with

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[95] For animal welfarism, see Gareth Edwards-Jones, Ben Davies and Salmon Hussain, Ecological Economics, Blackwell Science, 2000, pp. 79-80

[96] Joel Feinberg, 'The Rights of Animals and Unborn Generations', in W. T. Blackstone, (ed.), Philosophy and Environmental Crisis, University of Georgia Press, 1974, pp.55-6

[97] Peter Singer, 'Not for Humans only', in K. E. Goodpaster and K. M. Sayre, (ed.), Ethics and Problems of the 21st Century, University of Notre Dame Press, Indiana, 1979, p.203

the biological egalitarianism, on which animal rights are founded. Whatever the criterion of selection, humans intervene as absolute arbiters.

2.3.2 Preservation at species level

Many international instruments and national laws and regulations for the protection of the biological diversity are aimed at preserving natural resources at the species level. Biological diversity means the diversity of species. In international conventions, such as the 1973 CITES, the 1979 Convention on the Conservation of Migratory Species of Wild Animals, the 1992 United Convention on Biological Diversity, the focus is placed on the preservation of species. The term 'endangered' means that a particular species is in danger of extinction throughout all or a significant portion of its range.[98]

Preservation of each species is valuable in maintaining biological diversity. But preservation of each species without taking account of its ecological relations with other species might be meaningless, or even dangerous, in the context of the ecosystem. Suppose that in the Antarctic ocean, only 1 % of krills are preserved. This preservation satisfies completely the criterion of preservation at species level, but many Antarctic species of upper trophic levels, such as penguins, Antarctic seals and whales, would become finally extinct.

2.3.3 Preservation at community level

For Aldo Leopold, the object of preservation should be each community. He argues: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise".[99]

The idea of preservation of the integrity of every community cannot generate practicable guidelines for human activities. A biotic community is simply an aggregation of species, which occurs in the same place at the same time.[100] For Aldo Leopold's

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[98] See Convention on the Conservation of Migratory Species of Wild Animals, Article 1 Interpretation.
[99] Aldo Leopold, A Sand County Almanac, New York, Oxford University Press, 1949, pp.224-5

[100] See T.J. King, Ecology, Second edition, Nelson, 1989, p. 2

proposition to be meaningful, it should be combined with a notion of ecological relationship among the species existing in the same place at the same time.

2.3.4 Preservation at ecosystem level

For Holmes Rolston III, "The species defends its kind against the world, but at the same time interacts with its environment, functions in the ecosystem, and is supposed and shaped by it...Neither the individual nor the species stands alone; both are embedded in a system. It is not preservation of *species* but of *species in the system* that we desire."[101]

The smallest unit of holistic concepts of systemic integrity is ecosystem. Ecosystem means "a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit."[102] The preservation of an ecosystem requires not only the preservation of component species but also the maintenance of certain equilibrium among living and non-living things. As the preservation of species or communities, the preservation of ecosystem is a kind of holistic approach. A moral question may arise from these holistic approaches. The standpoint that the ecological value of all individuals is to be found in their contribution to the functioning of their larger ecosystem can be criticized as 'environmental fascism'.[103] Applied to humans, a holistic criterion may entail human rights problems. In particular, if combined with biological egalitarianism, this holism could justify the sacrifice of individual human beings in the interests of the human species.

If developed as a purely metaphysical concept, neither atomism nor holism can provide an appropriate paradigm of human behaviour, because they should, to be consistent, rely on extremist logic. An atom or a whole means an endpoint of the continuum of the universe. In reality, however, individuals, species, ecosystems can be perceived as atoms and wholes according to one's point of view. An ecosystem is a

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[101] Holmes Rolston III, 'Duties to Endangered Species', in Robert Elliot, ed., *Environmental Ethics*, Oxford University Press, 1995, p.72

[102] United Nations Convention on Biological Diversity, Article 2 Use of Terms

[103] See Bryan Norton, 'Ecological Health and Sustainable Resource Management', in Robert Costanza (ed.), Ecological Economics, Columbia University Press, pp.102-117 It is T. Regan who criticizes the «environmental fascism».

super-organism for its components, but an atom in the context of the biosphere, as pointed out by Bernard Fischesser and Marie-France Dupuis-Tate, "*L'écosystème est super-organisme et cellule élémentaire de la biosphere.*"[104] So is each individual animal or plant. Agenda 21 also takes a similar viewpoint, stating that "the marine environment forms an integrated whole that is an essential component of the global life-support system."[105] In generating norms aimed at regulating human behaviour toward an environmentally sound attitude, a pragmatic holism, based on the concept of open system, could be more realistic.

In international instruments relating to the conservation of living resources, the preservation of species is the dominant idea. The 1992 Convention on Biological Diversity is a crystallization of the logic of preservation at species level. The concept of biological diversity focuses on the number of species. But this Convention recognizes the inseparability of species from their ecosystem, as the definition of biological diversity states; "Biological diversity means the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."[106]

In the field of the marine environment also, it is at species level that most fishing regimes are designed to protect the environment. For example, maximum sustainable yield is a concept based on the optimal use of a specific species.

But the idea of the conservation of ecosystem began to find its way in international instruments since the 1980s. The notion of ecosystem approach is embedded in the regime for the protection of Antarctic environment,[107] the 1982 UNCLOS, Agenda 21 and many other subsequent instruments.[108]

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[104] Bernard Fischesser and Marie-France Dupuis-Tate, *Le Guide illustré de l'Ecologie*' Editions de la Martinière'1996; p:227

[105] UNCED, Agenda 21, Chapter 17, para. 17.1

[106] Article 2

[107] In 1980 Convention on the Conservation of Antarctic Marine Living Resources, the protection of the integrity of the ecosystem of the seas surrounding Antarctica is emphasised in the preamble, and the geographical scope of the Convention is defined on the basis of the Antarctic Convergence, which forms a boundary of Antarctic marine ecosystem. In the 1991 Protocol to the Antarctic Treaty on Environmental Protection, the object to protect is "the Antarctic environment and dependent and associated ecosystems".

[108] See infra. Chapter 4

3. International agenda for the protection of the marine environment

3.1 Agenda 21

The most comprehensive agenda ever made by international society in the issue-area of the protection of the marine environment is Chapter 17 of Agenda 21 adopted by universal consensus in the 1992 UNCED, with the participation of 176 States and more than fifty intergovernmental organizations.[109] The supreme guiding principle of Agenda 21 and other UNCED instruments is sustainable development.[110]

3.1.1 Structure of Chapter 17 of Agenda 21

Chapter 17, entitled "protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources", identifies seven programme areas: (a) Integrated management and sustainable development of coastal areas, including exclusive economic zones; (b) Marine environmental protection; (c) Sustainable use and conservation of marine living resources of the high seas; (d) Sustainable use and conservation of marine living resources under national jurisdiction; (e) Addressing critical uncertainties for the management of the marine environment and climate change; (f) Strengthening international, including regional, cooperation and coordination; (g) Sustainable development of small islands.[111]

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[109] The Conference has produced three non-binding instruments and two treaties; the Rio Declaration on Environment and Development, the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forest, Agenda 21, the Convention on Biological Diversity, and the United Nations Framework Convention on Climate Change.

[110] See infra. Chapter 4

[111] Agenda 21, Chapter 17, para.17.1

Each programme area is composed of four elements: 1) Basis for action, 2) Objectives, 3) Activities, 4) Means of implementation. The item 'basis for action' contains an evaluation of the present situation of the programme area. The item 'objectives' enumerates the targets that States will pursue under the guidance of the principle of sustainable development. The item 'activities' formulates concrete actions for the States to take in order to realize the objectives, such as management-related activities, data and information, international and regional cooperation and coordination. The item 'means of implementation' is composed of financing and cost evaluation, scientific and technological means, human resource development, and capacity-building. This structure is designed in such a way as to guide to rational behaviour, by enhancing cognitive rationality (Basis for action), axiological rationality (Objectives), and instrumental rationality (Activities and means of implementation).[112]

3.1.2 Main issues of programme areas

A. The programme area of the integrated management and sustainable development of coastal areas, including exclusive economic zones

In the programme area of the integrated management and sustainable development of coastal areas, Agenda 21 expresses concern over the trend of concentration of world population in the coastal areas. The concentration of human settlements in the coastal areas causes an increase in impact of the land-based pollution on sea areas. The integrated management and sustainable development of coastal areas contains some legal implications.

First, the integrated management of marine and coastal areas, based on the human awareness of the close ecological interdependence between marine and coastal ecosystems, tends to extend the geographical scope of international law on the marine environment. In the definition of marine pollution formulated in the 1982 UNCLOS, estuaries are considered to constitute a component of the marine environment.[113] Agenda

[112] For the different concepts of rationality, see infra. Chapter 5
[113] See supra. 1.1.1 The concept of marine pollution

21 goes farther, having wider geographical scope covering not only marine realm but also coastal land areas. This is a new development going beyond the boundaries of traditional international law on the marine environment, whose scope is usually confined to the marine realm, and exceptionally extended to estuaries. Although the term ecosystem approach is not used in this programme area, the emphasis on the ecological interdependence and integrated management of the wide coastal areas implies naturally the necessity of the ecosystem approach. Considering man's imperfect knowledge of the ecological causality among phenomena in the complex networks of marine and coastal ecosystems, it is natural that Agenda 21 lays emphasis on the necessity of preventive and precautionary approaches based on well-informed prior assessment and the systematic observation of the impacts of development projects.[114]

Second, the call for the integrated management of the coastal areas may cause complications in existing international legal systems on the protection of the marine environment. The introduction of the concept of the integrated management of marine and coastal areas may orient the development of international law in two opposite directions. The first possible direction is the infiltration of international norms into the areas under national jurisdiction. It is possible that international society, relying on the concept of the integrated management of marine and coastal areas, reinforces international norms applicable to the areas under the jurisdiction of coastal States, in particular in the issue-area of the prevention of marine pollution from land-based sources. Considering the nature of land-based sources, most of which are dissolved or dispersed in the freshwater before being introduced into the seas, they can be more effectively controlled by regulating human activities on land.[115] Therefore, for a regime for the prevention of marine pollution from land-based sources to be effective, it should be endowed with appropriate means to control pollutants emitted on land. This landward

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[114] See infra. Chapter 4

[115] The title of the 1995 Washington Declaration on Protection of the Marine Environment from *Land-based Activities* signifies that the marine pollution from land-based sources should be controlled through the control of land-based activities. Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) adopted in the 1995 Washington Conference states also; "*Marine pollution is caused by human activities on land*
About 80 per cent of all marine pollution is caused by human activities on land. Activities such as sewage disposal in rivers and the coastal ecosystem; inadequately treated waters from industries; discharges of nutrients of phosphorus and nitrogen used in agriculture, and finally, heavy metals and persistent organic pollutants." GPA, preamble

extension of the geographical applicability of the regimes for the protection of the marine environment is already manifested in some regional agreements, such as the 1996 Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources and Activities,[116] and the 1995 Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean.[117] The second possible direction of the development of international law on the marine environment is the seaward extension of the jurisdiction of coastal States. Coastal States might invoke the concept of integrated management of marine and coastal areas to reinforce their jurisdiction seawards. The concept of integrated management combined with that of ecological interdependence may encourage coastal States to try to strengthen their jurisdiction in the sea areas under their jurisdiction and/or extend their seaward jurisdiction even beyond their exclusive economic zones, as already manifested in the practices of some States.[118]

B. The programme area of marine environmental protection

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[116] The 1996 Mediterranean LBS Protocol is applicable to the hydrologic basin, defined as the entire watershed area within the territories of the parties, draining into the Mediterranean. See Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, amended in Syracuse, on 7 March 1996.

[117] Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean, opened to signature in Barcelona in 1995, is applicable to all the marine waters of the Mediterranean, as well as to the seabed, its subsoil and to the terrestrial coastal areas designated by each party, including wetlands.

[118] For example, Canada's Amendment of 1994 to the Coastal Protection Act has extended Canada's jurisdiction beyond 200 nautical miles for the conservation of fishing resources and caused a dispute between Canada and Spain. (the Fisheries Jurisdiction case, ICJ, General List N° 96). See M.S. Sullivan, The Case in International Law for Canada's Extension of Fisheries Jurisdiction Beyond 200 Miles, 28 Ocean Development and International Law 203 (1997). See also infra. Chapter 3.

Some coastal States of the Southeast Pacific have concluded the 2000 Galapagos Agreement, in which the States Parties extends their jurisdiction to the high seas in relation to the conservation of straddling and highly migratory species (See infra. Chapter 3). The exercise of jurisdiction by the Chilean authority beyond 200 nautical miles on the basis of the Galapagos Agreement has caused the Swordfish case between Chile and EC. See ITLOS, Case concerning the conservation and sustainable exploitation of swordfish stocks in the South-eastern Pacific Ocean, Order 2000/3. See also infra. Chapter 6.

Chile's proclamation of *Presencial* Sea, by its Law No. 19.080 enacted in 1999, is also an attempt to the extension of the national jurisdiction beyond 200 miles. See F.O. Vicuna, The Presencial Sea: Defining Under International Law Coastal States' Specific Interest in High Seas Fisheries and Other Activities, *German Yearbook of International Law*, 35 (1993) pp. 264-92. See also Paul Stanton Kibel, Alone at sea: Chile's *Presencial* Ocean Policy, *Journal of Environmental Law*, vol. 12 (2000), No.1

Following the example of Chile, the Argentine government enacted the Law No 12.968 on Maritime Areas of the Argentine Republic, by which Argentine's national regulations on the conservation of resources shall apply beyond 200 miles in relation to migratory species. See J.A. de Yturriaga, The International Regime of Fisheries: From UNCLOS 1982 to the *Presencial* Sea, Kluwer Law International, 1997, pp. 229-37

In the programme area of marine environmental protection, Agenda 21 draws special attention to the problem of degradation of the marine environment from land-based sources, which are believed to represent 70% of marine pollution. Since there is no binding global instrument to address marine pollution from land-based sources, Agenda 21 invites States to reinforce the Montreal Guidelines for the Protection of the Marine Environment from Land-Based Sources, to enhance existing regional agreements and action plans and to develop new regional agreements. In response to Agenda 21, the 1995 Washington Conference on protection of the marine environment from land-based activities was convened of which the outcome is the Global Programme of Action established under the 1995 Washington Declaration on the protection of the marine environment from land-based activities.[119]

In the field of the prevention, reduction and control of degradation of the marine environment from sea-based activities, there exist already some well-elaborated regimes, such as the regime for the protection of the marine environment from pollution from ships under the MARPOL 1973/78, the regime for the protection of the marine environment from pollution by dumping under the 1972 London Dumping Convention. In these issue-areas, Agenda 21 lays emphasis on the reinforcement of the existing regimes, by calling for the wider ratification and implementation of these conventions, and encouraging IMO activities in this field. With a view to complementing these existing regimes, Agenda 21 invites States to ratify the 1990 Convention on Oil Pollution Preparedness, Response and Cooperation, which addresses, *inter alia*, the development of contingency plans at the national and international level.

Agenda 21 expresses no particular concern over the pollution from seabed activities.

The status of these maritime areas remains ambiguous and arguable. However, the practices of these States manifest their zeal for the extension of their jurisdiction beyond 200 nautical miles.

[119] See above p.17

See also Thomas Mensah, The International Legal Regime for the Protection and Preservation of the Marine Environment from Land-based Sources of Pollution and Alexander Yankov, The Law of the Sea Convention and Agenda 21: Marine Environmental Implications in Alan Boyle and David Freestone (ed.) International Law and Sustainable Development, Oxford University Press, 2000.

In this programme area also, Agenda 21 emphasises the necessity of preventive, precautionary and anticipatory approaches in preventing the degradation of the marine environment. Agenda 21 recommends also economic devices based on the internalisation of environmental costs, such as the polluter pays principle.

C. Programme area of sustainable use and conservation of marine living resources of the high seas

As the main causes of overfishing in the high seas, Agenda 21 identifies unregulated fishing, overcapitalisation, excessive fleet size, vessel reflagging, insufficiently selective gear, unreliable databases and lack of sufficient cooperation between States. The essence of the objectives set out in this programme area is the sustainable utilisation of marine living resources. For this, Agenda 21 underlines the necessity of multi-species management and other approaches that take into account the relationship among species, and the necessity of preserving habitats and other ecologically sensitive areas, the development of underutilised or unutilised populations as potential substitutes for traditional fishing resources. In this way Agenda 21 embraces the idea of ecosystem approach.

Agenda 21 requests States to convene an intergovernmental conference under the auspices of the United Nations, taking into account relevant activities at the subregional, regional and global levels, with a view to establishing a regime on straddling fish stocks and highly migratory fish stocks.[120]

States are also requested to fully implement existing international norms, such as General Assembly Resolution 46/215 on large-scale pelagic drift-net fishing, the International Convention for the Regulation of Whaling, the Inter-American Tropical Tuna Convention and the Agreement on Small Cetaceans in the Baltic and North Sea under the Bonn Convention.

D. The programme area of the sustainable use and conservation of marine living

resources under national jurisdiction

The problems relating to the conservation of marine living resources under national jurisdiction are far more important and complicated than those relating to the conservation of marine living resources of the high seas. The importance of marine living resources under national jurisdiction can be seen in the fact that 95 % of the total world catch is taken from waters under national jurisdiction.[121] Complicated legal problems may arise from the fact that marine living resources are in the areas where national legal systems overlap with international legal rules. The 1982 UNCLOS has vested to coastal States the primary responsibility of conserving marine living resources in the areas under national jurisdiction.

As in the previous programme area, the essence of the objectives in this programme area is the sustainable use of marine living resources, based on the anthropocentric conservationist ideology.

E. The programme area of addressing critical uncertainties for the management of the marine environment and climate change

Agenda 21 draws attention to the interaction between the atmosphere and the hydrosphere in the global ecosystem. The main problems identified so far with regard to the atmospheric system are the depletion of the ozone layer and climate change. An international regime addressing the problem of ozone depletion has been established on the basis of the 1985 Convention for the Protection of the Ozone Layer and the 1987 Protocol on Substances that Deplete the Ozone Layer. The problem of the climate change was one of the main topics of the 1992 UNCED, which resulted in the adoption of the United Nations Convention on Climate Change.

In this programme area, Agenda 21 expresses its concern about the possible effects of climate change and ozone depletion on the marine environment. Humanity is

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[120] The result of this international conference is the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982, relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks adopted in 1995.
[121] Agenda 21, para.17.70

convinced that climate change and ozone depletion have some serious effects on the marine environment, such as the melting of polar glaciers and sea-level changes, but in today's human knowledge, the causal relationship is not clearly established. This is a situation which requires a precautionary approach, and Agenda 21 calls for precautionary measures.[122]

F. The programme area of strengthening international, including regional, cooperation and coordination

To enhance the effectiveness of existing international regimes in the issue-area of the marine environment, Agenda 21 underlines the necessity of an integrated and multisectoral approach at national, regional, subregional and global levels.

The first orientation advocated by Agenda 21 is to improve the institutional efficiency of existing national and international regimes. Many national, regional and global regimes have already been established. Their efficiency can be enhanced by strengthening the coherence among them. For this, Agenda 21 emphasises the role of the United Nations system in general, and the General Assembly in particular in coordinating activities of global institutional networks relating to the marine environment, by pursuing regular intergovernmental review and promoting effective information exchange.

The second orientation advocated by Agenda 21 is the multisectoral approach in addressing environment and development in marine and coastal areas. It is true that most of the exiting national, regional and international regimes deal with specific issues, such as the prevention of certain category of marine pollution, the conservation of certain category of marine living resources, etc. Considering the ecological interdependence and links among issue-areas of marine environment, Agenda 21 underlines the importance of coherence among sectoral regimes.

The programme area of strengthening international, including regional, cooperation and coordination is quite different in character from other programme areas. Instead of having a specific subject matter, this programme area recommends methodologies to realize objectives set out in other programme areas. In each programme

[122] For the precautionary principle, see infra. Chapter 4

area, the necessity of strengthening international and regional cooperation and coordination is already underlined as one of the activities to be pursued by international society. At the cost of redundancy, Agenda 21 re-emphasises the importance of the issues of international and regional cooperation and coordination by adopting them as a new programme area.

G. The programme area of the sustainable development of small islands

Small island States are particularly dependent on marine and coastal resources. The depletion of marine living resources and the degradation of marine ecosystems on which small island States are heavily dependent have already been perceived as serious threats to their populations. Recently, an alarming new phenomenon has been identified; a sea-level rise caused by global warming, which may threaten the very existence of some small islands.

Considering this particular vulnerability of small island developing States to the change of marine environment, as well as their geographic disadvantage, Agenda 21 pays special attention to the situation of these States. Agenda 21 invites international society to adopt and implement plans and programmes to support the sustainable development of small island developing States, and to adopt measures which will enable them to cope effectively, creatively and sustainably with environmental change and to mitigate impacts and reduce the threats posed to their marine and coastal resources.

3.2 Agenda 21 and the 1982 UNCLOS

Agenda 21 is an international action programme for sustainable development, of which Chapter 17 provides a comprehensive international action programme for the protection of the marine environment. The 1982 UNCLOS is an international treaty establishing international legal norms applicable to the whole issue-area of the law of the sea, of which Part XII and other provisions provide the international legal framework for the protection of the marine environment. Therefore, Agenda 21 and the 1982 UNCLOS have an overlapping issue-area, *i.e.* the protection of the marine environment. Both of

them deal with all sources of pollution in all oceans and seas of the world. There must be some close relationship between them. As Alexander Yankov asserts, the two instruments are "quite distinct in their legal nature and scope, and yet are complementary to one another…The interface between UNCLOS and the marine part of Agenda 21 has been an evolving process of complementarity between a legal framework and a programme of action, with important environmental implications".[123]

Agenda 21 and the 1982 UNCLOS are distinct in their legal nature. The former is a hortatory instrument, while the latter is legally binding convention. They are distinct in their scope. The former is an international agenda covering the entire issue-area of sustainable development, while the latter provides a legal framework covering the entire issue-area of the law of the sea.

Yet the two instruments are complementary in may aspects in their overlapping issue-area. To be complementary to each other, they should share the same philosophical foundation and guiding principles. The prevailing ethical foundation embraced by Agenda 21 and the 1982 UNCLOS is the anthropocentric conservationism. The idea of the balance between environment and development already implies the human-centred conservationist ideology.[124] In Agenda 21, the marine environment is perceived as a 'positive asset that presents opportunities for sustainable development',[125] and the value of the coastal area is considered as an object, which 'contains diverse and positive habitats important for human settlement, development and local subsistence'.[126] And States are invited to 'develop and increase the potential of marine living resources to meet human nutritional needs, as well as social, economic and development goals',[127] to 'increase the availability of marine living resources as human food',[128] etc. Marine and coastal resources have instrumental value in terms of their utility for human beings. This philosophical foundation is in line with that embedded in the 1982 UNCLOS.[129]

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[123] Alexander Yankov, The Law of the Sea Convention and Agenda 21: Marine Environmental Implications, in Alan Boyle and David Freestone (ed.) International Law and Sustainable Development, Oxford University Press, 2000, p.271
[124] See infra. Chapter 4
[125] Agenda 21, para.17.1
[126] Agenda 21, para.17.3
[127] Agenda 21, para.17.46
[128] Agenda 21, para.17.56
[129] See above the concept of marine pollution and infra. Chapter 4

Agenda 21 and the 1982 UNCLOS are also common in their guiding principles. Both of them are guided by, or in harmony with, the concept of sustainable development, the integrated principle, the ecosystem approach and the precautionary principle.[130]

On the basis of these common philosophical foundations and guiding principles, Agenda 21 and the 1982 UNCLOS exercise mutual influence. Agenda 21 provides a comprehensive set of objectives and action plans for the protection of the marine environment that international society is determined to pursue. As declared in Agenda 21 itself, the 1982 UNCLOS provides an international legal framework for the protection of the marine environment on the basis of which international society should pursue these objectives and action plans.[131]

Although Agenda 21 has limits in orienting State behaviour as a kind of 'soft law' instrument, it has a certain degree of normative value as a crystallization of the consensual political will of international society. It may orient the future development of international law by providing good evidence of *opinio juris*, or constituting authoritative guidance on the interpretation or application of a treaty, or serving as agreed standards for the implementation of more general treaty provisions or rules of customary law.[132]Some principles embraced in Agenda 21, such as sustainable development, ecosystem approach, and precautionary principle may evolve into binding legal norms. At present, the legal status of these principles remains ambiguous, but it is certain that they are in the process of evolution toward the status of legal rules.[133]

Even in this stage where these principles remain devoid of binding force, they may serve as guidelines for subsequent regulatory treaties. For example, after the 1992 UNCED, it is difficult to imagine that any international legal instruments in the issue-area of the prevention of marine pollution and the conservation of marine living resources be adopted in conflict with the concept of sustainable development. It is not rare that non-binding hortatory international instruments have guided the formation of subsequent

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[130] See infra. Chapter 4

[131] Agenda 21, Chapter 17, para. 17.1 "...International law, as reflected in the provisions of the United Nations Convention on the Law of the Sea..., sets forth rights and obligations of States and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources.

[132] See Alan Boyle, 48 ICLQ (1999), 901. See also Patricia Birnie & Alan Boyle, International Law & the Environment, Second edition, Oxford University Press, 2002, pp.24-27

[133] See infra. Chapter 4

binding instruments. For example, the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, adopted at Basel in 1989, was guided by the principles embedded in the Declaration of the United Nations Conference on the Human Environment (UNCHE) of 1972, the Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes adopted by the Governing Council of UNEP in 1987, the Recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods formulated in 1957 and updated biennially and the World Charter for Nature.[134] Similarly, the Convention for the Protection of the Ozone Layer was guided by the principles of the 1972 UNCHE.[135]

In such a way, Agenda 21 may exercise a certain influence upon the formation of binding or non-binding instruments for the protection of the marine environment. For example, the main principles embodied in Agenda 21 have been embraced by some global agreements such as the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (hereinafter referred to as "the 1995 Agreement") and the 2001 Stockholm Convention on Persistent Organic Pollutants (POPs).[136] Agenda 21 has also given an impetus to the development of the regime for the protection of the marine environment from land-based sources. The 1982 UNCLOS is rather poor in providing concrete norms for preventing the sea from pollution caused by land-based sources.[137] In contrast, Agenda 21 lays much emphasis on the problem of marine pollution from land-based sources. As a result, the Washington Declaration on Protection of the Marine Environment from Land-based Activities has been adopted in 1995.[138] Although the 1995

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[134] See the Preamble of the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
See also Katharina Kummer, International Management of Hazardous Wastes: The Basel Convention and Related Legal Rules, Oxford University Press, 1999

[135] See the preamble of the Convention for the Protection of the Ozone Layer.
See also Thomas Gehring, Dynamic International Regimes, Peter Lang GmbH, 1994

[136] The 1995 Agreement embraces the principle of sustainable development, the precautionary approach, the ecosystem approach. See infra. Chapter 3. The POPs, referring to the Rio Declaration and Agenda 21, embraces the precautionary approach and the polluter pays principle.

[137] Without providing any concrete norms, the 1982 UNCLOS calls for States to adopt and enforce national laws and regulations and international rules and practices. See Articles 207, 213

[138] Agenda 21, Chapter 17, para. 17.26 called for the UNEP Governing Council to convene an intergovernmental meeting on protection of the marine environment from land-based activities.

Washington Declaration itself is not a legally binding instrument, it may evolve into a basis for an international regime for the protection of the marine environment.[139] The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities established under the 1995 Washington Declaration may function as a regime.

Agenda 21 is reflected also in regional regimes. The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, as amended in 1995, reflects and applies to a regional scale the main ideas arising from the 1992 UNCED: the precautionary principle; the integrated management of the coastal zones; the resort to best available techniques and best environmental practices and the promotion of environmentally sound technology, including clean production technologies.[140]The Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, as amended in 1996, reflects the principle of integrated management embodied in Agenda by extending its area of application to the hydrologic basin, which is defined as the entire watershed area within the territories of the parties, draining into the Mediterranean.[141] The 1995 Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean is applicable to all the marine waters of the Mediterranean, irrespective of their condition, as well as to the seabed, its subsoil and to the terrestrial coastal areas designated by each party, including wetlands.[142]This approach reflects the principle of integrated management advocated by Agenda 21.

Agenda 21 is also echoed in the Caribbean LBS Protocol, which applies the principle of integrated management.[143]

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[139] As the definition of the regime indicates a regime can be built on non-binding instruments or even on a set of implicit norms. See infra. Chapter 2

[140] See The Mediterranean and the Law of the Sea at the Dawn of the 21st Century, *Actes du colloque de l'Association Internationale du Droit de la* Mer (Naples, 22 et 23 Mars 2001), *Sous la Direction de Giuseppe Cataldi, Bruyant Bruxelles* 2002, p. 269 The Mediterranean Commission on Sustainable Development established within the framework of the Mediterranean Action Plan is also a reflection of the spirit of the 1992 UNCED.

[141] Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, amended in Syracuse, on 7 March 1996.

[142] See The Mediterranean and the Law of the Sea at the Dawn of the 21st Century, op. cit.

[143] See Protocol concerning Pollution from Land-Based Sources and Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region adopted at Aruba on 6 October 1999, adopted by the Parties to the Convention for the Protection and Development of the

In addition, Agenda 21 may contribute to the evolution of the regime under the 1982 UNCLOS by influencing the interpretation of the latter. The 1992 UNCED has created a new context to be taken into account in the interpretation of the 1982 UNCLOS and other related instruments.[144] For example, the concept of sustainable development, as embodied in Agenda 21 and other UNCED instruments, is so widely embraced that instruments relating to the protection of the marine environment should be interpreted in the light of this concept.[145] Agenda 21 purports also to enlarge the applicability of the 1982 UNCLOS toward the coastal areas, by declaring it "international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources."[146]

If the 1982 UNCLOS provides the legal framework upon which the objectives set out in Agenda 21 should be pursued, a question may arise; is the regime under the 1982 UNCLOS adequate for the achievement of the objectives of Agenda 21? To answer this question, it may be worthwhile to examine the regime under the 1982 UNCLOS and related regimes in the light of regime theory.

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marine Environment of the Wider Caribbean Region done at Cartagena de Indias on 24 March 1983. The Protocol, referring to the principles of the Rio Declaration and Chapter 17 of Agenda 21 as its guiding principles, is intended to regulate the emission of land-based pollutants on the coastal areas by limiting the source categories, activities and associated pollutants of concern listed in Annexes.

[144] The new context created by the 1992 UNCED is a situation which may influence the interpretation of treaties, as foreseen by the 1969 Vienna Convention on the law of Treaties, which stipulates in Article 31, para.3; "There shall be taken into account, together with the context: (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation; (c) any relevant rules of international law applicable in the relations between the parties." For the concept of evolutionary interpretation, see infra. Chapter 3

[145] The 1969 Vienna Convention on the law of Treaties Article 31, para.3 stipulates;
"There shall be taken into account, together with the context: (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation; (c) any relevant rules of international law applicable in the relations between the parties.

[146] See infra. Chapter 3

Chapter 2
Regime Theory

1. Theoretical background of regime theories

Why and how do self-interested sovereign States cooperate in their interactions in the anarchical international society? This is one of the fundamental questions to which most of international relations theories purport to offer an answer. Among these, regime theories focus their attention on the fact that sovereign States do cooperate among themselves in many fields by instituting self-governing mechanisms based on normative rules. The key concepts that constitute the basic assumptions underlying regime theories with regard to the nature of main actors and their environment in modern international society are sovereignty, interdependence and international anarchy.

1.1 **Sovereignty**

Sovereignty is one of the basic concepts that characterize State actors in modern international society. It has its internal and external aspects, as Hedley Bull distinguishes "internal sovereignty, which means supremacy over all other authorities within that territory and population", and "external sovereignty, by which is meant not supremacy but independence of outside authorities".[1] In its internal aspect, sovereignty means that "a State's domestic policy falls within its exclusive jurisdiction, provided of course that it does not violate any obligation of international law."[2] In other words, it implies nearly absolute control as Henkin states; "In the modern inter-State system, too, the State has complete authority in its territory and over persons, activities and things within it (except as it consents to waive some of that authority)."[3] External manifestation of a State's sovereignty in its relation with other States is its independence. For Grotius, a State is

1 Hedley Bull, The Anarchical Society, Second edition, MacMillan, 1995, p. 8
2 ICJ, Military and Paramilitary Activities in and against Nicaragua, Merits, *ICJ Reports* 1986, pp.131
3 Louis Henkin, International Law: Politics, Values and Functions, General Course on Public International Law, *Recueil des Cours*, The Hague Academy of International Law, 1989, IV Tome 216, p. 28

sovereign when its acts are not subject to the control of others.[4] Similarly, Max Huber states; "independence in regard to a portion of the globe is the right to exercise therein, to the exclusion of any other State, the functions of a State."[5] Hans Morgenthau perceives the concept of sovereignty as "a consequence of the transformation of the feudal system into the territorial State which had been consummated in the sixteenth century".[6]

The concept of equality of States is a corollary of the concept of sovereignty.[7] If States are truly independent, no one of them will be subject to any other.[8] Vattel deduces the principle of equality of States from the concept of natural equality, relying on the analogy between natural persons and States.[9] Equality of States means legal equality. In his doctrine of absolute equality of States, Vattel emphasises legal equality in spite of inequality of States in their power or size; "Strength or weakness, in this case, counts for nothing. A dwarf is as much a man as a giant is; a small Republic is no less a sovereign State than the most powerful Kingdom."[10] This incongruity between legal equality and political inequality is one of the characteristics of today's State system. The principle of legal equality of States is consolidated in modern international law, by being enshrined in international legal texts, in particular in the Charter of the United Nations, and manifested in international practices. Regarding the content of equality of States, however, many questions arise. 'Equality before the law' is firmly anchored in international society. However, 'equality of rights' as the material content of international law encounters not

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[4] Hugo Grotius, *De jure belli ac pacis*, 1645, translated into French by P. Pradier-Fodéré, Pressses Universitaires de France, 1999, p. 98 « Voilà donc en quoi consiste la puissance civile…On la dit *souveraine*, lorsque ses actes ne sont pas dépendants de la disposition étrangère… »

[5] Max Huber, Arbitral Award rendered in conformity with the Special Agreement concluded on January 23rd, 1925 between the United States of America and the Netherlands relating to the Arbitration of differences respecting Sovereignty over the Island of Palmas (or Miangas) April 4th, 1928, Part II.

[6] See Hans Morgenthau, Politics among Nations, Brief edition, revised by Kenneth W. Thompson, McGraw-Hill, Inc. 1993, p.253

[7] See P. H. Kooijmans, The Doctrine of the Equality of States, A.W. Sythoff-Leyden, 1964, p.p.126-151 "the equality of States as a consequence of their sovereignty".
See also Paul Reuter, Le développement de l'ordre juridique internationale, Economica, 1995, p. 381
Pau Reuter states ; « la théorie de la souveraineté entraîne un corollaire : l'égalité des Etats. »

[8] For John Westlike, "the equality of sovereign states is merely their independence under a different name". John Westlike, International Law, Cambridge, 1904, p. 308

[9] Emériс de Vattel, The Law of Nations or the Principles of Natural Law, Translation of the edition of 1758 by Charles G. Fenwick, The Carnegie Institution of Washington, 1916, p. 7
"Since men are by nature equal, and their individual rights and obligations the same, as coming equally from nature, Nations, which are composed of men and may be regarded as so many free persons living together in a state of nature, are by nature equal and hold from nature the same obligations and the same rights."

only counterexamples in reality but also many questions in theory. Even in the United Nations system, political inequality is translated into legal inequality in some aspects. For example, while embracing the principle of sovereign equality, the Charter of the United Nations institutes a predominant position of the permanent members of the Security Council.[11] Some, e.g. P. J. Baker, maintain that equality before the law is the only definition that will bear examination.[12] For Suganami also, equality of States means only equality before the law.[13] In spite of divergent interpretations of its concept, the principle of sovereign equality is consolidated as a fundamental pillar supporting the contemporary international legal order.

1.2 **Interdependence**

Interdependence characterizes the society in which States act and interact. Conceptually the concept of sovereignty generates that of independence. However, reality entangles independent States. Grotius deduces the freedom of the seas form the natural interdependence of States, by arguing that the freedom of the seas stems from the axiomatic first principle of the freedom of every nation to travel to every other nation, and to trade with it, which in turn is founded on the concept of economic interdependence among nations.[14] Vattel, while fervently defending the cause of the independence of

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[10] Ibid p. 7

[11] Considering the predominance of the Security Council in the United Nations and the predominance of the great powers in the Security Council, Hans Morgenthau regards the United Nations as a "Government by Superpowers". See Hans J. Morgenthau, op.cit. p. 319

[12] P. J. Baker, The Doctrine of Legal Equality of States, *BYIL*, vol. 4 (1923-1924), pp.1-20

[13] For Hidemi Suganami, equality before the law means that states are equally subjected to, bound by, or obligated to act in accordance with international law, but does not mean that states ought to possess identical rights and duties in international law. When states are said to have an equal right what is meant is that there is nothing in international arrangements of international society precluding any class of sovereign states from acquiring legal rights, or from maintaining legal freedoms, which another class of sovereign states are permitted. See Hidemi Suganami, Grotius and International Equality, in Hedley Bull, Benedict Kingsbury and Adam Roberts (ed.), Hugo Grotius and International Relations, Clarendon Press, 1990, pp. 221-240

[14] In *Mare Liberum,* Grotius argues; "God Himself says this speaking through the voice of nature; and inasmuch as it is not His will to have Nature supply every place with all the necessaries of life, He ordains that some nations excel in one art and others in another. Why is this His will, except it be that He wished human friendships to be engendered by mutual needs and resources, lest individuals deeming themselves entirely sufficient unto themselves should for that very reason be rendered unsociable". Hugo Grotius, *The Freedom of the Seas*, translated by Ralph Van Deman Magoffin, Oxford University Press, American Branch, 1916, p. 7

sovereign States, recognizes the reality of interdependence among nations and derives therefrom the duty of aiding others as the first general law.[15] For John Austin, it is from the natural interrelatedness of sovereigns that international law originates, when he asserts; "society formed by the intercourse of independent political societies, is the province of international law...Speaking with greater precision, international law, or the law obtaining between nations, regards the conduct of sovereigns considered as related to one another."[16]

In general, "interdependence arises when the actions of individual members of a social system impact (whether materially or perceptually) the welfare of other members of the system".[17] Interdependence in world politics refers to "situations characterized by reciprocal effects among countries or among actors in different countries."[18] In game theoretical terms, "the parties are interdependent in the sense that the outcome depends on the opponent's choice of strategy as well as on one's own."[19] As such, today's complex international relations are woven into an 'interdependence structure'.[20] Interdependence among States is a common feature in every field. In particular, environment is a field where interdependence is the root of all issues. Environmental interdependence results from ecological interdependence as well as from the nature of the environment as an international public good.[21] The global environment is composed of global commons, such as the global climate, ozone layer, high seas, and mixed goods,

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[15] Emëric de Vattel contends that "the first general law, which is to be found in the very end of the society of Nations, is that each Nation should contribute as far as it can to the happiness and advancement of other Nations." Emëric de Vattel, The Law of Nations or the Principles of Natural Law, translated by Charles G. Fenwick, Carnegie Institution of Washington, 1916, p. 6

[16] John Austin, The Province of Jurisprudence Determined, Lecture VI, Edited by Wilfrid E. Rumble, Cambridge University Press, 1995, p. 171
According to Austin's command theory of law, international law is not a law properly called, but only a law by analogy, because no one can command sovereigns.

[17] Oran R. Young, The effectiveness of international institutions: Hard cases and critical variables, in James N. Rosenau and Ernest-Otto Czempiel (ed.) Governance without Government, Cambridge University Press, 1992, p. 188

[18] Robert O. Keohane & Joseph S. Nye, Power and Interdependence, Second edition, Harper Collins Publishers, 1989, p. 8

[19] Glenn H. Snyder and Paul Diesing, Conflict among Nations, Princeton University Press, 1977, p. 37

[20] Interdependence structure means situations in which personal outcomes are partially or completely determined by the actions of one or more others. See Paul A. M. Van Lange and Carsten K. W. De Dreu, Social Interaction: Cooperation and Competition, in Miles Hewstone and Wolfgang Stroebe (ed.), Social Psychology, Blackwell Publishers, Third edition, 2001, p. 343

[21] Public good is characterized by non-rivalry and non-excludability. See Michael Parkin, Economics, second edition, Addison-Wesley Publishing Company, 1994, p. 520.

which have the characteristics of private good as well as public good, like international watercourses. [22] Actions of States in relation to such public goods and mixed goods entail problems of externalities and free-riding, which are common to all environmental issues.

1.3 Anarchy

Anarchy is a characteristic of the nature of contemporary international society. The concept of anarchy is closely related to that of sovereignty. In its simplest meaning, anarchy refers to the absence of central authority.[23]Among independent and equal States, no one can exercise authority over others. Anarchy in this sense does not automatically mean chaos. Today's international anarchy is different from the Hobbesian state of nature. In contemporary anarchical society, order does exist in some way. Different institutionalists show different modalities of cooperation under anarchy through institutional mechanisms, on the assumption that "in anarchy individuals pursue their own self-interest without the aid of a central authority to force them to cooperate with each other".[24] Even realists, who are convinced that international anarchy fosters competition and conflict among States, perceive the world in "anarchic order", [25] not in chaos. However, it is undeniable that anarchy does not favour the creation of order and cooperation among States. For realists, in particular, anarchy engenders many negative consequences; "states recognize that, in anarchy, there is no overarching authority to prevent others from using violence, or the threat of violence, to destroy or enslave them",[26] and "wars can occur because there is nothing to prevent them".[27] In international

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[22] For the navigational purpose, a transboundary river may be regarded as a public good until it is congested. For the purpose of irrigation or drinking water supply, it may be treated as a private good, being rival and excludable.

[23] Institutionalists, such as Robert Axelrod and Robert O. Keohane, define anarchy as "a lack of common government in world politics". See Axelrod and Keohane, Achieving cooperation under anarchy, in David A. Baldwin, (ed.), Neorealism and Neoliberalism, Columbia University Press 1993, p. 85
For realists also, international anarchy means the absence of a common interstate government. See Joseph M. Grieco, Anarchy and the Limits of Cooperation, *International Organization*, 42, 1988, p.485

[24] Robert Axelrod, The Evolution of Co-operation, Penguin Books, 1984, p. 6

[25] See Kenneth N. Waltz, Anarchic Orders and Balances of Power, in Robert O. Keohane (ed.), Neorealism and its Critics, Columbia University Press, 1986, pp.98-130

[26] Joseph M. Grieco, Anarchy and the Limits of Cooperation, *IO*, 1988, p. 497

[27] Kenneth N. Waltz, *op.cit.* p. 232

relations theories the term anarchy is used to mean the decentralized character of international society.

1.4 Conflict and cooperation under anarchy

In an anarchical society where sovereign States are independent in law but interdependent in fact, conflicts are inevitable, but cooperation is not impossible.

The most fundamental cause of conflicts among States is the State egoism. It is almost axiomatically assumed that States pursue the maximization of their interest. However, with regard to the concept of interest, there is a sharp divergence between institutionalists and realists. Institutionalists assume that States focus primarily on their individual absolute gains and are indifferent to the gains of others.[28] Therefore, cooperation is possible insofar as there is some possibility of joint gains. On the contrary, realists assert that the fundamental goal of States in any relationship is to prevent others from achieving advances in their relative capabilities, and they are compelled to ask "Who will gain more?" rather than "Will both of us gain?"[29] If national interest is defined in terms of power, as held by Hans Morgenthau, States are motivated by relative gains since power is a relative gain by nature.[30] If all States are preoccupied with relative gains, cooperation among them becomes difficult, because each State, in pursuit of relative gains, desires to gain more than other States. This can be more clearly illustrated in game theoretical terms; between player A and player B, the objective of A is $Ga > Gb$, and that of B is $Ga < Gb$ (Ga: gain for A, Gb: gain for B). But it is mathematically impossible to realize $Ga > Gb$ and $Ga < Gb$ simultaneously. If the players are cooperative enough, A may be satisfied with $Ga \geq Gb$, and B with $Ga \leq Gb$. Then the only possible solution is $Ga = Gb$. This is the point where balance of interest or balance of power can be achieved.

The independence of States complicates problems of conflict and cooperation. As Dante argues; "There is always the possibility of conflict between two rulers where

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[28] Robert Powell, Absolute and Relative gains in International Relations Theory, in David A. Baldwin, (ed.) Neorealism and Neoliberalism, op.cit, p. 209

[29] Joseph M. Grieco, Anarchy and Limits of Cooperation, in David A. Baldwin, (ed.) Neorealism and Neoliberalism, op.cit. p.127

[30] Schwarzenberger defines power as "capacity to impose one's will on others by reliance on effective sanctions in case of non-compliance." Georg Schwarzenberger, Power Politics, 3rd edition, 1964, Stevens, p.

one is not subject to the other's control",[31] if States behave independently, it is difficult to expect an automatic harmony in their actions. Harmony can be achieved through coordination or cooperation, which require a certain degree of self-restraint, which is rarely compatible with the concept of independence. Different models of game theory demonstrate how it is difficult for egoists to arrive at the optimal outcome, when making decisions independently, however rational they might be.[32] The tragedy of the commons is a typical parable that shows how rational actors are destined to tragic outcomes resulting from independent decisions.

Equality of States is no longer a favourable condition for the creation of order and cooperation. In a realist perspective in particular, equality is a source of struggle among men as well as among States. For Hobbes, "Nature hath made men so equal, in the faculties of body, and mind...From this equality of ability, ariseth equality of hope in the attaining of our Ends. And therefore if any two men desire the same thing, which nevertheless they cannot both enjoy, they become enemies".[33] In the same line, Kenneth Waltz regards equality of States as a cause of strife, when he asserts; "In anarchic realms, like units coact. In hierarchic realms, unlike units interact. In an anarchic realm, the units are functionally similar and tend to remain so. Like units work to maintain a measure of independence and may even strive for autarchy. In a hierarchic realm, the units are differentiated, and they tend to increase the extent of their specialization".[34] Among equals, cooperation can be realized only through agreement or mutual consent.

As a means of realizing order and cooperation among States, realists rely on the concept of power. In line with Dante's idea of *Monarchia*[35] and Hobbes's *Leviathan*, some propose the theory of hegemonic stability, which claims that a benevolent despot in

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[31] Dante Alighieri, *Monarchia*, 1313, translated into English, Monarchy, by Prue Shaw, Cambridge University Press, 1996, p. 14

[32] See Arthur A. Stein, Coordination and collaboration: regimes in an anarchical world, in Stephen D. Krasner, (ed.) International Regimes, Cornell University Press, 1995, pp. 115-140

[33] Thomas Hobbes, *Leviathan,* Cambridge University Press, 1996, pp. 86-87
The concept of equality presented by Hobbes is the equality in terms of real power. For Vattel, however, men and nations are equal in their rights and obligations, and strength or weakness, in this case, counts for nothing. Vattel, The Law of Nations, op.cit., p. 7

[34] Kenneth N. Waltz, Anarchic Orders and Balance of Power, op.cit, pp.100-101

[35] Dante, *Monarchia*, op. cit. p.15-17 "Therefore, the world is ordered in the best possible way when justice is at its strongest in it...justice is at its strongest in the world when it resides in a subject who has in the highest degree possible the will and the power to act; only the monarch is such a subject."

international politics leads to desirable outcomes for all states.[36] Other realists, starting from the concept of interest defined in terms of power, envision international peace and cooperation by means of limitations of national power, such as balance of power, international morality and public world opinion, international law.[37] Still other realists advance more radical and pessimistic views of power politics, in which order can be established only by the interplay of forces; "Because each state is the final judge of its own cause, any state may at any time use force to implement its policies. Because any state may at any time use force, all states must constantly be ready either to counter force with force or to pay the cost of weakness."[38]

In contrast, institutionalists pay more attention to the possibility of international order maintained by decentralized cooperation among equal States fostered by self-governing institutions. Theorists of Grotian tradition envisage an international society in which all States should be bound by rules and institutions as well as by morality and law. They believe in the possibility that States cooperate by calculation of their self-interests, or by patterned behaviour guided by rules they form for themselves. Recently, since the 1970s, a school of international relations theorists has been developing theories focused on a particular type of institutions, i.e. regimes, which function on the basis of self-governing normative injunctions. Since these regime theories purport to explain international cooperation achieved by patterned behaviour based on normative rules, they are particularly appropriate for application to international environmental issues, in dealing with which States are motivated to achieve joint gains through cooperation, instead of pursuing relative gains through power struggle.

2. Concept of Regimes

Different definitions of regimes are proposed by different regime theorists. It is John Ruggie who is the first to propose a definition of regime as "a set of mutual expectations, rules and regulations, plans, organizational energies and financial commitments, which

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[36] For Robert Gilpin, "the *Pax Britanica* and *Pax Americana*, like the *Pax Romana*, ensured an international system of relative peace and security". Gilpin, War and Change in World Politics, Cambridge University Press, 1981, p. 144.

[37] Hans Morgenthau, Politics among Nations, op.cit.

have been accepted by a group of states".[39] Oran R. Young defines regimes as "social institutions governing the actions of those interested in specifiable activities (or meaningful sets of activities). As such, they are recognized patterns of practice around which expectations converge".[40] For Robert Keohane and Joseph Nye regimes are "sets of governing arrangements that include networks of rules, norms, and procedures that regularize behaviour and control its effects.[41] For Ernst Haas regimes are "norms, rules, and procedures agreed to in order to regulate an issue-area".[42] Friedrich Kratochwil and John Gerard Ruggie perceive regimes as "governing arrangements constructed by states to coordinate their expectations and organize aspects of international behaviour in various issue-areas".[43] The most widely accepted definition is proposed by Stephen D. Krasner;

> "Regimes can be defined as sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations".[44]

Krasner explains the meaning of four components of his definition: "Principles are beliefs of fact, causation, and rectitude. Norms are standards of behaviour defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice".[45]

If we analyse Krasner's definition, we find six elements: (1) principles, (2) norms, (3) rules, (4) decision-making procedures, (5) convergent expectations of actors, and (6) given area of international relations.

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[38] Kenneth N. Waltz, Man the State and War, Columbia University Press, 1959, p. 160

[39] John Ruggie, International responses to technology: concepts and trends, *IO*, vol.29, summer 1975, p. 570

[40] Oran R. Young, "International Regimes: Problems of Concept Formation", *World Politics*, April 1980, p. 332. Young gives similar definition in *Regime dynamics: the rise and fall of international regimes*, in Krasner (ed.), International regimes, Cornell University Press, 1983, p. 93

[41] Robert O. Keohane and Joseph S. Nye, op.cit., p.19

[42] Ernst B. Haas, Why collaborate? Issue-Linkage and International Regimes, *World Politics*, April 1980, p.358

[43] Friedrich Kratochwil and John Gerard Ruggie, International organization: a state of the art on the art of the state, *IO*, 1986, p. 759

[44] Stephen D. Krasner, Structural Causes and Regime Consequences: Regimes as Intervening Variables, in Krasner (ed.) op.cit. p.2 This definition is recognized as the collective definition among several regime theorists.

[45] Stephen D. Krasner, op.cit, p.2

2.1 Principles

'Beliefs of fact, causation, and rectitude', shared by the members of a given group, mean the perception of reality and the value orientation which prevail in that group. These are underlying belief and value systems espoused by the members of a group. A belief system combined with a value system lays the foundation of rational behaviour of the members of a given group in their interaction; the former provides cognitive rationality, the latter axiological rationality.[46]

A set of specific beliefs about facts and causal relations shared by members, i.e. common assumptions about "what is" in a given issue-area, constitutes a belief system. As Talcott Parsons emphasizes the integrative function of common beliefs in systems of interaction,[47] since without shared beliefs, expectations of actors cannot converge. For example, by recognizing that "human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind",[48] the Parties to the Framework Convention on Climate Change express an element of their common belief system. Shared beliefs may be scientifically valid or not. To the extent that such beliefs are widely accepted with little or no questioning, they can influence many aspects of social life. Shared beliefs are thus a matter of common perception rather than a question of truth. For example, by "noting that there are many uncertainties in predictions of climate change, particularly with regard to the timing, magnitude and regional patterns thereof",[49] the Parties to the Climate Change Convention admit that their common beliefs are based on the common perception rather than on the scientific truth.

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[46] For the concept of rationality, see infra. Chapter 5.

[47] According to Parsons, belief systems involve an independent orientation to a "reality" which has properties independent of the actor who attempts to understand it cognitively. Patterns of value-orientation, on the other hand, formulate the directions of choice in the dilemmas of action. See Talcott Parsons, The Social System, Collier MacMillan Publishers, Paperback Edition, 1964, pp.326-383

[48] 1992 Framework Convention on Climate Change, Preamble

[49] Idem.

A set of values shared by the members of a group, i.e. judgments about "what is desirable or undesirable" or about "what is right or wrong", constitutes a value system which provides the axiological framework for a regime. Without a common value orientation, actors cannot pursue a common goal. For example, by "acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions",[50] the Parties to the Climate Change Convention define a common value orientation. The principle of common but differentiated responsibilities thus embodied is formed by the combination of a particular belief system and a particular value system embraced by the contemporary international society: the former is based on the common conviction on the historic background concerning the different responsibilities for the global environmental degradation and the present circumstances characterized by marked inequality between developed and developing States; the latter is orientated toward more just and equitable international order. In some cases, principles, though abstract in their expression, are explicitly articulated, commonly in the preamble of international instruments. In other cases, principles are implicitly embedded throughout a regime. For example, "in the nineteenth century, principles concerning the rectitude of the balance of power among major actors were reflected in norms legitimizing and regulating colonial expansion, and in those regulating major-power warfare".[51] This implicit diffuseness of principles may be the reason why many regime theorists omit this element in their definition of regimes. Because of their abstract character, principles may not be suitable to serve as directly operational guidelines. They form a general orientation of actions, commonly under the heading of such and such 'principle' or 'approach'. For a principle to provide concrete guidelines for the behaviour of the regime members, more concrete injunctions should be deduced therefrom, in the form of norms or rules.

2.2 Norms

[50] Idem.
[51] Donald J. Puchala and Raymond F. Hopkins, International Regimes: lessons from inductive analysis, in

Norms, which refer to 'standards of behaviour defined in terms of rights and obligations', are shared standards regarding "legitimate or illegitimate" social actions. Compared with principles, norms are more concrete injunctions. In some cases, norms are directly derived from principles. For example, in the Climate Change Convention, two categories of norms are derived from the principle of common but differentiated responsibilities; 1) norms for all Parties from the principle of common responsibility, 2) norms for developed country Parties from the principle of differentiated responsibilities. The commitment of all Parties to "take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions..."[52] is one of the norms derived from the concept of common responsibilities. The commitment of the developed country Parties to "take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly to developing country Parties, to enable them to implement the provisions of the Convention"[53] is one of the norms derived from the concept of the differentiated responsibilities. However, in many other cases, it is difficult to trace how such and such norm is deduced from such and such principle. Some norms are formulated from principles which are implicitly embedded in the regime. For example, the principle of the common but differentiated responsibilities is not explicitly articulated in the 1982 UNCLOS, but the concept of the differentiated responsibilities is reflected in the norm of preferential treatment for developing States embodied in some articles, such as Article 203, stipulating "Developing States shall, for the purpose of prevention, reduction, and control of pollution of the marine environment or minimization of its effects, be granted preference by international organization in : (a) the allocation of appropriate funds and technical assistance; and (b) the utilization of their specialized services".[54]

When explained as standards of behaviour defined in terms of "rights and obligations", norms may give some legal connotation. But they are not necessarily of

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Krasner (ed.), op.cit., p.64

[52] Framework Convention on Climate Change, Article 4, paragraph 1(f)

[53] Framework Convention on Climate Change, Article 4, paragraph 5.

[54] See infra. Chapter 4.

legal character. They may be moral and ethical injunctions. For example, the above-mentioned commitments of all Parties, and those of developed country Parties are moral or political commitments, without giving rise to a legal obligation. Sometimes, the term "norms" represents all of the regime injunctions, and many regime theorists perceive regimes as normative institutions designed to promote the norm-guided behaviour of states. Friedrich Kratochwil and John Gerard Ruggie, for example, emphasize that what distinguishes international regimes from other international phenomena is a specifically normative element.[55]

2.3 Rules

Rules, as "specific prescriptions or proscriptions for action", constitute action-oriented technical injunctions designed to induce the actors to behave in line with principles and norms of a given regime. Whereas principles and norms, as defined in regime theory, are basically value-oriented injunctions, rules are not necessarily so. Though derived from, or based on, principles or norms, rules themselves may or may not based on a value judgment. Many operational rules established as means of coordination and regulation of collective actions prescribe or proscribe the behaviour of actors without implying value judgment. Such operational rules are followed for expedient rather than moral reasons. For example, the obligations of the States in respect of 'Monitoring and Environmental Assessment' for the protection and preservation of the marine environment set forth in Articles 204-206 of the 1982 UNCLOS are operational rules, which have no moral character. Whether based on a value judgment or not, regime rules entail concrete social constraints on the behaviour of actors, in the form of prescription or proscription. Such prescriptions and proscriptions are instrumental injunctions in that they purport to realize the objectives set out in higher injunctions such as principles or norms. Most rules and standards established for the environmental protection are free of a value judgment. Their raison d'être is to improve the quality of a particular element of environment. For example, the 1972 London Dumping Convention prohibits the dumping of wastes or

[55] Friedrich Kratochwil and John Gerard Ruggie, International Organization: a state of the art on an art of the state, *IO.*, 1986, p. 767

other matter listed in Annex I, but allows the dumping of wastes or other matter listed in Annex II by a prior special permit, and allows the dumping of all other wastes or matter by a prior general permit.[56] There is no value judgment in the standards applied to the classification of wastes and matter.

The concept of rules is so close to that of norms that it is often difficult to distinguish rules from norms. It is a matter of difference of specificity. In fact, regime theorists often employ the two terms interchangeably or in combined terms, such as 'rules and norms', 'norm and rule-guided action', etc. For Robert O. Keohane, "the rules of a regime are difficult to distinguish from its norms; at the margin, they merge into one another. Rules are, however, more specific: they indicate in more detail the specific rights and obligations of members".[57]

2.4 Decision-making procedures

As a durable and evolutionary institution, a regime needs to make continuous decisions to deal with internal matters or adapt to the changing external environment. The decision-making in a regime is an expression of the will of its members moulded through a process of collective choices. In today's decentralized international society composed of sovereign States, it is difficult to formulate an expression of the common will of a group of States, respecting the principle of sovereign equality but taking into account the factual inequality and conflicting interests among States. Appropriate procedures are necessary for an orderly process of collective choices. In the case of a regime founded on the basis of a formal constituent instrument, the basic rules of decision-making are normally included in the instrument, and more detailed procedures are established in terms of the rules of procedures for different levels of meetings.

In general, decisions in international regimes are made through the submission, discussion, and adoption of a proposal in the meetings of the regime members. Decision-making procedures include normally the rules governing the modalities of submission, discussion and adoption of proposals, as well as the distribution of voting power. For the

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[56] The 1972Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter
[57] Robert O. Keohane, After Hegemony, Princeton University Press, 1984, p. 58

adoption of proposals, which is the final phase of the decision-making process, various methods are employed according to the characteristics of each meeting and each decision to make. Since the 1960's, because of its dual merits, the consensus rule has been widely applied, in particular in global organizations. On the one hand, decision-making by consensus conforms to the principle of sovereign equality. On the other hand, a decision made by consensus is more conducive to compliance by the minority because it is not a decision imposed on the minority.[58] A variety of voting methods such as decision by unanimity or by different types of majority voting are being utilized according to the situation. The main subjects of decision-making in a regime are those relating to the establishment of the regime itself, its functioning, and its transformation through the amendment of constituent instruments.

Another category of decision-making procedures is the provisions relating to dispute settlement. Because disputes within a regime arise from the conflict concerning the interpretation and application of regime injunctions, they should be settled in the context of the relevant regime, in accordance with predetermined procedures. Decision-makings for the settlement of disputes are quite different in nature from other decision-makings; the former is made by an independent body empowered by regime members, while the latter is made by the regime members themselves.

Sometimes, decision-making procedures are consolidated through practice without formal provisions, as in the case of the Antarctic Treaty System, in which every substantive decision is made by consensus among Antarctic Treaty Consultative Parties according to a consolidated practice.

2.5 Convergence of expectations

[58] Henry G. Schermers and Niels M. Blokker explain merits and disadvantages of decision by consensus as follows: "...this (consensus) reconciles the apparently irreconcilable. Like unanimity, it fully respects sovereignty, and in common with majority voting, it fully takes into account the interests of the majority of states... Among the disadvantages of this manner of proceeding, frequent mention is made of the private character of negotiations, leaving no room for extensive public records which might facilitate the solution of future questions of interpretation; furthermore, negotiations are usually time-consuming and the content of decisions may be excessively watered down through almost endless compromises. See Henry G. Schermers and Niels M. Blokker, International Institutional Law, Martinus Nijhoff Publishers, 1995, p.785

The mere setting of principles, norms, rules and decision-making procedures is not enough for a regime to function. The core problem of regime functioning is how sovereign States comply with international norms and rules in the absence of any central authority entitled or empowered to enforce them. The principal, if not sole, determinant of the willingness of egoistic States to comply with regime injunctions is their self-interest. As illustrated in many models of game theory, States will cooperate insofar as they expect that others will cooperate also. Without such shared expectations, actors are prone to be driven to mutual defection by the dictates of egoism. In the rational calculation of interest, convergent expectations for mutual cooperation may facilitate cooperation and avoidance of defection. In a norm-guided behaviour, shared expectations facilitate compliance of each actor by strengthening the assurance that other actors too will comply with the norms. As such, convergent expectations constitute a behavioural foundation for cooperation among States, by guiding their decision-making toward cooperation and compliance. This behavioural aspect is the essential attribute that differentiates international regimes from international organizations or international institutions. Emphasizing this behavioural component of a regime, Martin List and Volker Rittberger assert that a regime can only be said to exist if a certain density of rules and durability of norm- and rule-guided behaviour can be ascertained.[59] In the same line, Friedrich Kratochwil and John Gerard Ruggie regard regimes as governing arrangements constructed by states to coordinate their expectations,[60] and Robert O. Keohane argues that regimes only exist if actors' expectations actually converge.[61] Oran R. Young draws attention to the conjunction of convergent expectations and patterns of behaviour or practice (the occurrence of behavioural regularities sometimes gives rise to a convergence of expectations, and vice versa), which produces conventionalised behaviour or behaviour based on recognizable social conventions.[62] Stephen Haggard and Beth A. Simmons consider that the strength of a regime is measured by the degree of

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[59] Martin List and Volker Rittberger, Regime Theory and International Environmental Management, in Andrew Hurrel an Benedict Kingsbury (ed.), International Politics of the Environment, Clarendon Press, Oxford, 1992, p. 89-90

[60] Kratochwil & Ruggie, International Organization: a state of art or an art of the state, *IO,* 1986, p.759

[61] Robert O. Keohane, The Analysis of International Regimes, in Volker Rittberger (ed.), Regime Theory and International Relations, Clarendon Press, 1993, p. 27

[62] Oran R. Young, Regime Dynamics: the Rise and Fall of International Regimes, in Krasner (ed.), op.cit., p. 94

compliance with regime injunctions, particularly in instances where short-term or "myopic" self-interests collide with regime rules.[63] John Rawls asserts, "an institution exists at a certain time and place when the actions specified by it are regularly carried out in accordance with a public understanding that the system of rules defining the institution is to be followed."[64] For Andrew Hurrel, "perhaps the most important difference that marks regime theory from international law and older notions of international society concerns the reasons why states obey rules that are usually unenforced and mostly unenforceable... regime theory's most distinctive contribution is to have developed the idea of self-interest and reciprocal benefits and, in general, to have downplayed the traditional emphasis placed on the role of community and sense of justice. The central challenge was to explain the emergence of cooperation on the basis of realist assumptions - that states are self-interested actors competing in a world of anarchy, that cooperation need not depend on altruism, that it can develop from the calculations of instrumentally rational actors."[65]

What do regime members expect? When States are said to be self-interested, it is meant that they pursue their individual interests. In reality, each State is motivated not only by individual interest but also by common interest shared by a group of States or the international society as a whole. Conflicts between individual interest and collective interest pervade international society. However, the most common in reality is the mixed-motive situation,[66] in which individual interest partially corresponds and partially conflicts with collective interest.

Although interest is the key variable in accounting for State behaviour, it is not the sole determinant of State behaviour. As Martti Koskenniemi asserts; "reliance on interest-rationality may also be unfounded, since states act through complicated networks of rationalities...", there must be, besides interest, some other factors which contribute to moulding State behaviour. In fact, it is not rare that States forgo their national interest in the cause of justice, international peace, human rights, or the intrinsic value of natural

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[63] Stephen Haggard and Beth A. Simmons, Theories of international regimes, *IO* ,1987, p.497
[64] John Rawls, A Theory of Justice, Oxford University Press, 1973, p. 55
[65] Andrew Hurrel, International Society and the Study of Regimes, A Reflective Approach, in Volker Rittberger (ed.), Regime Theory and International Relations, Oxford University Press, 1995, pp. 54-56
[66] For the concept of mixed-motive situations, see Thomas C. Schelling, The Strategy of conflict, Harvard University Press, Fifteenth printing, 1995, Part II Reorientation of Game theory, pp. 81-118

resources. Max Weber, Talcott Parsons, Raymond Boudon, Louis Henkin, John Rawls, Joseph Raz, and many other authors point out that utilitarian or functionalist analyses based on the pursuit of interest are not sufficient to explain human behaviour. They believe in the existence of normative orientation of action, without denying the importance of utility-based action. For Max Weber, legitimacy is one of the key factors orienting social action, when he asserts; "Action, especially social action which involves social relationships, may be oriented by the actors to a belief (*Vorstellung*) in the existence of a 'legitimate order.'"[67] Talcott Parsons regards the system of normative-orientation as a subsystem (together with a personality system and social system) of the system of action.[68] Raymond Boudon insists that axiological judgements cannot be reduced to the consideration of interest.[69] Louis Henkin underlines the binding force of moral commitments, by asserting; "often States (and their officials) have moral commitments, reflecting the ideology, the values, the "style" of their society, as well as some awareness of, and respect for, world opinion."[70] For John Rawls, "Justice is the first virtue of social institutions, as truth is of systems of thought...the primary subject of social justice is the way in which the major social institutions distribute fundamental rights and duties and determine the division of advantages from social cooperation."[71] For Joseph Raz, normativity is the core element of rationality. He maintains; "the core idea is that rationality is the ability to realize the normative significance of the normative features of the world, and the ability to respond accordingly."[72]

Whether it is interests or normative values that determine the behaviour of States, there is no guarantee that they coincide in harmony. Expectations converge through intersubjective understanding. In the interdependence structure, cooperation or conflict is a problem of interaction, in which each member of a group behaves on the basis of intersubjective understanding. John Rawls describes the intersubjective expectations; "A person taking part in an institution knows what the rules demand of him and of the others.

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[67] Max Weber, The Theory of Social and Economic Organization, translated by A. M. Henderson and Talcott Parsons, The Free Press, 1964, p. 124

[68] Talcott Parsons & Edward Shils, Toward a General Theory of Action, Transaction Publishers, 2001, Originally published in 1951 by Harvard University Press. Chapter 3. Systems of value-orientation.

[69] See Raymond Boudon, Le juste et le vrai, Librairie Arthème Fayard, 1995, pp. 251-292

[70] Louis Henkin, op.cit., p. 72

[71] John Rawls, A theory of Justice, Oxford University Press, 1972, pp. 3-7

[72] Joseph Raz, Engaging Reason, On the Theory of Value and Action, Oxford University Press, 1999, p. 68

He also knows that the others know this and that they know that he knows this, and so on. To be sure, this condition is not always fulfilled in the case of actual institutions, but it is a reasonable simplifying assumption."[73] For Parsons, "the expectations of an ego *always* imply the expectations of one or more alters."[74] Game theory illustrates more clearly that, in interdependent interactions, the expectation based on the decision of other actors constitutes one of the critical factors of each actor's decision. The goal-expectation theory argues that cooperation is likely to be effectively promoted when two conditions are met: (1) the individual must pursue cooperative goals, and (2) the individual must expect cooperation from the interdependent other.[75] D. M. Kuhlman and A. Marshello describe such interdependent cooperation; "Other's behaviour - or beliefs regarding other's behaviour - is a strong determinant of transformations and subsequent own behaviour. A pervasive effect is that the observation or expectation of non-cooperative behaviour evokes non-cooperative behaviour in the interdependent other. An observation or expectation that the interdependent other makes a cooperative choice tends to elicit (or maintain) cooperative behaviour among some (but not all) of us.[76] The lack of this intersubjective understanding is the critical cause of the behaviour of rational fools, as exemplified in the prisoners' dilemma, the tragedy of the commons, and stag hunters, etc.

Regimes facilitate the convergence of expectations among regime members by providing them with substantive and procedural rules and by instituting mechanisms aimed at forging convergent interpretations of regime injunctions by different means, such as a dispute settlement system or a meeting of members.

2.6 Issue-area

For Ernest B. Haas, an issue refers to "a single goal that found its way onto a decision-making agenda".[77] Similarly, Robert O. Keohane and Joseph S. Nye define issues as

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[73] John Rawls, A theory of justice, Oxford University Press, 1972, p. 56
[74] Talcott Parsons, op.cit. p.191
[75] Miles Hewstone and Wolfgang Stroebe, Introduction to Social Psychology, Blackwell Publishers, Third edition, 2001, p. 356
[76] D. M. Kuhlman, & A. Marshello, Individual differences in game motivation as moderators of preprogrammed strategies effects in prisoner's dilemma. *Journal of Personality and Social Psychology*, 32 (1975), 922-31
[77] Ernest B. Haas, When Knowledge is Power, University of California Press, 1990. P. 76

"problems about which policymakers are concerned, and which they believe are relevant to public policy" [78] These definitions indicate that the perception of a situation by decision-makers is crucial for a problem to become an issue. A potential problem, or even an imaginary problem may become an issue, whereas a real problem may not become an issue if it fails to be properly perceived. A '*malade imaginaire*' can be an issue, whereas an unnoticed cancer cannot be an issue. If the depletion of the ozone layer was not an international issue before 1980s, it was not because the depletion of the ozone layer began in the 1980s, but because the problem of ozone layer depletion has only been perceived since the 1980s. The reason why human perception is essential in forming an issue is that humans behave on the basis of internalised reality,[79] i.e. each individual's mental representation of the external situation.[80]

An issue-area is a cluster of issues, which are closely interconnected, as defined by Robert O. Keohane and Joseph S. Nye as "a set of issues that the governments see as closely interdependent and deal with collectively".[81] As a social institution, a particular regime should have its own realm delineated by boundaries. These boundaries may be designed by a regime creator or defined *a posteriori* by observers. In the former case, the boundaries of a given regime may be relatively clear, whereas in the latter case the regime boundaries may be vague or arbitrary according to the criteria applied by each observer. The delineation of issue-areas depends on the structure of networks of issues. If States are rational actors behaving on the basis of a stable order of preferences, as generally assumed by the realists, the world will be dominated by an overall power structure according to a fixed hierarchy of issues. For example, patterns of cooperation in economic and cultural issue-areas may be shaped by the political power structure. This is possible only in special situations in which power is sufficiently fungible.[82] In today's real

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[78] Robert O. Keohane and Joseph S. Nye, op.cit., p.64

[79] For the concept of internalised reality, see Peter Berger and Thomas Luckmann, The Social Construction of Reality, Doubleday & Company Inc., 1966

[80] See Paul Guillaume, *La psychologie de la Forme*, Flammarion, 1979, p. 136 « La psychologie contemporaine a pris, avec raison, l'habitude de ne pas séparer la perception et l'action. La perception prépare et règle l'action ; elle est destinée à rendre possible l'adaptation de l'être vivant à son milieu. »

[81] Robert O. Keohane and Joseph S. Nye, op.cit. p. 65

[82] David A. Baldwin defines fungibility as the ease with which capabilities in one issue-area can be used in other issue-area. He stresses that the longer the time frame of one's analysis, the more useful a high-fungibility assumption is likely to be. See David A. Baldwin (ed.), Neorealism and Neoliberalism, Columbia University Press, 1993, p. 20

world, conflicts of interest are so complex that it is difficult to establish a neatly defined hierarchy of issues. For Robert O. Keohane and Joseph S. Nye, the absence of a hierarchy among issues constitutes one of main characteristics of complex interdependence.[83] In different issue-areas different actors interact with different motivations and abilities. Ernest B. Haas emphasizes that regimes are arrangements peculiar to substantive issue-areas in international relations that are characterized by the condition of complex interdependence.[84] As Donald J. Puchala and Raymond F. Hopkins assert; a "regime exists in every substantive issue-area in international relations where there is discernibly patterned behaviour",[85] in each issue-area, particular principles, norms, rules and decision-making procedures are set out according to the nature of issues. However, each regime is not always entirely insulated. Multiple regimes may form a network or nesting structure.

2.7 Regimes and similar concepts

2.7.1 Regimes and Institutions

Institution in general means a convention of behaviour that is created by society to help it solve recurrent problems. Economists define institutions as "sets of rules that constrain the behaviour of social agents in particular situations".[86] In this definition, 'sets of rules that constrain the behaviour of agents' may correspond to 'principles, norms, rules, and procedures', and 'particular situations' to 'issue area'. The concept of institutions encompasses thus that of regimes. What differentiates regimes from institutions is the

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[83] See Robert O. Keohane, Joseph S. Nye, Power and Interdependence, op.cit, pp.24-29
For Keohane and Nye, three characteristics of complex interdependence in today's international society are multiple channels, absence of hierarchy of issues, and a minor role of Military Force. Multiple channels mean interstate, intergovernmental, and transnational relations. Absence of hierarchy among issues means that military security does not consistently dominate the agenda because the agenda of interstate relationships consists of multiple issues that are not arranged in a clear or consistent hierarchy. While admitting that military force is always a central component of national power because the survival is the primary goal of all states, Keohane and Nye believe that in most situations the effects of military force are both costly and uncertain.

[84] Ernest B. Haas, Words can hurt you; or, who said what to whom about regimes, in Krasner (ed.), op.cit, p. 27

[85] Donald J. Puchala & Raymond F. Hopkins, International Regimes: lessons from inductive analysis, in, Krasner (ed.), op.cit., p. 63

fact that in the concept of institutions injunctions are tied together in a single category of "sets of rules", whereas in the concept of regimes they are broken down into four levels of injunctions forming a conceptual hierarchy. The concept of regimes contains another qualifying attribute, 'the convergence of expectations' which is not contained in the concept of institutions. Because of converging expectations, regimes are more behavioural than institutions. In view of these similarities and differences, it can be said that regimes are institutions of a special type, a subset of institutions. For Oran R. Young, "institutions are sets of rules of the games or codes of conduct that serve to define social practices, assign roles to the participants in these practices, and guide the interactions among occupants of these roles".[87] Comparing this definition of institutions with his definition of regimes as "social institutions governing the actions of those interested in specifiable activities", it is clear that Young perceives regimes as a special type of institutions.

2.7.2 Regimes and Organizations

Michel Virally defines an international organization as an association of States, established by agreement among its members and endowed with a permanent apparatus of organs, whose task is to pursue the realization of the objectives of common interests by means of cooperation among its members.[88] Similarly, Henry G. Schermers and Niels M. Blokker define international organizations as "forms of cooperation founded on an international agreement creating at least one organ with a will of its own, established under international law".[89] Oran R. Young distinguishes international institutions from international organizations; "Whereas institutions are sets of rules of the game or codes of conduct defining social practices, organizations are material entities possessing offices,

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[86] Andrew Schotter, Microeconomics, Harper Collins College Publishers, 1994, pp.5-6

[87] Oran R. Young, International Governance: Protecting the Environment in a stateless society, Cornell University Press, 1994, p. 3

[88] Michel Virally, Le Droit International en Devenir, Presses Universitaires de France, 1990, p. 228
« Une organisation peut être définie comme une association d'Etats, établie par accord entre ses membres et dotée d'un appareil permanent d'organes, chargé de poursuivre la réalisation d'objectifs d'intérêt commun par une coopération entre eux. »

[89] Henry G. Schermers and Niels M. Blokker, International Institutional Law, Martinus Nijhoff Publishers, 1995, p. 33

personnel, budgets, equipment, and, more often than not, legal personality... organizations are actors in social practices, whereas institutions affect the behaviour of these actors by defining social practices and spelling out codes of conduct appropriate to them, but they are not actors in their own right".[90] What differentiates organizations from institutions also differentiates organizations from regimes: the former should have material elements such as offices, personnel, budgets, etc., whereas the latter may or may not have such material elements; the former can have legal personality,[91] the latter cannot. Another element which differentiates international regimes from international organizations is the normative character which is essential in regimes, but not necessary in organizations. As such, international organizations and international regimes are distinct concepts. But in many regimes, organizations are established to facilitate the regime functions.[92]

2.8 Modification of the definition of regimes

The definition of regimes examined above (recognized as the consensual definition by many regime theorists) has an advantage over other definitions in that it is the most comprehensive one, including most of the component elements of regimes contained in other definitions. It has some shortcomings as well. It is an enumerative form of definition. It merely enumerates the components, without properly assembling them into a synthetic concept. If we say that "a car is a set of a motor, wheels, handle, brakes, windows...", this is not a definition but an enumeration of elements. An enumeration of the parts of a car, however exhaustive it might be, does not mean a car. For them to constitute a car, they should be appropriately assembled into a whole entity. This whole entity is the core of the concept of a car, as follows; "a car is a road vehicle with usually

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[90] Oran R. Young, International Governance, Cornell University Press, 1994, pp. 3-4

[91] In some cases, there is an explicit statement on legal personality of international organizations. For example, the statue establishing the World Tourism organization stipulates; "the Organization shall have legal personality". In many cases, such a statement is not articulated but implicitly recognized in international organizations. N.D. White considers that "there appears no need for an express provision in the constituent treaty of an organization for it to be deemed to posses personality. N.D. White, The Law of International Organizations, Manchester University Press, p.1996, p. 27

[92] For example, the International Whaling Commission is the organization established in the regime under the 1946 International Convention for the Regulation of Whaling

four wheels which is driven by a motor and used as a means of travel for a small number of people".[93] Krasner's definition lacks this core concept. By introducing the concept of institution as the core of the concept of regime, Krasner's definition might be slightly modified as follows;

> "An international regime is *an international institution founded on* a set of principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations."

3. Creation of regimes

A variety of inquiries into the creation of international regimes may be classified into the following categories of questions; Who creates international regimes? Why are they created? How are they created?

3.1 Who creates international regimes?

Since the principal actors in international society are States, international regimes are in most cases created by States. Which State? Divergent answers from different lines of thoughts have been proposed to this question. Those who are inclined toward the realist standpoint believe in the decisive role of dominant powers in forming international regimes. For those who are confident of the possibility of cooperation among equals, international regimes can be formed through negotiations among equal States.

The realist standpoint concerning regime formation is commonly translated into the theory of hegemonic stability, which maintains that concentration of power in one dominant State facilitates development of strong regimes, and fragmentation of power is associated with regime collapse.[94] Realists believe that order in world politics is typically created by a single dominant power. This implies that the formation of international regimes normally depends on hegemony.[95] Hegemony refers to "that situation in which the ongoing rivalry between the so-called 'great powers' is so unbalanced that one power

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[93] Longman Dictionary of English Language and Culture, 1992, p. 176
[94] Robert O. Keohane, The demand for international regimes, in Krasner (ed.), p. 142

is truly *primus inter pares*; that is, one power can largely impose its rules and its wishes (at the least by effective veto power) [on the others]."[96] Since international regimes reflect the configuration of power in international society, they are created by the dominant powers. Other States have no choice but to comply or to be punished. The hegemon is regarded here as a provider of public goods, who ensures the enforcement of norms and rules, by giving rewards for cooperation and punishments for defection. The hegemon has dual images. A benign hegemon exercises its power in the service of common goods, bearing more than proportionate share of costs of maintaining the system. Such a hegemon may be exploited by small States, because of unequal burden-sharing in favour of small States, as in most military alliances, or because of the responsibility of the hegemon to absorb the costs of regime functioning,[97] as in the case of the responsibility of the United States in maintaining gold standard regime in the postwar period. In contrast, a hegemon propelled by narrow egoism may be viewed as a coercive bully, creating regimes only to facilitate the exercise of its power for the exploitation of small States, by articulating a set of normative principles conducive to its interests.[98] Whatever the image of a hegemon, "hegemonic powers must have control over raw materials, control over sources of capital, control over markets, and competitive advantages in the production of highly valued goods".[99] On the other hand, G. John Ikenberry and Charles A. Kupchan emphasize the importance of nonmaterial resources in the exercise of hegemonic power, in particular the socialization of secondary States by the hegemonic power.[100]

The theory of hegemonic stability is based on a domestic analogy in that the role of the hegemon in international society is assimilated to the role of the central government in domestic society. The basic idea underlying hegemonic stability can be found in Dante's *Monarchia* and Hobbes's *Leviathan*. History provides ample examples

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[95] Robert O. Keohane, After Hegemony, Princeton University Press, 1984, p. 31

[96] Immanuel Wallerstein, The politics of the World Economy, Cambridge University Press, 1984, pp.38-39

[97] For hegemonic cooperation, see Duncan Snidal, Relative Gains, in David A. Baldwin (ed.), Neorealism and Neoliberalism, Columbia University Press, 1993, p. 198

[98] Brezhnev Doctrine declared in 1968 can be regarded as one of the examples of this kind of hegemonic regime. This doctrine asserted the right of Soviet intervention in cases where "the essential common interests of other socialist countries are threatened by one of their number." This doctrine was used to justify the invasion of Czechoslovakia by the Soviets and their Warsaw Pact allies in 1968. See Britannica, CD-ROM

[99] Robert Keohane, After hegemony, op.cit., p. 32

[100] G. John Ikenberry & Charles A. Kupchan, Socialization and hegemonic power, *IO*, 44, 3, Summer 1990,

of hegemonic regimes; *Pax Romana, Pax Britannica, Pax Americana*, two blocs during the cold war, different types of feudal systems, ancient East Asian imperial systems formed around the Chinese empire, etc. However, the validity of this theory is challenged by recent experiences of creation of international regimes, in which hegemonic power did not play any decisive role, *e.g.* the creation of the Global Climate Regime. These counterexamples undermining the validity of the hegemonic stability theory may be explained in the light of the limited fungibility of power and the wide application of consensus rule. If the fungibility of power across issues is limited, structural power cannot be transformed automatically into bargaining power in the process of issue-specific regime building. For example, we can hardly believe that military power can be used as bargaining leverage in the formation of an environmental regime. Oran R. Young argues in this line; "Power in the sense of control over material resources or tangible assets - what the neorealists call structural power - is often difficult to translate into power in the sense of the ability to determine collective outcomes...Because great powers always strive to participate actively in a number of policy arenas simultaneously, moreover, the prospect of high opportunity costs is sufficient to induce such powers to negotiate rather than impose the terms of international regimes relating to most specific activities."[101]

While recognizing the limit of the role of hegemonic power in regime formation, we cannot deny the existence of a disparity between the bargaining leverage of great powers and that of small States. The very concept of structural power in its broadest sense contains the essential elements of bargaining power. For example, for Susan Strange, the sources of structural power include "control over security; control over production; control over credit; and control over knowledge, beliefs and ideas."[102] It is reasonable to believe that States richly endowed with these resources occupy normally a better strategic position than States poorly endowed therewith. Since there is a certain degree of fungibility, though limited, great powers may exercise more influence by means of issue-linkage; in the negotiation on a particular issue, great powers may

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pp. 283-315

[101] Oran R. Young, International Governance, Cornell University Press, 1994, p.89

[102] Susan Strange, States and Markets: An Introduction to International Political Economy, Basil Blackwell, 1988, p.26

strengthen their bargaining position by linking the issue under negotiation with other ones in which small States are dependent on the great powers. By doing so, as Arthur A. Stein argues, great powers can often structure the choices and preferences of minor powers.[103] Even in a given specific issue-area, a hegemon is likely to possess a dominant bargaining power, because it has more resources at its disposal in that issue-area, to the point that it dominates the negotiation without resorting to other sources of power. Considering divergent views on the role of a hegemon in international relations, it should be recognized that a hegemon is generally capable of playing a dominant role in regime formation in many cases.

In the institutionalist perspective, international regimes are basically decentralized institutions. They maintain that regimes can be created by hegemonic powers, but they can also be formed among equal States, through their concerted rational choice. Since States are rational egoists seeking maximization of their interests, they can arrive at agreements to establish norms and rules in such a way as to maximize their joint gains.

To say that regimes are created either by hegemons or non-hegemons is a mere truism. In order to give a meaning to this proposition, this line of interest-based theories should explain how self-interested and independent States manage to create a mechanism in which they can reap joint gains, acceptable, if not satisfactory, to all members of a regime. In this respect, the point of argument shifts from the question of who creates regimes to the question of why and how regimes are created.

3.2 Why are regimes created?

Whereas the question of who creates regimes relates to the supply side of regime creation, the question of why regimes are created concerns the demand side.

The first motivation for the creation of a regime is the necessity of coping with conflicts of interest among States in a given issue-area. In a harmony of interests, each State can achieve the optimal solution without resorting to institutionalised intervention.

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[103] Arthur A. Stein, Coordination and collaboration : regimes in an anarchic world, in Stephen Krasner (ed.), op. cit. p. 135

In a reality characterized by interdependence, such harmonious situations are rare, conflicting situations are common.

The second motivation for the creation of a regime is the necessity of dealing with the gap between individual rationality and collective rationality. If each State can achieve its desired optimal solution in the conflict of interests, only by relying on its own rationality, there will be no motivation for it to participate in the creation of regimes. In reality, the incongruence between individual rationality and collective rationality is a common feature in interstate relations. Regimes may serve as devices for solving the conflict of interests and bridging the gap between individual rationality and collective rationality. Without any regime, rational egoists might arrive at a Pareto-suboptimal solution. With the aid of a regime, the same rational egoists may achieve the Pareto-optimal solution, by overcoming the gap between individual rationality and collective rationality.

3.2.1 Theory of demand for international regimes

Many problems which arise in many issue-areas of international relations, in particular in issues dealing with global commons, are often analysed with the help of the concept of market failure. The concept of market failure is the foundation of interventionist logic; whenever the market fails, government action can be designed to eliminate the consequences of market failure and to achieve allocative efficiency. In international society, there is no central authority that can play such a role in dealing with the problems of free riding and externalities occurring in international commons. Such situations require some kind of devices, as substitutes for central authority.

Some regime theorists derive, by domestic analogy, much inspiration from the theory of market failure. For example, Robert O. Keohane advances the theory of demand for international regimes; "like imperfect market, world politics is characterized by institutional deficiencies that inhibit mutually advantageous coordination...international regimes may be interpreted as helping to correct similar institutional defects in world politics." [104] Keohane interprets regimes as devices for overcoming the barriers to more

[104] Robert O. Keohane, The demand for international regimes, in Stephen Krasner, (ed.), op.cit, p. 151

efficient coordination. As the principal barriers to a mutually beneficial agreement, he identifies, in particular, transaction costs and information costs. He perceives regimes as intermediate arrangements which facilitate the making of *ad hoc* substantive agreements by providing a framework of rules, norms, principles, and procedures for negotiation. This theory is inspired by the Coase theorem, which states that in market with externalities, if property rights are assigned unambiguously and if the parties involved can negotiate costlessly, then the parties will arrive at a Pareto-optimal outcome regardless of which one owns the property rights.[105] The core of this argument is that even if externalities exist, the agents involved will be able to correct the effects of the externalities by means of private agreements if they can costlessly negotiate among themselves. Coase identifies the key conditions for the Pareto-optimal solutions in the presence of externalities identified, as follows:

(a) a legal framework establishing liability for actions, presumably supported by governmental authority;
(b) perfect information; and
(c) zero transaction costs (including organization costs and costs of making side-payments).

By inverting these conditions, Keohane establishes a list of conditions, at least one of which must apply if regimes are to be of value in facilitating agreements among governments:

(a) lack of a clear legal framework establishing liability for actions;
(b) information imperfections (information is costly);
(c) positive transactions costs.[106]

Whereas the Coase theorem is formulated on the basis of the ideal situation of an imaginary world, Keohane's theory is based on the concrete situation of the real world. In world politics all of Keohane's conditions are met: world government does not exist and liability system is imperfect; information is extremely costly and often impossible to obtain; transaction costs, including the costs of organization and side-payments, are often very high. Insofar as international regimes can correct institutional defects in world

[105] Ronald Coase, The Problem of Social Cost, *Journal of Law and Economics*, Vol. 3, 1960, pp.1-44
[106] Keohane (ed.), op.cit., p. 154

politics along any of these three dimensions (liability, information, transactions costs), they may become efficient devices for the achievement of States' purposes. Believing that regimes do not necessarily establish enforceable legal liabilities in a strict sense, Keohane pays more attention to the second and third conditions. He is convinced that regimes are much more important in establishing negotiation frameworks (reducing transactions costs) and in helping to coordinate actors' expectations (improving the quality and quantity of information available to states). In the belief that political entrepreneurship is necessary in the creation of international arrangements, Keohane argues that we only expect regimes to develop where the costs of making *ad hoc* agreements on particular substantive matters are higher than the sum of the costs of making such agreements within a regime framework and the costs of establishing that framework. Since high quality information reduces uncertainty, there will be a demand for international regimes that provide such information. Most typical information problems that firms and consumers encounter in the market are asymmetric information, moral hazard, deception and irresponsibility. In international society, States may encounter these information problems. The necessity of resolving these problems of information costs can motivate States to create regimes designed to deal more efficiently with problems of uncertainty and risk.

In brief, the theory of demand for regimes implies that regimes are created if the benefits of creating regimes exceed the costs of their creation. The benefits of regimes reside in reducing the information costs and transaction costs. This idea goes in line with that of Abram Chayes and Antonia Handler Chayes who assert that in areas of activity covered by treaty obligations, the alternative to recalculation is to follow the established rule, because decisions are not a free good.[107]

3.2.2 Game theory and regime creation

Many regime theorists rely on the concepts of game theory in explaining regime creation. Game theory is concerned with the actions of decision makers who are conscious that

[107] Abram Chayes and Antonia Handler Chayes, On compliance, *IO*, 47, 2, Spring 1993, pp.178-179

their actions affect each other.[108] Game theory is useful in developing regime theory in two aspects. Regime theory and game theory share the basic assumptions: actors are self-interested and rational, they are independent, but their actions are interdependent. Starting from these shared assumptions, the two types of theories arrive at similar conclusions: independent actions result in sub-optimal outcomes at best, or disastrous outcomes at worst; such actors may achieve the optimal outcome through coordination and cooperation.

In game theory applied to international relations, States are assimilated to players. Strategies are usually simplified into a choice between cooperation (or comply, denoted by C) and defection (denoted by D). Payoffs are determined according to the nature of the game, which is characterized by possible combinations of strategies chosen by players. In a simplified basic two-person game with two strategies (2x2 game), there are four types of possible combinations; mutual cooperation **(CC)**, unrequited unilateral cooperation **(CD)**, unilateral defection **(DC)**, mutual defection **(DD)**. According to the structure of payoffs (a set of relative payoffs each player expects to receive in each event), games may be categorized into several types. The games most widely applied to international relations are Prisoner's Dilemma, Stag Hunt, Chicken, and Deadlock, which are classified according to the preference orderings of each player, as follows:[109]

Prisoner's Dilemma	:	DC>CC>DD>CD
Stag Hunt	:	CC>DC>DD>CD
Chicken	:	DC>CC>CD>DD
Deadlock	:	DC>DD>CC>CD

In environmental issues, Prisoner's Dilemma is frequently cited. But Stag Hunt is the most common situation in environmental issues. Chicken game and Deadlock situations occur frequently in security problems. [110]

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[108] Eric Rasmusen, Games and Information, Blackwell, 1989, p. 9

[109] See George W. Downs, David M. Roke, and Randolph M. Siverson, Arms Races and Cooperation, in Kenneth A. Oye (ed.), Cooperation under Anarchy, Princeton University Press, 1986, pp.118-146
See also Robert Axelrod and Robert O. Keohane, Achieving cooperation under anarchy: Strategies and institutions, in David A. Baldwin (ed.), Neorealism and Neoliberalism, Columbia University Press, 1993, pp. 85-115, Kenneth A. Oye, Explaining Cooperation under Anarchy, *World Politics*, Oct.1985

[110] The Munich crisis in 1938, the crisis of Berlin Blockade in 1948 and the Cuban crisis in 1962 are typical examples of Chicken Game. See Glenn H. Snyder and Paul Diesing, Conflict among Nations, Princeton University Press, 1977, 108-113
The confrontation of the United States and Japan in 1941which lead to the Pacific War is an example of

In Prisoner's Dilemma, each player's preference ordering is DC>CC>DD>CD, which can be illustrated in quantitative figures as follows;[111]

		Column player	
		C: cooperate	D: defect
Row player	C: cooperate	3, 3	1, 4
	D: defect	4, 1	2, 2

In this payoff matrix, for each player, unilateral defection is preferable to mutual cooperation (DC>CC; 4>3), which is preferable to mutual defection (CC>DD; 3>2), which is preferable to unilateral cooperation (DD>CD; 2>1). In this preference ordering, defection is the dominant strategy for each player.[112] Whatever strategy I might expect my partner to choose, my choice is defection: If I expect my partner to cooperate, my choice will be defection because DC>CC; If I expect my partner to defect, my choice will still be defection, because DD>CD. I expect that my partner will reason in the same way. In such a situation, both players are induced, by their own strategic rationality, to mutual defection, which provides optimal result to neither of them.

In Stag Hunt, each player's preference ordering is: CC>DC>DD>CD, which can be illustrated in quantitative figures as follows;

	C: cooperate	D: defect
C: cooperate	4, 4	1, 3
D: defect	3, 1	2, 2

In this payoff structure, the logic of the game is quite different from that of Prisoner's Dilemma: If I expect my partner to cooperate, I'll also cooperate (CC>DC; 4>3); If I expect my partner to defect, I'll also defect (DD>CD; 2>1). In this game, my strategy depends on the strategy that I expect of my partner. Therefore, there is no dominant strategy. Mutual cooperation is the best outcome for both players, but this can be done

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Deadlock. See Glenn H. Snyder and Paul Diesing, Ibid., p. 124

[111] In the payoff matrix, the first number (left side) in each cell represents the payoff allocated to row player, and the second number (right side) in each cell represents the payoff of column player.

[112] The strategy *Si* is a dominant strategy if it is a player's strictly best response to any strategies the other players might pick, in the sense that whatever strategies they pick, his payoff is highest with *Si*. His inferior strategies are dominated strategies. See Eric Rasmusen, op. cit, p. 16

only if each player has the assurance that the other player will cooperate also. The logic of this game can be applied to issues dealing with the commons, such as environmental issues, or other common pool resource issues, in which most actors are conscious of the advantage of mutual cooperation and ready to cooperate if only they have the assurance that the other actors cooperate also. In this sense, this game can be regarded as an assurance game.[113]

The merit of game theory in explaining regime creation resides in the fact that it shows in quantitative formulae the following logics, which constitute the basic rationale of regime creation:

1) In the absence of mutual communication and coordination, each player is tempted to defect in the hope of reaping the fruit of unilateral defection and/or for fear of encountering the worst payoff caused by unilateral cooperation;
2) By instituting mechanisms of mutual communication and coordination, the players can achieve mutual cooperation.

In Prisoner's Dilemma, the players are conscious that mutual cooperation is preferable to mutual defection for both players (CC>DD). If they are tempted to mutual defection, it's for fear of unilateral cooperation. If only mutual trust can be attained through exchange of information, can the dilemma be transformed into a cooperative game. [114] A regime may provide the mechanism for such confidence building.

In Stag Hunt, each player is ready to cooperate if only he can has enough reason to expect that the other player will also cooperate. If each player is tempted to defect nevertheless, this is because of a lack of assurance that the other player will cooperate. In such a situation, trust building by mutual communication is essential in transforming the Stag Hunt into a cooperative game.[115] A regime may provide a mechanism for such a confidence building.

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[113] Lisa L. Martin, Interests, power, and multilateralism, *IO*, 46, 4, Autumn 1992, pp.765-792

[114] A cooperative game is a game in which the players can make binding commitments, as opposed to a noncooperative game, in which they cannot. See Eric Rasmusen, op. cit., p.18

[115] The difference between Prisoner's Dilemma and Stag Hunt in this logic resides in the following: In Prisoner's Dilemma, there remains the temptation to defect even if mutual cooperation is possible, because unilateral defection is preferable to mutual cooperation (DC>CC). In Stag Hunt, once mutual cooperation is attainable by mutual communication and coordination, each player feel no temptation to defect, because mutual cooperation is preferable to unilateral defection (CC>DC).

The rationale of regime creation can be illustrated more clearly by introducing concepts of incentive and disincentive into the game theory, as Robert Jervis maintains; "The chances of achieving this outcome will be increased by: (1) anything that increases incentives to cooperate by increasing the gains of mutual cooperation (CC) and/or decreasing the costs the actor will pay if he cooperates and the other does not (CD); (2) anything that decreases the incentives for defecting by decreasing the gains of taking advantage of the other (DC) and/or increasing the costs of mutual noncooperation(DD); (3) anything that increases each side's expectation that the other will cooperate."[116]

Jervis indicates that players can be induced to mutual cooperation when the payoff matrix can be appropriately transformed. Such an argument can be more clearly illustrated in game theoretical terms. By imposing penalties on defection and/or by granting reward for cooperation, preference ordering can be changed so as to induce players to cooperate. Taking the above payoff matrix of Prisoner's Dilemma, suppose that one point of penalty is imposed on defection, and one point of reward is granted for cooperation. Then the payoff matrix is modified as follows;

	C	D
C	3, 3	1, 4
D	4 , 1	2, 2

Original payoff matrix

	C	D
C	3+1, 3+1	1+1, 4-1
D	4-1, 1+1	2-1, 2-1

=

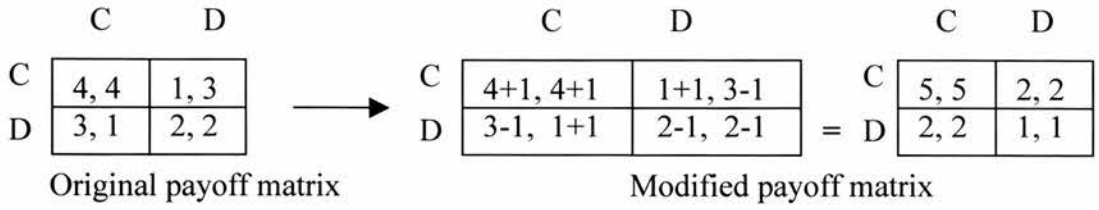
	C	D
C	4, 4	2, 3
D	3, 2	1, 1

Modified payoff matrix

In the original payoff matrix, the preference ordering was DC>CC>DD>CD. In the modified payoff matrix, this ordering is changed to CC>DC>CD>DD. Contrary to the original payoff matrix, the modified matrix is structured so as to induce players to mutual cooperation. For row player and column player alike, there are incentives for cooperation and disincentives for defection. For each player, cooperation is preferable to defection, whatever the other player's strategy might be. In such a way, cooperation, instead of defection, becomes the dominant strategy.

[116] Robert Jervis, Cooperation under the Security Dilemma, *World Politics*, January 1978, No.2, p. 171

Similarly, in the Stag Hunt game, suppose that one point of penalty is imposed on defection, and one point of reward is granted for cooperation. Then the payoff matrix is modified as follows;



Original payoff matrix Modified payoff matrix

In the original payoff matrix, the preference ordering was CC>DC>DC>CC. In the modified payoff matrix, the preference ordering is CC>CD=DC>DD. In this new situation, each player has a strong incentive to cooperate and no temptation to defect. In such a way, the two players will be induced to cooperation by their common interests, and deterred from defecting for fear of their common aversions.[117]

In spite of the merits of clear argument, game theories have limits in explaining the rationale of regime creation. Like mathematical formulae, they say nothing about concrete reality. As purely abstract methods of reasoning developed on the basis of allegorically imagined situations, they can serve only as engines of analogical inference.

3.3 How are regimes created?

Regimes can be created spontaneously among States through an accumulation of practices, or through social engineering geared by a hegemonic power or by a group of equal States. Non-State actors can exercise influence on the creation of international regimes.

3.3.1 Spontaneous regime creation

[117] For the mechanism of common interests and common aversions, see Arthur A. Stein, Coordination and collaboration: regimes in an anarchical world, in Stephen D. Krasner (ed.), op.cit., pp.115-140

In explaining regime formation, Oran R. Young presents three types of international orders; spontaneous orders, negotiated orders, and imposed orders, which correspond to spontaneous regimes, negotiated regimes, and imposed regimes respectively. Spontaneous orders are the product of the action of many men but...not the result of human design.[118] Such institutions do not involve conscious coordination among participants, do not require explicit consent on the part of subjects or prospective subjects, and are highly resistant to efforts at social engineering.[119] Natural market, balance of power system, language system or mores are examples of this category of orders.[120] On the contrary, Robert O. Keohane does not believe in the spontaneous formation of international regimes, by arguing; "Neither international agreements nor international regimes are created spontaneously, and political entrepreneurs must exist who see a potential profit in organizing collaboration."[121]

3.3.2 Regime creation by social engineering

A majority of existing international regimes were created by the conscious efforts of the individual participants. This social engineering may be done by a dominant power or by equal States through negotiation. Regimes created by social engineering geared by a dominant power are called imposed regimes. For Oran R. Young, imposed regimes are deliberately established by dominant actors who succeed in getting others to conform to the requirements of these orders through some combination of coercion, cooperation, and the manipulation of incentives.[122] Young presents two types of imposed orders; overt hegemony and *de facto* imposition. Overt hegemony occurs when the dominant actor openly and explicitly articulates institutional arrangements and compels subordinate actors to conform to them, as in the case of classical feudal arrangements as well as many of the great imperial systems. *De facto* imposition refers to situations in which the

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[118] Oran R. Young cites the concept of spontaneous orders defined by Friedrich A. Hayek, in Rules and Order, vol.1 of *Law, Legislation, and Liberty*, Chicago University Press, 1973, p. 27

[119] Oran R. Young, Regime dynamics: the rise and fall of international regimes, in Krasner, (ed.), op.cit, p. 98

[120] Idem.

[121] Robert O. Keohane, The demand for international regimes, in Krasner (ed.), op.cit, p.155

[122] Oran R. Young, Regime dynamics: the rise and fall of international regimes, in Krasner (ed.) op.cit., p.100-101

dominant actor is able to promote institutional arrangements favourable to itself through various forms of leadership and the manipulation of incentives, like the role of Britain in the nineteenth-century regime for the oceans or the role of the United States in the regime for the continental shelves.[123] The concept of imposed regimes is nothing but a reflection of the theory of hegemonic stability.

In contemporary international society composed of sovereign States, the most common way of regime creation is negotiation. Most regimes are created on the basis of an agreement made by conscious efforts and more or less explicit consent by independent States. In order to create a device leading to cooperation by overcoming the conflicts of interest, States are motivated to negotiate, at a bilateral, regional or global level. Through negotiation, interested States formulate the principles, norms, rules and procedures which are expected to permit them to arrive at an equilibrium point on which their interests converge.

3.3.3 Regime creation under the influence of non-State actors

Cognitivist regime theorists draw much attention to the role of non-State actors, in particular epistemic communities, which play their role in the making of international regimes by providing the bases of consensual knowledge. Ernest B. Haas defines consensual knowledge as "generally accepted understandings about cause-and-effect linkages about any set of phenomena considered important by society, provided only that the finality of the accepted chain of causation is subject to continuous testing and examination through adversary procedures."[124] For Haas, consensual knowledge is socially constructed and therefore inseparable from the vagaries of human communication. Consensual knowledge may not be true or complete. By epistemic communities are meant networks of knowledge-based communities with an authoritative claim to policy-relevant knowledge within their domain of expertise. Their members share knowledge about the causation of social or physical phenomena in an area for which they have a reputation for competence, and a common set of normative beliefs

[123] Idem.
[124] Ernest B. Haas, When Knowledge Is Power, University of California Press, 1990, p. 21

about what actions will benefit human welfare in such a domain.[125] According to knowledge-based theories, epistemic communities may contribute to the emergence of norms and principles of behaviour, and they can even perform the surveillance, information gathering, and enforcement functions of an already established regime.[126] They can do so by providing a cognitive basis for policy makers or by creating public opinion in favour of their shared beliefs.

There is no denying the importance of the impact of converging social cognition and epistemic communities on the behaviour of State actors in the course of regime negotiation, especially in the fields which require highly specialized expertise, as in many environmental issues. They affect government decision-making by generating paradigms in perception, belief systems or value systems of decision makers. But however strong their influence might be, epistemic communities are influencers, not actors in the formation of international regimes. In the present States system, they can contribute to the creation of regimes only by influencing State actors. For Stephen Krasner also, "Knowledge alone is never enough to explain either the creation or the functioning of a regime. Interests and power cannot be banished. But knowledge and understanding can affect regime."[127] In the same vein, Oran R. Young points out the limits in the role of epistemic communities; "In the case of climate change, it seems clear that the Intergovernmental Panel on Climate Change has been influential in bringing ideas to bear as a means of defining the scope and nature of the problem. But it is equally clear that the IPCC has not been a major force in the bargaining process unfolding under the auspices of the Intergovernmental Negotiating Committee from February 1991 onward."[128] Moreover, State behaviour is influenced not only by epistemic communities, but also by other non-State actors, such as the business sector, trade unions, etc.

4. Consequences of regimes

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[125] Peter M. Haas, Epistemic Communities and the Dynamics of International Environmental Cooperation, in Volker Rittberger, (ed.), Regime Theory and International Relations, Clarendon Press, 1993, p.179

[126] Virginia Haufler, Crossing the Boundary between Public and Private: International Regimes and Non-State Actors, in Volker Rittberger (ed.), op.cit. p. 107

[127] Stephen D. Krasner, Regimes and the limits of realism: regimes as autonomous variables, *IO*, 36, 2, Spring 1982

[128] Oran R. Young, International Governance, Cornell University Press, 1994, p. 98

4.1 Causality of regime consequences

In the relationship between a regime and its consequences, it is clear that the latter are dependent variables; i.e. they are dependent on the former. As for the former, it is considered to be either an intervening variable[129] or an independent variable.

Stephen D. Krasner assumes that regimes can be conceived of as intervening variables standing between basic causal variables (most prominently, power and interests) and outcomes and behaviour.[130] If regimes matter, the causality can be depicted as follows;

BASIC CAUSAL VARIABLES → REGIMES → RELATED BEHAVIOR AND OUTCOMES

In this assumption, regimes do not arise of their own accord. They are not regarded as ends in themselves.

Krasner recognizes also the autonomous role of regimes; "Once regimes are established they assume a life of their own, and while the influence of basic causal variables does not evaporate, principles, norms, rules and decision-making procedures come to have their own exogenous impact on outcomes and behaviour."[131] This causality can be depicted as follows;

[129] Intervening variable is a psychological concept which means a state of an organism or person postulated to explain behaviour and defined in terms of its causes and effects rather than its intrinsic properties, such as food drive. See The Cambridge Dictionary of Philosophy, 1995, p.382

[130] Stephen D. Krasner, Structural causes and regime consequences: regimes as intervening variables, in Krasner (ed.), op.cit., pp. 5-10

[131] Stephen D. Krasner, op.cit.,, p. 359

Whether independent variables or intervening variables, they are explanatory variables, which account for the outcomes produced by or through regimes. A fundamental methodological problem arising here is the question of how to identify the causal relationship between a given regime and the outcomes supposed to be produced by that regime. Even a single behaviour of a State is the result of a complex interplay of various factors. From the infinity of causal factors, it is difficult to single out the one to which an observed outcome is attributable. Moreover, in international regimes, where sovereign States are actors, experimentation is practically unfeasible. For these reasons, some theorists recognize that it is inevitable to resort to counterfactual analysis,[132] which is widely employed in fields where experimental researches or statistical analyses are not appropriate, such as analyses of historical causality. Thomas J. Biersteker recognizes that "in the analysis of international regimes, it is difficult for the analysts interested in their causal consequences to avoid relying on the construction of historical counterfactual alternatives at some point, either explicitly or implicitly."[133] More specifically, Thomas Volker Rittberger and Michael Zürn assert; "Investigating the consequences of international regimes requires a counterfactual argument. In case the conflicts in the issue-area are not managed by a regime, then one has to speculate about what a regime could do. And if a regime does exist, one has to cope with the question of what would be without it."[134] Conscious of the inevitability of resorting to counterfactual analysis in dealing with regime consequences on the one hand, and the limitations inherent in this method on the other hand, Biersteker suggests that historical counterfactual alternatives must be articulated explicitly, in conjunction with a clearly identified theoretical framework.[135] Applied to the causal relations between regimes and their consequences, a

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[132] According to Max Weber, historical causation involves "the production of "imaginative constructs" by the disregarding of one or more of those elements of "reality" which are actually present, and by the mental construction of a course of events which is altered through modification in one or more "conditions." Max Weber, The Methodology of the Social Sciences, translated and edited by E.A. Shils and H.A.Finch, Free Press, 1949, p. 173

[133] Thomas J. Biersteker, Constructing Historical Counterfactuals to Assess the Consequences of International Regimes, in Volker Rittberger (ed.), Regime Theory and International Relations, Oxford University Press, 1995, p.327

[134] Volker Rittberger and Michael Zürn, Towards Regulated Anarchy in East-West Relations: Causes and Consequences of East-West Regimes, in Rittberger (ed.), International Regimes in East-West Politics, 1990, p. 47

[135] Thomas J. Biersteker, op.cit., p.337

counterfactual argument would mean; "If regime A had not been created, outcome B would not have been produced; is regime A therefore a cause of outcome B?"

4.2 What consequences do regimes generate?

Realists are sceptical about the consequences of regimes in international relations, because they perceive regimes as surface phenomena reflecting power distribution, empty facades that rationalize the rule of the powerful by elevating their preferences to the status of norms. Susan Strange, in particular, argues; "All those international arrangements dignified by the label regime are only too easily upset when either the balance of bargaining power or the perception of national interest (or both together) change among those states who negotiate them...Not only does using this word regime distort reality by implying an exaggerated measure of predictability and order in the system as it is, it is also value-loaded in that it takes for granted that what everyone wants is more and better regimes, that greater order and managed interdependence should be the collective goal...Moreover, many of the so-called regimes over which the international organizations preside turn out under closer examination to be agreements to disagree."[136]

Regime theorists believe, of course, that certain outcomes are generated by or through regimes under certain conditions. According to Oran R. Young, an institution is effective to the extent that its operation impels actors to behave differently than they would if the institution did not exist or if some other institutional arrangement were put in its place. For Young, regimes induce States to 'patterned behaviour,' or 'conventionalized behaviour,' which means behaviour guided by regime injunctions which serve as behavioural standards on which actors rely without making detailed calculations on a case-by-case basis.[137] He believes that the rise of conventionalized behaviour is apt to engender a widespread feeling of legitimacy or propriety in conjunction with specific institutional arrangements. Some interest-based theorists, for example Arthur A. Stein,[138] resort to the logic of game theory to show that regimes may engender coordinated behaviour or collaborative behaviour in situations of conflicting

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[136] Susan Strange, *Cave! hic dragones*, in Krasner (ed.), International regimes, op.cit., pp.337-354
[137] Oran R. Young, Regime dynamics: the rise and fall of international regimes, *IO,* 36, 2 Spring 1982

interests. According to the analyses inspired by microeconomic theories, regimes may lead States to Pareto-optimal outcomes, which cannot be achieved by individual rationality in situations in which markets fail. For example, Robert Keohane asserts; in situations of market failure, "specific attributes of the system impose transaction costs (including information costs) that create barriers to effective cooperation among the actors. Thus institutional defects are responsible for failures of coordination. To correct these defects, conscious institutional innovation may be necessary."[139] Helmut Breitmeier and Klaus Dieter Wolf analyse regime consequences by classifying them into two categories; problem solving effects in issue-area, and context changing effects in domestic structure and international system. In the dimension of issue-area, regimes generate problem solving consequences, by means of 'just' and 'sustainable' conflict regulation. By 'justice', Breitmeier and Wolf mean the amount to which the procedures of conflict regulation and the value distribution within the issue-area are regarded as fair by participating actors. By 'sustainability' they mean the distribution of values which is neither to the detriment of future generations nor insufficient with respect to the limits of the natural environment.[140]

In sum, international regimes modify State behaviour, by inducing States to behave in conformity with a pre-established set of principles, norms, rules and decision-making procedures. By fostering norm-guided and rule-compliant behaviour, regimes mitigate the exercise of naked power and interest politics.

4.3 How do regimes generate their consequences?

To the question of how and under what conditions a regime produces its consequences, power-based theorists seek their answers in the structural factors of international society, interest-based theorists in the rational calculations, and knowledge-based theorists in the influence of knowledge.

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[138] Arthur A. Stein, Coordination and collaboration, in Stephen D. Krasner (ed.), op.cit., pp.115-140
[139] Robert O. Keohane, After Hegemony, Princeton University Press, 1984, p.83
[140] Helmut Bretimeier and Klaus Dieter Wolf, Analysing Regime Consequences : Conceptual Outlines and Environmental Explorations, in Volker Rittberger (ed.), Regime Theory and International Relations, Clarendon Press, 1993, pp.339-388

Within a modified neo-realist framework, Robert O. Keohane asserts; "international regimes can affect capabilities by serving as a source of influence for States whose policies are consistent with regime rules, or which are advantaged by the regime's decision-making procedures."[141]

According to the interest-based functionalist theories, international regimes may alter calculations of interest by assigning property rights, providing information, and altering patterns of transaction costs, as suggested in the theory of demand for regimes. In game-theoretical perspective, regimes may produce their consequences by facilitating the realization of joint maximization based on the rational calculations made by actors in their pursuit of utility maximization. Arthur A. Stein, for example, maintains that the institutionalization of coordination and collaboration can become a restraint on individualism and lead actors to recognize the importance of joint maximization; those who previously agreed to bind themselves out of self-interest may come to accept joint interests as an imperative.[142]

In the cognitivist perspective, regimes may orient State behaviour by changing the perceptions of decision-makers. Peter M. Haas underlines that regimes may serve as important vehicles for international learning that produce convergent State policies, and believes that regimes may be transformative, leading to the empowerment of new groups of actors who can change State interests and practices.[143]

In some issue-areas where States themselves are real actors, such as armament, regimes regulate directly State behaviour. But in most issue-areas, States themselves are not real actors but regulators. The real actors are individuals, companies, organizations or other entities under their jurisdiction or control. Yet, most regime injunctions are formulated in the form of norms and rules to be complied with by States. In order to regulate the activities of real actors, such as fishers, polluting ships, industrials producing the substances that deplete the ozone layer, regime injunctions should be internalised by national policies. These policies are generally crystallized into domestic laws and regulations. Regimes founded on formal international instruments often require States to

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[141] Robert O. Keohane, The Analysis of International Regimes, in Rittberger, (ed.), op.cit., 1993, p.29

[142] Arthur A. Stein, Coordination and collaboration: regimes in an anarchic world, in Krasner, (ed.), op.cit., p. 139

[143] Peter M. Haas, Do regimes matter? Epistemic Communities and Mediterranean Pollution Control, *IO*,

legislate and enforce domestic laws and regulations for the implementation of regime injunctions.[144]

In sum, international regimes may be regarded as a kind of conflict management scheme. Conflict of interests among States may be more smoothly and more fairly resolved and cooperation may be more easily fostered through regimes by changing the pattern of interplay of power, the mode of rational calculation of self-interest, or the cognitive framework of States.

5. Application of regime theory to the analysis of the regime for the protection of the marine environment

5.1 Adjustment of the terminology to the nature of subject-matter

Although regime theory is developed in the context of international relations theory, it can be applied to political, legal, economic, or any other issue-areas provided that there exist a self-governing mechanism on the basis of a set of substantive and procedural norms. Regime theory borrows some key terms, such as 'principle', 'norm' and 'rule' from other social sciences. In order to build up a theory, regime theorists have given new definitions to them. As a result, there can be some discrepancies between the meanings given to these terms in regime theory and their meaning generally recognized in other sciences.

The concepts of principles, norms, rules used in the definition of regimes are basically similar, but not identical, to the concepts of these terms used in legal science. In order to avoid confusions in analysing a legal regime in the light of the theoretical tools provided by regime theory, attention should be paid to this difference in the meanings of the terms. There are two alternatives: 1) to use the terms as redefined in regime theory; 2) to use the terms in their ordinary meaning in legal science. The former will be more

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1989, pp.377-403

[144] For example, Article 207, para.1 of the 1982 UNCLOS stipulates; "States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards and recommended practices and procedures". See infra. Chapter 6

faithful to regime theory, but may cause some conceptual confusion in the analysis of legal regimes. The latter will make no confusion in the analysis of a legal regime, but will cause a certain degree of departure from regime theory. Comparing the weight of these merits and demerits of each choice, it can be more desirable to take the former. Since tools are instrumental in nature, it is more reasonable to adjust them to the nature of subject matter. Without remodelling regime theory, we may return to the original meanings of the terms 'principles', 'norms' and 'rule', as they are generally understood in legal science, as follows.

<Norms>

In the variety of definitions of norms, the most common element is that norms are standards of value judgment and standards of behaviour shared by a society. In this sense, Karl-Dieter Opp classifies the definitions of norms into two categories; the *oughtness* definition and the *behavioural* definition.[145]

In the *oughtness* definitions, norms are what a person ought to be or ought to do in a certain circumstance. In such a definition, the concept of norm is based on the concept of value. Hans Kelsen's concept of norm is that of oughtness definition. For Kelsen, a norm refers to a prescription or an order and means something that ought to be or ought to happen (*Sollen*).[146] George C. Homans also proposes an oughtness definition, "A norm is a statement specifying how a person is, or persons of a particular sort are, expected to behave in given circumstances – expected, in the first instance, by the person that utters the norm. What I expect of you is what you ought to do."[147]

In *behavioural* definitions, a norm is perceived as a standard of social behaviour.[148] A norm is formed under the social influence, and shared and accepted by a group of individuals. And thereby it oils social interactions. For Niklas Luhmann, a norm is a modality of social communication, which allows actors to reduce complexity and

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[145] Karl-Dieter Opp, How do Norms Emerge? In Raymond Boudon, Pierre Demeulenaere, Riccardo Viale (ed.), L'explication des normes sociales, Presses Universitaires de France, 2001, pp.11-43

[146] Hans Kensen, Théorie Générale des Normes, traduit de *Allgemeine Theorie der Normen* par Olivier Beaud & Fabrice Malkani, Presses Universitaires de France, 1996, p. 2
« Dans la mesure où le mot de 'norme' désigne une prescription ou un ordre, la 'norme' signifie que quelque chose doit être ou avoir lieu. »

[147] George C. Homans, Social Behavior, Its Elementary Forms, Hartcourt, 1974, p. 96

[148] See Denys de Béchillon, Qu'est-ce qu'une règle de Droit? Editions Odile Jacob, 1997, p. 171

contingence of social life.[149] Alain Cerclé and Alain Somat defines a norm as a rule of behaviour or value judgment shared and accepted by specific group of individuals in interaction, which is acquired through the process of social influence.[150]

The difference between the oughtness definitions and the behavioural definitions resides only in their emphasis. Any norm has both aspects. A norm is a scheme of behaviour generally, if not necessarily, based on a certain moral value.[151]

<Principles>

Principles are abstract legal rules, providing the basis of a legal regime applicable to multiple concrete situations, either to regulate them in a permanent way or to resolve difficulties arising from the situations.[152] Most principles have some common characteristics: i.e. ideological, abstract and general.

Principles contain ideological feature declaring an axiomatic value, for example the declaration of the inherent right of individual or collective self-defence. For Ronald Dworkin, a principle is a standard that is to be observed, not because it will advance or secure an economic, political, or social situation deemed desirable, but because it is a requirement of justice or fairness or some other dimension of morality.[153]

Principles are abstract norms. Being abstract, principles serve as guidelines, rather than imposing concrete obligations.[154] Many of them remain as political principles. Even though they are formulated as legal principles laying down the rights and obligations,

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[149] Niklas Luhmann, A Sociological Theory of Law, Translated by E. King & M. Albrow, Routledge & Kegan Paul, 1985, p. 19. For Luhmann, "The complexity of social action arises from the fact that actors, in their efforts of coordination, face always a multitude of possibilities. Contingence means the fact that action can always take place differently from the plan. Actors can reduce the uncertainty of social life by communicating."

[150] Alain Cerclé &Alain Somat, Manuel de psychologie sociale, DUNOD, 1999, p . 134
« Une norme est une règle de comportements ou de jugements évaluatifs, partagée et acceptée par un collectif spécifique ou spécifiable d'individus en interaction, dont l'acquisition est soumise à un processus d'influence sociale. L'existence d'une norme implique l'attribution d'une valeur reconnue par le collectif. »

[151] See Louis Quéré, Le schématisme de la norme d'un point de vue sociologique, in La Querelle des normes, *Cahiers de philosophie politique et juridiques*, N° 27, 1995, Presses Universitaires de Caen, 1995 See also Christophe Grzegorczyk, La théorie générale des valeurs et le droit, Bibliothèque de philosophie du droit, volume XXV, Libraire Générale de Droit et de Jurisprudence, 1982

[152] See Michel Virally, Le Droit International en Devenir, Presses Universitaires de France, 1990, p. 197

[153] Ronald Dworkin, Taking Rights Seriously, Harvard University Press, seventeenth printing 1999, p. 22

[154] André Nollkaemper, "What You Risk Reveals What You Value " and Other Dilemmas Encountered in the Legal Assault on Risk, in Freestone and Hey (ed.) The Precautionary Principle and International Law, Kluwer Law International, 1996, p. 80

most of them remain in the province of *lege ferenda.*[155]

By being abstract, principles are characterized by the generality of application, as Freestone states: "the very notion of a principle requires that it be formulated at a sufficient level of generality that it can be of broad application."[156]

<Rules>

Rules are concrete norms which dictate a certain type of actions or inactions. In this sense, Grotius construes a rule as equivalent to law. [157] Hart distinguishes the primary rules and the secondary rules. Under the primary rules, human beings are required to do or abstain from certain actions, whether they wish to or not. These are the rules of obligation. The secondary rules specify the ways in which the primary rules may be conclusively ascertained, introduced, eliminated, varied, and the fact of their violation conclusively determined.[158]

<Relationship between principles, norms and rules>

As examined above, in legal theory, the concept of norms is wider one than that of principles or rules. Norms comprise principles and rules. It can be said that principles are abstract norms, while rules are concrete norms. This conceptual structure is different from that of regime theorists who classify substantive regime injunctions into three-tiered concepts: [principles - norms - rules], rated according to the degree of abstractness.

If principles and rules can be considered to be included in the category of norms, a question arises as to the distinction of principles from rules. The criteria generally used for this distinction are the degree of abstractness and the degree of generality. But the two

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[155] Michel Virally, op. cit., pp. 198-205
For Virally, some principles, such as the principle of permanent sovereignty over natural resources, declared in the Resolution 1803 (XVII) of the General Assembly, can be regarded as *lege lata.*

[156] David Freestone, Caution or Precaution: "A Rose By Any Other Name...?" *Yearbook of International Environmental Law*, Volume 10 (1999), p. 26

[157] Hugo Grotius, Le Droit de la Guerre et de la Paix, (*De jure Belli ac Pacis*) Traduit par P. Pradier-Fodéré, PUF, 1999, Livre I, Chapitre I, IX, p. 37 « Il y a une troisième signification du mot droit, suivant laquelle ce terme est synonyme du mot *loi*, pris dans le sens le plus étendu, et qui veut dire une règle des actions morales obligeant à ce qui est honnête. »

[158] H.L.A Hart, The Concept of Law, Second edition, Oxford University Press, 1997, Chapter V Law as the Union of primary and secondary rules. pp. 79-99

criteria go together, because the more abstract a norm is, the wider is its applicability.[159] Applying the criterion of generality, it is clear that principles are more general norms than rules, as David Freestone asserts; "We might usefully recall that in jurisprudential terms the difference between a rule and a principle is the very level of generality in which it is phrased – indeed, it is the nature of principles to be vague. A rule is formulated with a degree of precision that will allow for its equal application in similar cases, whereas the very notion of a principle requires that it be formulated at a sufficient level of generality that it can be of broad application."[160] ICJ also takes a similar position.[161] Ronald Dworkin proposes similar criteria in different expressions, such as the character of the direction they give and the dimension of weight or importance.[162]

The relations between the three terms as defined by regime theorists can be schematised as follows, in the order of their degree of abstractness:

$$P>N>R$$

In their meaning in legal theory, these relations can be schematised as follows:

$$N\supset P,\quad N\supset R,\quad P>R$$

This means: Principles are a sort of norms; Rules also are a sort of norms; Principles are more abstract than rules.

In analysing the injunctions of the regime for the protection of the marine

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[159] See Michel Virally, op.cit., p. 203 "Plus la règle devient vague et imprécise et, par conséquent, fournit un guide moins complet et moins sûr pour l'action…elle devient aussi susceptible de s'appliquer à des cas de plus en plus nombreux et de plus en plus différents. »

[160] David Freestone, Caution or Precaution: "A Rose By Any Other Name…"? *YIEL*, volume 10, 1999, p. 26

[161] Gulf of Maine Case (1984) ICJ reports 246, 288-90, para.79 "The association of the terms 'rules' and 'principles' is no more than the use of a dual expression to convey one and the same idea, since in this context 'principles' clearly means principles of law, that is, it also includes rules of international law in whose case the use of the term 'principles' may be justified because of their more general and more fundamental character."

[162] Ronald Dworkin, op. cit. pp. 22-28. For Dworkin, "The difference between legal principles and legal rules is a logical distinction. Both sets of standards point to particular decisions about legal obligation in particular circumstances, but they differ in the character of the direction they give. Rules are applicable in an all-or-nothing fashion. If the facts a rule stipulates are given, then either the rule is valid, in which case the answer it supplies must be accepted, or it is not, in which case it contributes nothing to the decision…A principle like 'No man may profit from his own wrong' does not even purport to set out conditions that make its application necessary. Rather it states a reason that argues in one direction, but does not necessitate a particular decision." "Principles have a dimension that rules do not – the dimension of weight or importance. When principles intersect…one who must resolve the conflict has to take into account the relative weight of each…If two rules conflict, one of them cannot be a valid rule. The decision as to which is valid, and which must be abandoned or recast, must be made by appealing to considerations beyond the rules themselves."

environment under the 1982 UNCLOS, in Chapter 4 and Chapter 5, all of them will be considered as norms, and classified into two categories: principles and rules. This is a slight deviation from the conceptual structure of regime injunctions generally employed in the regime theory. This deviation can be justified in the light of the meanings of norms, principles and rules, which are similar but not identical to those defined in the regime theory, as examined above.

5.2 Introduction of a new variable

Regime theorists put much emphasis on behavioural aspects in analysing regime functioning. In their efforts to explain how independent actors cooperate under anarchy, they rely on the concept of the convergence of expectations. However important this variable might be in analysing human behaviour, it remains in a psychological dimension.[163] Expectation is a mental state which conditions human decisions and actions, but it is not a real action. In a legal regime, the most important element in behavioural aspects is the question of compliance. The variable 'compliance' is omitted in the definition of regimes, but not in the theories of regime functioning. Instead, it constitutes the core of the theories regime functioning. Therefore, in Chapter 6 dealing with procedural and behavioural aspects of regimes, compliance system is included as an additional variable.

[163] See infra. Chapter 5, 1. Theory of rationality

Chapter 3

Evolutionary mechanisms of the regime under the 1982 UNCLOS

1. Concept of evolutionary regime

1.1 Evolution of regime

As living institutions, regimes undergo continuous evolution to resolve internal problems and to adapt to the changing external situation. For Oran Young, "international regimes do not become static constructs even after they are fully articulated. Rather, they undergo continuous transformations in response to their own inner dynamics as well as to changes in their political, economic, and social environment."[1] As inner dynamics, Oran Young presents two types of internal contradictions; irreconcilable contradictions among the constituent elements, contradictions exhibiting a developmental character, deepening over time as a consequence of the normal operation of a regime. He presents also exogenous factors which may undermine the essential elements of a regime. These exogenous factors arise from societal developments external to a specific regime, such as changes in the nature and distribution of technology.[2]

Robert Keohane lays more emphasis on the exogenous factors as causes of regime evolution when he states; "regimes can be viewed as intermediate factors, or 'intervening variables,' between fundamental characteristics of world politics such as the international distribution of power on the one hand and the behaviour of states and nonstate actors such as multinational corporations on the other."[3]

External factors causing evolution of regimes are political, economic, and socio-cultural variables. For Talcott Parsons, "Changes in the external situation of a social system, either in its environmental conditions (as in the case of the depletion or discovery of some natural resource), changes in its technology which are not autonomous, changes

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[1] Oran R, Young, International Cooperation: building regimes for natural resources and the environment, Cornell University Press, Third printing, 1993, pp.95-96

[2] Oran R. Young, Ibid, pp.96-103

[3] Robert O. Keohane, After Hegemony, Cooperation and Discord in the World Political Economy, Princeton University Press, 1984, p.64

in the social situation of the system (as in its foreign relations), may be cited as the chief exogenous factors in change."[4]

A new exogenous factor of the evolution of international regimes in contemporary society is the rapidly increasing influence of epistemic communities and non-governmental organizations. For Ernest Haas, "institutionalised collaboration can be explored in terms of the interaction between changing knowledge and changing social goals."[5] Epistemic communities may orient cognitive evolutions in international regimes by providing them with changing knowledge,[6] while NGOs may exercise influence on the evolution of international regimes by providing them with changing social ideals and goals.[7] But the ideas, ideals and goals provided by epistemic communities or NGOs can contribute to the evolution of regimes only when they are embraced by political decision-makers and thereby translated into regime injunctions in the form of national laws, regulations or administrative measures, or international rules, standards, practices and procedures. In this line, Stephen Krasner points out; "For knowledge to have an independent impact in the international system, it must be widely accepted by policy makers."[8] Similarly, Emmanuel Adler argues; "At any point in time and place of a historical process, institutional actors...may be affected by politically relevant collective sets of understanding of the physical and social world that are subject to political selection processes and thus to evolutionary change."[9]

Evolution means change. In the process of continuous change, a regime may lose its integrity. To what extent can a regime change without losing its integrity? Regarding this question, Stephen D. Krasner distinguishes 'change within regime' from 'change of a regime'. For Krasner, principles and norms provide the basic defining characteristics of a regime, while there may be many rules and decision-making procedures that are

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[4] Talcott Parsons & Edward A. Shils, Toward a General Theory of Action, Transaction Publishers, abridged version, 2001, p. 232

[5] Ernest Haas, Why Collaborate? Issue Linkage and International regimes, *World Politics*, 32, 1980, p.360

[6] See Emmanuel Adler and Peter M. Haas, Conclusion: epistemic communities, world order, and the creation of a reflective research program, *IO*, Vol. 46, N°2, Spring 1992, pp.367-390

[7] See Karsten Nowrot, Legal Consequences of Globalization: The Status of Non-Governmental Organizations Under International Law, *Global Legal Studies Journal*, Indiana University, 1999, Vol. 6

[8] Stephen D. Krasner, Structural causes and regime consequences: regimes as intervening variables, in Stephen D. Krasner (ed.), International Regimes, Cornell University Press, 1983, p. 19

consistent with the same principles and norms. Therefore, changes in rules and decision-making procedures are changes within regime, whereas changes in principles and norms are changes of the regime itself.[10] This idea is not shared by all regime theorists. Robert Keohane, for example, maintains that it is a "false dichotomy between principles on the one hand and rules and procedures on the other".[11]

Krasner's distinction of 'change of regime' from 'change within regime' is conceptually meaningful in that there must be, somewhere in the course of evolution, a threshold beyond which the original integrity of the regime ceases to exist. An evolution within the threshold may be considered to be a change within regime, while evolution beyond the threshold creates a new regime. But the criterion proposed by Krasner for this distinction might be artificial, if not 'false dichotomy'. Krasner's criterion implies that the threshold resides automatically between principles/norms on the one hand and rules/decision-making procedures on the other. This criterion may easily encounter counterexamples. Some principles can be changed without causing a change in the identity of the regime. For example, the introduction of the precautionary approach in the high seas fishing regime is a change in principle but it does not result in a change in the general high seas regime. Being new, but not contrary to the existing principles, it can be a factor of development of the regime in the same line with the existing set of principles. In some cases, a change in decision-making procedures may result in a change of regime. For instance, if the decision-making procedures in the Security Council were changed into the decision by consensus, or the simple majority rule without distinction between permanent and non-permanent members, such a change in decision-making procedures would result in a change of regime.

Each regime has defining attributes, which determine its identity. Each regime may also have occasional attributes which are not essential for the formation or maintenance of regime's identity. It seems an oversimplification to say that principles and norms are defining attributes, and rules and decision-making procedures are occasional attributes. The identity of a given regime should be recognized in the light of

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[9] Emmanuel Adler, Cognitive Evolution: A Dynamic Approach for the Study of International Relations and Their Progress, in Emmanuel Adler and Beverly Crawford, (ed.), Progress in Postwar International Relations, Columbia University Press, 1991, p. 47

[10] Stephen D. Krasner, op. cit, pp.3-5

overall characteristics generated by the combination of the whole set of principles, norms, rules and decision-making procedures.

Most regime theorists concentrate their attention on changes in regime injunctions. However, changes in other elements of regimes such as issue-area, regime members and convergence of expectations may entail 'change of regime'.

If there is a change in the issue-area, regime may change as Friedrich Kratochwil points out; "regime change may also result from extension or restriction of the *scope* of rules applicable in the issue-area."[12] The evolution of the European Union is an example of the change of regime through the extension of the issue-area.[13]

A regime may change when its members change. For example, the regime under the Charter of the United Nations started as a regime among victorious powers and their allies in the Second World War, but has become a universal regime by the extension of its members. The regime under the 1982 UNCLOS is undergoing an evolution with the increase in its Parties. When it entered into force in 1994, there were 60 States Parties. At that moment it was difficult to regard it as the basis of a universal regime. Now that an absolute majority of the States of the world have become parties, it constitutes undoubtedly the legal basis of a universal regime.

A regime may change when there is a fundamental change in the convergence of expectations among regime members. When the convergence of expectations weakens, the regime may weaken or degenerate into desuetude. The rise and fall of the regime under the Warsaw Pact is an example of such changes of regime. In 1955, Eastern European States established the regime under the Warsaw Pact with converging expectations of mutual assistance based on the communist solidarity under the leadership of the Soviet Union in the cold war context. By the collapse of the Soviet Union and

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[11] Robert O. Keohane, After hegemony, op.cit, p. 59

[12] Friedrich Kratochwil, The Force of prescriptions, *IO*, 38, 4, Autumn 1984, p. 687
Kratochwil presents an example: "taxing information and treating it as if it were a "good" – changing the scope of applicable revenue laws or tariff statutes – might fundamentally alter not only the nature of transborder data flows but also the governing regime."

[13] Starting from the limited issue of cooperation in the field of coal and steel, the issue-area of the European Union has been enlarged to the whole area of economic issues and the security and defence issues and is further extending to the highly political issues, such as the European Constitution. Through the extension of the issue-area, the nature of the original European Coal and Steel Community has completely changed.

The expectations of mutual assistance, which were once converging, have lost the ideological foundation, and thereby the regime has degenerated into non-existence.[14]

1.2 Evolution of law and legal regimes

As ICJ has stated, international law undergoes continuous evolution.[15] In a sociological perspective, law is a social phenomenon and evolves when its social context changes. Judge Rosalyn Higgins, perceiving international law as a process, maintains; "if international law was just 'rules', then international law would indeed be unable to contribute to, and cope with, a changing political world. To rely merely on accumulated past decisions (rules) when the context in which they were articulated has changed – and indeed when their content is often unclear – is to ensure that international law will not be able to contribute to today's problems and, further, that it will be disobeyed for that reason."[16] In the same line, Myres McDougal underlines the evolutionary aspect of the law of the sea, asserting that the international law of the sea is not a mere static body of rules but is a whole decision-making process.[17] But is it correct to say that rules are always static?[18]

In a regime founded on a treaty, substantive and procedural rules are crystallized into the treaty text. It is natural that the evolution of the treaty entails the evolution of the regime founded thereupon.

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[14] Warsaw Treaty of Friendship, Cooperation, and Mutual Assistance was concluded in May 14, 1955 among the Soviet Union, Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland and Romania. After the democratic revolutions of 1989 in Eastern Europe, the Warsaw Pact became moribund and was formally declared "nonexistent" on July 1, 1991, at the final summit meeting of Warsaw Pact leaders in Prague. See Britannica 2001

[15] Barcelona Traction Case, (Second phase), *ICJ Reports* 3, p. 33

[16] Rosalyn Higgins, Problems & Process, International Law and How We Use it, Oxford University Press, 1994, p. 3

[17] Myres McDougal, The Hydrogen Bomb Tests and the International Law of the Sea, *AJIL*, 1955, 49, p.356 McDougal continues; "As such a process, it is a living, growing law, grounded in the practices and sanctioning expectations of nation-state officials, and changing as their demands and expectations are changed by the exigencies of new interests and technology and by other continually evolving conditions in the world arena."

[18] Hart recognizes the *static* character of the rules as a defect in a simple social structure. But Hart proposes the introduction of 'rules of change' as a remedy for the *static* quality of the regime of primary rules. See H.L.A. Hart, The Concept of Law, Second edition, Oxford University Press, 1997, pp.92-96

The regime of the law of the sea under the 1982 UNCLOS has undergone such evolution under the influence of exogenous factors and internal contradictions. The entry into effect of the Convention was a decisive phase in the process of the evolution of the regime of the law of the sea. This evolution was realized under the impact of major exogenous factors, such as the development in fishing and sea-bed mining capacity, the increased number and ever stronger voices of developing States armed with new ideologies, in particular that of the New International Economic Order, and the rush for a wider *mare nostrum* by many coastal States. After the entry into force of the Convention, new exogenous factors have continuously emerged, such as the growing concern about the deterioration of the marine environment, the increasing human consciousness of the interdependence between the atmospheric phenomena and the global ocean, the further development of marine science and technology, the increasing influence of non-governmental entities, etc.

From the moment of its adoption, the Convention bore many internal contradictions, which might become causes for the evolution of the regime. The most critical internal contradiction was the conflict of interests between developing States and major industrial States in respect of sea-bed activities in the Area. This contradiction could be removed, if not completely, only by adopting the 1994 Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (hereinafter referred to as 'the 1994 Agreement). Apart from this issue, a number of other internal contradictions are latent in the provisions formulated in ambiguous terms as a result of compromise and package deal. For example, the imprecise criteria for the drawing of straight baselines,[19] the equivocal rules for the delimitation of

[19] In the Anglo-Norwegian Fisheries case (1951), the ICJ admitted that the Norwegian straight baseline system was in conformity with international law and gave some rules formulated in abstract terms. The rules enunciated by the Court for the drawing of straight baselines, after long discussions in the ILC, were incorporated in the 1958 Territorial Sea Convention, and adopted also in Article 7 of the 1982 UNCLOS. The rules originally formulated by the Court and introduced into the Convention are not unclear conceptually, but because of the absence of any numerical or cartographic criteria, these rules can be very flexibly interpreted. State practices are so disparate. For example, the United States lays down guidelines for evaluating straight baselines providing strict criteria for deeply indented coastlines and fringing islands. On the contrary, some States apply very elastic criteria in drawing their straight baselines, by drawing, for instance, straight baselines exceeding one hundred nautical miles, while others have drawn straight baselines which may be seen as deviated from the general direction of the coastline. See United States Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, Limits in the Seas No.106.

EEZ and continental shelf,[20] and the ambiguous provisions relating to the right of the coastal State in respect of straddling fish stocks beyond and adjacent to the EEZ[21] are some examples, among others, of such contradiction-bearing provisions. In text, conflicting interests could be buried in intentionally equivocal provisions. In concrete reality, internal contradictions dormant in equivocal provisions may arise as acute causes of dispute. If such internal contradictions can be resolved in an appropriate way through negotiation or adjudication, they can entail a smooth evolution of the regime. If such contradictions create a deadlock situation, they may cause instability or disruption of the regime.

Under the pressure coming from latent internal contradictions and newly arising external factors, the regime for the protection of the marine environment under the 1982 UNCLOS is in the process of continuous evolution. How can such a regime based on the treaty text evolve while the text remains unchanged? Such a regime can be considered, *prima facie*, to be more rigid than a regime formed on the basis of customary rules. For Baxter, "customary law is flexible and adaptable law, responsive to changes in international politics, to the advancement of technology, and to changes in the economic and social structure of the world. Treaties are static and must be changed deliberately by a formal procedure calling for a large amount of international co-operation."[22] According to this statement, customary international law seems inherently more evolutionary than conventional international law.[23] Considering that the text of a given treaty remains unchanged unless amended or terminated, Baxter's argument might be generally valid, but not always so. There are some types of treaties which are well prepared to evolve, readily adapting to the changing international environment. The 1982 UNCLOS is such a treaty containing a variety of mechanisms suitable for the evolution of the regime, as follows.

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[20] As a result of the compromise between arguments for the equidistance principle and arguments for the equitable principle, the wording of Articles 74 and 83 on the delimitation of the EEZ and the continental shelf is so imprecise that these provisions provide only a guiding principle rather than operational criteria.
[21] Article 63, para 2
[22] R.R. Baxter, Treaties and Custom, The Hague Academy, *Recueil des Cours* 1970-I, p. 97
[23] Michael Byers maintains that treaty rules are sometimes more difficult to change. Michael Byers, Custom, Power and the Power of Rules, Cambridge University Press, 1999, p.125

2. Mechanisms of evolution

2.1 Evolution by amendment

In a regime based on a formal treaty, amendment is a typical built-in mechanism of evolution, since amendment is a means of self-transformation. In the 1982 UNCLOS, the provisions for amendment are formulated with a view to maintaining the balance between its integrity and its adaptability to the changing environment. It can be amended on rather hard conditions. First, it is frozen for ten years from the date of its entry into force.[24] Second, "the amendment conference should make every effort to reach agreement on any amendment by way of consensus and there should be no voting on them until all efforts at consensus have been exhausted."[25] It does not stipulate the procedures to be applied when a voting is inevitable. However, there are two indications; On the one hand, the decision-making procedure applicable at the amendment conference shall be the same as that applicable at the Third United Nations Conference on the Law of the Sea. On the other hand, according to the rules of procedures of the Meeting of the States Parties to the Law of the Sea Convention (SPLOS) stipulates, a decision on a question of substance shall be made, after the exhaustion of all efforts at consensus, by a two-third majority of the States Parties present and voting, provided that such majority includes a majority of the States Parties participating in the Meeting.[26]Since an amendment is a 'question of substance', this rule can be applied to the decision on amendment. But SPLOS is not an amendment conference as defined in the amendment clauses of the Convention. Although it is not clear therefore whether the rules of procedures of SPLOS shall be applicable at the amendment conference, it can be reasonably anticipated that an amendment conference will make decision by consensus in principle, and by a two-third majority after the exhaustion of all efforts to reach a consensus. [27]

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[24] Article 312, para 1

[25] Article 312, para 1, para2

[26] Rules of Procedures of SPLOS/2/Rev.3, Rule 53. Rules of Procedures of SPLOS (States Parties to the Law of the Sea Convention) do not lay down the procedure for amendment. But, considering that an amendment is a question of substance *par excellence*, Rule 53 stipulating two-thirds majority rule can be applied to the procedure of amendment.

[27] According to Article 314, amendments to the provisions which are exclusively related to activities in the Area will be decided in ISBA. In Article 159 on the composition, procedure and voting of the Assembly of

The 1982 UNCLOS provides also the simplified procedure for amendment, in which the proposed amendment can be adopted if there is no written objection from any State Party within a period of 12 months from the date of circulation of the communication of amendment proposal.[28]

Considering these procedures for amendment, the 1982 UNCLOS seems to lay more weight on the side of integrity than on the side of evolution. To date, no amendment has been adopted through the procedures set forth in the Convention.

2.2 Evolution by additional agreements

When a treaty contains a serious internal conflict of interests or ambiguity, ensuing problems may be resolved either through amendments or subsequent agreements. In the case of the 1982 UNCLOS, the procedures for formal amendments are relatively rigid. International society has resolved two kinds of controversial issues by adopting successive agreements relating to the implementation of the Convention; one on the issue of sea-bed mining in the Area, the other on the issue of the conservation of straddling fish stocks and highly migratory species.

< The Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982>

The 1994 Agreement was adopted on 28 July 1994 and entered into force on 28 July 1996 with the objective of settling internal contradictions of the regime in respect of sea-bed activities in the Area. In spite of the efforts of the international community to harmonize the interests of all States through package deal in the course of negotiation of the 1982 UNCLOS, the conflict of interests between developing States and major industrial States in respect of the sea-bed activities jeopardized the establishment of the general regime of the law of the sea. In the negotiation and adoption of the text, major

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ISBA, decisions on questions of substances shall be taken by a two-thirds majority of the members present and voting, provided that such majority includes a majority of the members participating in the session. In the Assembly of ISBA, consensus or general agreement is not required.

[28] Article 313

industrial States were outnumbered by developing States. But regime could not start up without the participation of the industrial States, fewer in number but greater in real power. This conflict of interests has been reconciled by adopting the 1994 Agreement, in which some adjustments are made to the sea-bed regime in such a way as to reflect the position of the industrial States.

There are some peculiar aspects in the relationship between the 1982 UNCLOS and the 1994 Agreement due to the fact that the latter brought some substantive modifications to the former before the former entered into force. [29] Article 2 of the 1994 Agreement stipulates; "The provisions of the Agreement and Part XI of the Convention shall be interpreted and applied as a single instrument, and in the event of any inconsistency the provisions of the Agreement shall prevail."[30] In form, the 1994 Agreement is not an amendment to the 1982 UNCLOS, because it was not adopted in accordance with the amendment procedures. The procedure of adoption of the 1994 Agreement does not conform to the general rule regarding the amendment of treaties laid down in the 1969 Vienna Convention on the Law of Treaties, Article 39: "A treaty may be amended by agreement between the parties." Clearly, the 1994 Agreement was not adopted by agreement between the parties to the 1982 UNCLOS, because there were no parties to the Convention at the moment of the adoption of the Agreement.[31] The 1994 Agreement is not a protocol to the 1982 UNCLOS, because some of the provisions of the former supersede those of the latter. Being neither amendment nor protocol, the 1994 Agreement can be regarded as a "successive treaty relating to the same subject-matter" in the meaning of Article 30 of the 1969 Vienna Convention.

In relation to the application of the 1994 Agreement, some legal questions may arise from the fact that the Parties to the Agreement are not the same as the Parties to the 1982 UNCLOS. As of 9 December 2002, the 1994 Agreement has 111 Parties, while the

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[29] See Renate Platzöder, Substantive Changes in a Multilateral Treaty before its Entry into Force: The Case of the 1982 United Nations Convention on the Law of the Sea, *EJIL,* vol.4, 1993, N°3

[30] Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, Article 2

[31] There were many States which had ratified the 1982 UNCLOS before the date of adoption of the 1994 Agreement. But these States were not still parties to the 1982 UNCLOS, because it did not yet enter into effect at that moment.

1982 UNCLOS has 142 Parties.[32] So, there are 31 States which are Parties to the 1982 UNCLOS but not Parties to the 1994 Agreement. Article 30 of the 1969 Vienna Convention on the Law of Treaties lays down general rules on the application of successive treaties relating to the same subject-matter.[33] The relationship between the 1982 UNCLOS and the 1994 Agreement is more complicated than that envisaged in Article 30 of the 1969 Vienna Convention, due to the fact that the 1994 Agreement was adopted before the 1982 UNCLOS entered into force. The Parties to the 1982 UNCLOS can be classified into two categories; 1) Parties to both the 1982 UNCLOS and the 1994 Agreement, 2) Parties to the 1982 UNCLOS, but non-Parties to the 1994 Agreement.

For the States which become Parties to the Convention after the adoption of the 1994 Agreement, the situation is clear. The text of the 1982 UNCLOS and that of the 1994 Agreement are presented as a single instrument. Furthermore, according to Article 4, paragraph 1 and 2 of the 1994 Agreement, "After the adoption of this Agreement, any instrument of ratification or formal confirmation of or accession to the Convention shall also represent consent to be bound by this Agreement" and "No State or entity may establish its consent to be bound by this Agreement unless it has previously established or establishes at the same time its consent to be bound by the Convention." In fact, 77 States and the EU became Parties to the Convention and to the 1994 Agreement at the same date (during the period running from the date of adoption of the Agreement to the end of 2002), having full knowledge of the relationship between the two instruments.[34]

For the States which had already ratified the 1982 UNCLOS before the adoption of the 1994 Agreement, the situation is complicated. These States saw the 1982 UNCLOS being modified after they had ratified it. The content of the modification made by the 1994 Agreement can be acceptable for some States but unacceptable for others. Among the 63 States which had ratified the 1982 UNCLOS before the adoption of the

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[32] Status of the United Nations Convention on the Law of the Sea and related Agreements as at 9 December 2002, Division for Ocean Affairs and the Law of the Sea, www.un.org/Depts/los/los94st.htm

[33] Article 30, para.4 stipulates as follows:

4. When the parties to the later treaty do not include all the parties to the earlier one:
   (a) as between States parties to both treaties the same rule applies as in paragraph 3;
   (b) as between a State party to both treaties and a State party to only one of the treaties, the treaty to which both States are parties governs their mutual rights and obligations.

[34] The Status of the United Nations Convention on the Law of the Sea and related Agreements as at 9 December 2002. Division of Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations.

1994 Agreement, 33 became Parties to the Agreement, while 30 remain non-Parties as of 9 December 2002.[35]

Regarding the attitude of these 30 States which ratified the 1982 UNCLOS but still remain non-Parties to the Agreement (they are all developing States), it is not clear whether they remain non-Parties to the Agreement as persistent objectors or simply they are delaying the procedure of ratification.[36] For them, the original text of the 1982 UNCLOS remains unchanged[37] and the 1994 Agreement is a *pacta tertiis*, which is not binding upon them.[38] In theory, the relationship between these States and the States which are Parties to both the 1982 UNCLOS and the 1994 Agreement may be governed in accordance with Article 30, paragraph 4 (b) of the Vienna Convention, which stipulates "as between a State party to both treaties and a State party to only one of the treaties, the treaty to which both States are parties governs their mutual rights and obligations." In the case of a treaty dealing with individual interests, such as commercial activities or treatment of nationals, this provision of the Vienna Convention can regulate problems arising from the difference of its Parties from those to another treaty. Such a treaty, even though it is multilateral, governs a series of bilateral relations. It can function like a bundle of bilateral treaties. But in the case of a treaty dealing with global commons, Article 30, paragraph 4 (b) of the Vienna Convention is not sufficient to regulate the problems arising between parties and non-parties to a treaty. In dealing with the common heritage of mankind, there can be only one regime because the relations cannot be divided into a series of bilateral relations. For example, it is not possible to apply the production policy defined in Article 151 of the 1982 UNCLOS for the States which are

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[35] The Status of the United Nations Convention on the Law of the Sea and related Agreements as at 9 December 2002. Division of Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations.

[36] There is a trend that the number of these States is decreasing. Among the States which had ratified the 1982 UNCLOS before the adoption of the 1994 Agreement, five States (Costa Rica, Tunisia, Kuwait, Cameroon, Cuba) have ratified the Agreement during the year 2002.

[37] Tullio Treves has pointed out: "...il n'en reste pas moins possible qu'après l'entrée en vigueur de l'Accord certains Etats restent liés à la Convention dans son texte originaire, puisqu'il n'est pas prévu, et il serait imprudent de prévoir, que l'entrée en vigueur de l'Accord exige l'expression du consentement à être lié par tous les Etats ayant déjà ratifié la Convention. Il est ainsi en principe possible, même probable, que se vérifie une coexistence entre deux Conventions, celle dans le texte de 1982 et celle dans le texte de 1994. » Tullio Treves, l'Entrée en vigueur de la Convention des Nations Unies sur le Droit de la Mer et les Conditions de son universalisme, *Annuaire Français de Droit International*, XXXIX – 1993, Editions du CNRS, Paris, pp.871-2

Parties thereto but non-Parties to the 1994 Agreement on the one hand, and the production policy redefined in Section 6 of the 1994 Agreement for the States which are Parties to both instruments on the other. The International Sea-Bed Authority (ISBA) will apply the policy as defined in the 1994 Agreement, in case of the inconsistency between the provisions of the 1982 UNCLOS and those of the 1994 Agreement. In theory, the States which are Parties to the 1982 UNCLOS but non-Parties to the 1994 Agreement have a legal basis for the argument that all the provisions of the 1982 UNCLOS remain unchanged and valid in relation to them. Thus, the uniform application of the 1982 UNCLOS and the 1994 Agreement remains questionable, notwithstanding the provision of Article 2 of the 1994 Agreement stipulating that both instruments shall be interpreted and applied as a single instrument. This means that the conflicting interests around the deep sea-bed mining are not still completely reconciled. Before the adoption of the 1994 Agreement, some major industrial States were not satisfied with the 1982 UNCLOS. Now, a group of developing States seem to remain unsatisfied with the 1994 Agreement. In reality, it is difficult to imagine a situation where these States could block the functioning of the sea-bed regime under ISBA.

In content, the 1994 Agreement can be regarded as an amendment to the 1982 UNCLOS in that some of the provisions of the former have superseded the relevant provisions of the latter.[39] The 1994 Agreement contains few provisions relating to the protection of the marine environment. But the real contribution of the 1994 Agreement to the regime for the protection of the marine environment resides in the fact that it has cleared the way for the creation of the new general regime of the law of the sea, in which is embedded the regime for the protection of the marine environment.

<The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks >

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[38] Jonathan Charney argues that, besides *jus cogens*, a doctrine governing the common heritage of mankind might be an exception to the persistent objector rule. See Jonathan I. Charney, Universal International Law, *AJIL*, 1993, Vol. 8, p. 541

[39] 1994 Implementing Agreement, Section 6 Production Policy, paragraph 7: "The provisions of article 151, paragraph 1 to 7 and 9, article 192, paragraph 2(q), article 165, paragraph 2 (n), and Annex III, article 6, paragraph 5, and article 7, of the Convention shall not apply."

The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (hereinafter referred to as "the 1995 Agreement") was adopted on 4 December 1995 and entered into force on 11 November 2001,[40] as a subsequent instrument aimed at settling the problems arising from the ambiguity and controversy around the provisions of the 1982 UNCLOS relating to the straddling fish stocks and highly migratory species.

Articles 63 and 64 of the 1982 UNCLOS lay down general guidelines for the conservation of straddling fish stocks and highly migratory species. These articles call on coastal States and States fishing such species to cooperate directly or through appropriate subregional, regional or international organizations for the conservation of such species. Conscious of the problem latent in the incongruence between the boundary of EEZ and the life space of these species, Articles 63 an 64 indicate some conservation measures applicable to the area "beyond and adjacent" to the EEZ, or "within and beyond" EEZ. For these species, a regime which covers their life space, transcending the jurisdictional demarcation between EEZ and the high seas will be more effective than a pure EEZ fishing regime and/or a high seas fishing regime. Articles 63 and 64 of the 1982 envisage a move in this direction, but these provisions lay down only a general framework, without providing any concrete rules and standards. The 1992 UNCED, drawing attention to the issue of the conservation of these species, called on States to convene, as soon as possible, an intergovernmental conference under United Nations auspices, taking into account relevant activities at the subregional, regional and global levels, with a view to promoting effective implementation of the provisions of the United Nations Convention on the Law of the Sea on straddling fish stocks and highly migratory fish stocks.[41] In response of this call, the General Assembly of the United Nations decided in 1992 to convene an intergovernmental conference on straddling fish stocks and highly migratory fish stocks.[42] The 1995 Agreement is the outcome of the conference thus convened.

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[40] See the Status of the Convention and the related Agreements, as at 9 December 2002, Division of the Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations.
[41] Agenda 21, Chapter 17, section 17.45, 17.49, 17.78
[42] UNGA Resolution A/RES/47/192 adopted on 22 December 1993

This 1994 Agreement is not entitled 'protocol' to the 1982 UNCLOS, but, considering the relationship between the two instruments, in form and in substance, the former is similar to a protocol to the latter.

In form, the 1995 Agreement is subject to the 1982 UNCLOS. Article 4 of the Agreement defines its relationship with the 1982 UNCLOS; "Nothing in this Agreement shall prejudice the rights, jurisdiction and duties of States under the Convention. This Agreement shall be interpreted and applied in the context of and in a manner consistent with the Convention." This is one of the relations foreseen in Article 30, paragraph 2 of the 1969 Vienna Convention on the Law of Treaties: "When a treaty specifies that it is subject to, or that it is not to be considered as incompatible with, an earlier or later treaty, the provisions of that other treaty prevail." This relationship differs from the relationship between the 1994 Agreement and the 1982 UNCLOS. While the 1994 Agreement prevails over the 1982 UNCLOS, the 1995 Agreement is subject to the Convention. Another difference between the 1995 Agreement and the 1994 Agreement in their respective relationship with the 1982 UNCLOS is that a State may become a party to the 1995 Agreement without being a party to the 1982 UNCLOS,[43] whereas no State or entity may establish its consent to be bound by the 1994 Agreement unless it has previously established or establishes at the same time its consent to be bound by the 1982 UNCLOS.[44] In this sense, the 1995 Agreement can be qualified as a stand alone agreement, as some authors so state.[45]

In substance, the 1995 Agreement introduces some important evolutionary elements into the high seas fishing regime. The 1995 Agreement is entitled "Implementing Agreement", but there are some provisions which go beyond the objective of implementing the corresponding provisions of the 1982 UNCLOS. Erik Franckx classifies the provisions of the 1995 Agreement into three categories; the provisions

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[43] Actually there are some States, such as Canada, Iran, USA, which have ratified the 1995 Agreement without becoming parties to the Convention. See the Status of the Convention and the related Agreements, as at 31 July 2001, Division of the Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations.

[44] The 1994 Agreement, Article 4, para.2

[45] For Judge D.H. Anderson, the 1995 Agreement is a 'stand alone' agreement in that a state may become a party to the Agreement without becoming a party to the Convention and vice versa. D.H. Anderson, 'The Straddling Stocks Agreement of 1995-An Initial Assessment', 1996, *ICLQ* 463. In fact, some States, such as Canada, Iran, USA have ratified the 1995 Agreement without becoming party to the Convention, as of 22 June 2001.

which are fully consistent with the letter and the spirit of the 1982 UNCLOS (*propter or secundum legem*), the provisions which go beyond the 1982 UNCLOS but are nevertheless in line with the spirit of the 1982 UNCLOS since they represent a natural development of the latter document (*praeter legem*), the provisions which are plainly inconsistent with the 1982 UNCLOS (*contra legem*).[46] There are many others who believe that the 1995 Agreement does not merely implement the 1982 UNCLOS, but goes beyond its framework.[47]

The strong enforcement system set forth in Part VI of the 1995 Agreement is one of the progressive elements which go beyond the ambit of the 1982 UNCLOS. In particular, Article 21 introduces some problematic rules in relation to the principle of the flag state jurisdiction, by empowering any State Party participating in a subregional or regional fisheries management organization or arrangement to board and inspect fishing vessels flying the flag of another State Party to this Agreement, whether or not such State Party is also a member of the organization or a participant in the arrangement.[48] The right to board and inspect vessels on the high seas by authorities of States other than the flag State is an important new element which goes beyond the principle of the flag State jurisdiction in the high seas confirmed in the 1982 UNCLOS. If such a right is exercised among members of subregional or regional members *inter se*, it can be explained in the light of the freedom of States to make agreement to modify multilateral treaties between certain of the parties only, as recognized in the 1969 Vienna Convention on the Law of Treaties and the Convention.[49] However, Article 21, paragraph 1 of the 1995 Agreement goes even further. It authorizes a member of a regional regime to board and inspect fishing vessels flying the flag of another State Party to the Agreement, *whether or not*

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[46] Erik Franckx, *Pacta Tertiis* and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation & Management of Straddling fish stocks & Highly migratory fish stocks, FAO Legal papers Online no. 8, June 2000

[47] Laurent Lucchini/ Michel Voelckel, Droit de la mer, Tome 2, Volume 2, p. 690 : « L'Accord feint sans doute de se soumettre à la CMB (Convention de Montego Bay), mais *il va au-delà*. Son autonomie par rapport à elle est réelle. Sous le prétexte, en effet, de donner plus de substances au devoir de coopération, il transforme, à différents égards…le droit des pêches en haute mer. Il est hautement significatif, au demeurant, qu'aucune référence ne soit faite au principe de liberté de la pêche en haute mer pourtant rappelé aux Articles 87 et 116 de la CMB.

[48] Article 21, para.1

[49] The 1969 Vienna Convention, Article 41, The 1982 UNCLOS, Article 311, para.3. See below section 3.2.2.6

such State party is also a member of the organization or a participant in the arrangement. At first glance, this provision seems to be contrary to the *pacta tertiis* rule. But it is not necessarily so, since this provision is binding only upon the States Parties to the 1995 Agreement. If a member State of a given subregional or regional regime exercises the right of boarding and inspecting fishing vessels flying the flag of another State which is not a member of that regime, it is not contradictory to the *pacta tertiis* rule, insofar as both States are Parties to the 1995 Agreement. In such a case, the right of boarding and inspection by a member of a subregional or regional regime can be exercised on the basis of the 1995 Agreement. Even though the right of the flag State in the high seas is a longstanding principle of customary international law codified into the Convention, a State is free to accept some restriction to the jurisdiction over the vessels flying its flag by giving consent to be bound by the 1995 Agreement. This means that such right cannot be exercised *vis-à-vis* the States which are non-Parties to the 1995 Agreement. When non-Parties to the 1995 Agreement may stay beyond this stringent enforcement rule, the real issue around this point is a practical problem of how to deal with free riders, rather than a legal problem.

The reinforcement of port State jurisdiction in respect of fisheries is another evolutionary element in the high seas fishing regime. The 1995 Agreement lays down the right and duty of port State to take measures to promote the effectiveness of subregional, regional and global conservation and management measures. In particular, it empowers a port State to inspect documents, fishing gear and catch on board fishing vessels, when such vessels are voluntarily in its ports or at its offshore terminals.[50] This is a bold departure from the traditional international rules and standards and the relevant provisions of the 1982 UNCLOS, which provide the port State jurisdiction only in respect of the port entry requirements.[51] The 1995 Agreement enlarges the *ratione materiae* of port State jurisdiction by providing the right and duty to exercise port State jurisdiction "to promote the effectiveness of subregional, regional and global conservation and management measures." This is an important innovative step that may entail some legal problems. The provisions of the 1995 Agreement on port State jurisdiction go beyond the

[50] Article 23
[51] See infra. Chapter 5

relevant rules laid down in the 1982 UNCLOS. Do they so in line with the spirit of the 1982 UNCLOS (*praeter legem*) or in contradiction therewith (*contra legem*)? In this sense, the provisions of the 1995 Agreement enlarging the scope of port State jurisdiction can be regarded as *contra legem* vis-à-vis the 1982 UNCLOS. But this deviation from the Convention can be justified in two ways. First, the 1995 Agreement is an *inter se* agreement vis-à-vis the Convention. The port State jurisdiction as provided in the 1995 Agreement is applicable to the fisheries issues between its Parties, in conformity with Article 34 of the 1969 Vienna Convention on the Law of Treaties. In case a vessel flying the flag of a State which is Party to the 1982 UNCLOS but non-Party to the 1995 Agreement enters, after having violated fishing regulations under the 1995 Agreement on the high seas, into a port of a State which is Party to both instruments, the vessel should be treated in accordance with the provisions of the 1982 UNCLOS. Second, as between the Parties to both the 1982 UNCLOS and the 1995 Agreement, there can be an argument that the latter is *lex specialis* to the former.

Another progressive element in the 1995 Agreement is the introduction of new principles of international environmental law which have emerged after the adoption of the 1982 UNCLOS, in particular the precautionary principle.

The 1982 UNCLOS, adopted before the advent of the precautionary principle in international law, does not explicitly articulate it.[52] The basic philosophy embodied in the Convention in respect of the protection of the marine environment is the preventive principle, as States are required to take measures to *prevent, reduce and control* pollution of the marine environment, in many provisions.[53] The 1995 Agreement explicitly embraces the precautionary approach. It requires States to apply the precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment,[54] and calls on States to be cautious when information is uncertain, unreliable or inadequate, and not to use the absence of adequate scientific information as a reason to postponing or failing to take conservation and management

[52] For the precautionary principle, see infra. Chapter 4.

[53] In Articles 194, 195, 196, 201, 202, 203, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 220, 222, it is stipulated that prescriptive or enforcement measures should be aimed at the prevention, reduction and control of marine pollution.

measures.[55] In addition, the 1995 Agreement lays down some detailed guidelines for the implementation of the precautionary approach.[56]

The precautionary approach introduced in the 1995 Agreement goes beyond the preventive principle set forth in 1982 UNCLOS. The preventive principle and the precautionary principle are both along the same lines. But the preventive principle and the precautionary principle are different paradigms of behaviour in dealing with risk and uncertainty.[57] Vis-à-vis the 1982 UNCLOS, the provisions of the 1995 Agreement requiring the precautionary approach can be regarded as *praeter legem*, extending the attitude required by the principle of prevention to a certain category of risks, which are uncertain but may result in serious or irreversible damage, if they occur.

Thus, the 1995 Agreement contains some provisions which go beyond the 1982 UNCLOS, some of them are an extension in line with the principles of the 1982 UNCLOS, while others deviate therefrom. It is by so doing that the 1995 Agreement contributes to the evolution of the regime under the 1982 UNCLOS. If all rules and standards were always strictly contained within the established legal frame, there would be little room for evolution.

< Other additional agreements>

The International Conference on Responsible Fishing held at Cancun in 1992 resulted in the adoption, at the FAO Conference in 1994, of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (hereinafter referred to as 'Compliance Agreement'). The Compliance Agreement is designed to specify flag States' responsibility in respect of fishing vessels entitled to fly their flag and operating on the high seas. This Agreement is followed by the adoption of the Code of Conduct for Responsible Fisheries (hereinafter referred to as 'Code of Conduct') at the FAO Conference in 1995. The Code of Conduct places emphasis on the conservation of the aquatic ecosystem, the maintenance of biodiversity and precautionary approach. The Compliance Agreement and the Code of Conduct refer

[54] Article 6, para 1
[55] Article 6, para 2
[56] Article 6, para 3 to 7

to the 1982 UNCLOS as the legal basis and underline their conformity therewith. They contribute to the evolution of the regime under the 1982 UNCLOS by supplementing the rules and standards as regards the exercise of flag State jurisdiction and by introducing some new elements into the regime under the 1982 UNCLOS.

2.3 Evolution by interpretation and re-interpretation

2.3.1 Concept of evolutionary interpretation

Whereas the text of a treaty remains unchanged unless amended or terminated, its meaning may vary according to interpreters and with the passage of time. The vitality of a treaty as a "living instrument"[58] arises from its dynamic adaptability to the environment. The meaning of a treaty text is not free from the influence of subjectivity and temporality.

The 1969 Vienna Convention provides a general rule of interpretation: "A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose."[59]

This rule leaves room for flexibility in interpreting a treaty. Neither "the ordinary meaning" of the terms nor "the context" of the treaty can be identically perceived by all interpreters. The function of legal interpretation is the choice among the plurality of conceivable meanings of a given text.[60] A certain degree of subjectivity is inevitable in interpreting a text, however strong the fidelity to the written text might be.[61] Subjectivity

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[57] See infra. Chapter 4.

[58] In the Tyrer case, the European Court of Human Rights asserts that the Convention is a living instrument which must be interpreted in the light of present-day conditions. The European Court of Human Rights, Judgment of the Court, 25 April 1978, Court A, Vol. 26, para.31

[59] Article 31, para 1

[60] Hans Kelsen states; "The linguistic sense of the norm is not unequivocal, and whoever is to apply the norm is faced with several possible readings…In terms of positive law, there is simply no method according to which only one of the several readings of a norm could be distinguished as 'correct – assuming, of course, that several readings of the meaning of the norm are possible in the context of all other norms of the statute or of the legal system…Every method of interpretation developed thus far invariably leads merely to a possible result, never to a single correct result.", Hans Kelsen, Introduction to the problems of legal theory, translated by Bonnie Litschewski Paulson and Stanley L. Paulson, Oxford University Press, 1992, p. 79 and 81

[61] H.L.A. Hart asserts; "In most important cases there is always a choice. The judge has to choose between alternative meanings to be given to the words of a statute or between rival interpretations of what a precedent 'amounts to'." H.L.A. Hart, The Concept of Law, Oxford University Press, Second edition, 1997, p. 12

of interpretation has its axiological as well as cognitive aspects. When the Vienna Convention stipulates: "A treaty shall be interpreted...in the light of its object and purpose", it requires an axiological rationality in interpreting a treaty. Teleological interpretation is apt to be oriented by the value system of each interpreter. The task of identifying the real meaning of the text, i.e. the true intention of the parties, requires cognitive rationality which can be achieved through logical reasoning on the basis of relevant knowledge. But however rational human cognition might be, it is not entirely free from subjectivity inherent in human perception, as modern theories of perception lay emphasis on the fact that all human perception is a sort of mental construction on the basis of sensory stimuli.[62] In particular, perception of highly abstract objects such as legal norms is *a fortiori* a mental construction.

Not only the ordinary meaning of the terms, but also the assessment of the "context" of a given treaty is subject to the intervention of subjectivity to a certain degree. In particular, in the myriad of rapidly increasing international legal instruments with varying degrees of binding force, the boundary of the set of legal instruments relating to a given treaty is to be determined by the perspective of each interpreter.

Furthermore, the interpreter has a wide margin of freedom in ascertaining the object and purpose of the treaty, which are generally formulated in abstract and sublime terms.

Considering the inevitable subjectivity in interpreting a treaty, it is not totally absurd to say that interpretation of law is a kind of creation of law.[63]In particular, Hans Kelsen underlines "the relativity of the contrast between creating and applying the law" in the sense that "...legislation (the creation of general norms) represents the application of the constitution; judicial decisions and administrative acts (setting individual norms) represent the application of statutes; and the realization of coercive acts represents the application of judicial decisions and administrative directives."[64]

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[62] Maurice Reuchlin, Psychologie, Presses Universitaires de France, 13e édition, 1998, p. 91 « Le percept est une construction, un ensemble d'informations sélectionnées et structurées en fonction de l'expérience antérieure, des besoins, des intentions de l'organisme impliqué activement dans une certaine situation. »

[63] Jean Carbonnier, Sociologie juridique, Presses Universitaires de France, Edition Quadrige, 1994, p. 267

[64] Hans Kelsen, op.cit., 1992, p. 70

In the case of international law, Kelsen regards the legal norms created by way of international courts as a third level international norm, after general international customary law (first level), and particular international treaty law (second level). Ibid, pp. 107-108

But subjectivity of interpretation has its own limits, without which the stability and consistency of a treaty are undermined.[65] The "ordinary meaning"[66] of a given term is confined within a certain limit, beyond which the meaning is no longer ordinary.[67] Furthermore, the ordinary meaning of a treaty text should be interpreted in such a way as to maintain its coherence with the context, as ICJ noted: "If the relevant words in their natural and ordinary meaning make sense in their context, that is an end of the matter. If, on the other hand, the words in their natural and ordinary meaning are ambiguous or lead to an unreasonable result, then, and then only, must the Court, by resort to other methods of interpretation, seek to ascertain what the parties really did mean when they used these words."[68] Subjectivity in interpretation is also limited by the rule that any treaty should be interpreted in accordance with fundamental principles of international law.[69] Court practices also contribute to the maintenance of consistency and stability in the interpretation of treaty. Even though the decision of the Court on any case has no binding force except between the parties and in respect of that particular case,[70] an interpretation of a treaty given by an international court has the authority of jurisprudence.

Besides subjectivity, temporality intervenes in the interpretation of treaties. With the passage of time, the interpreter and the meaning of a treaty text change.

An individual interpreter is an evolving subject. Each interpreter's knowledge, reasoning capacity and experience change with time. In the eyes of this evolving

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[65] See Philippe Coppens, Normes et fonction de juger, Bruyant LGDJ, 1998, pp.175 "L'interprétation est une reconstruction qui ne peut être une innovation à la fois pour des raisons qui tiennent aux contraintes langagières et pour des raisons qui tiennent au fait que toute règle est une référence autoritaire dans un système juridique."

[66] The Court used the term "natural and ordinary meaning " instead of "ordinary meaning ". In the Competence of the General Assembly for the Admission of a State to the United Nations Case, ICJ declared that "the first duty of a tribunal which is called upon to interpret and apply the provisions of a treaty is to endeavour to give effect to them in their natural and ordinary meaning in the context in which they occur." *ICJ Reports*, 1950, pp.4-8

[67] Charles de Visscher asserts: « Dans le traité, la sécurité garantie par la fidélité à la parole donnée est l'objectif des contractants. La fonction de l'interprétation est de donner pleine efficacité à cette exigence fondamentale. » Charles de Visscher, Problèmes d'interprétation juridiques, 1963, p. 10

[68] The Competence of the General Assembly for the Admission of a State to the United Nations, Advisory Opinion, *ICJ Reports*, 1950, p. 8

[69] See Charles de Visscher, op. cit. p. 16
Similarly, within the frame of the hierarchical structure of the legal system, Hans Kelsen would say that the meaning of a lower-level norm is bounded within the frame of the higher-level norm, as he asserts; "the higher-level norms governs the act whereby the lower-level norm is created…In governing the creation of the lower-level norm, the higher-level norm determines not only the process whereby the lower-level norms is created, but possibly the content of the norm to be created as well." Hans Kelsen, op.cit, p. 78

individual, the meaning of the same text may be perceived differently from year to year. Even though each individual remains completely consistent in interpreting a text, a group interpreter, such as the governments of the States parties or international courts, cannot remain totally consistent, because its composition changes over time through the continuous inflow and outflow of its members. If the members of an international court are changed partially,[71] isn't it to minimize the inevitable loss of the continuity of the court from the change of its members?

The ordinary meaning of the terms itself is dynamic, as Mark E. Villiger asserts: "in view of the fact that a term may possess many 'ordinary meanings', the parties may adapt to changing circumstances and conditions, by attributing in their interpretation of a rule one of many plausible meanings to the terms...parties may, in their interpretation, gradually wander from the original text towards a different content and thereby modify the rule."[72] Interpretation of a treaty in a long time span raises the question of intertemporal law. According to the general rule of interpretation provided for in the Vienna Convention, a treaty should be interpreted with the ordinary meaning to be given to the terms in their context. The "context" here means the legal context at the time of the conclusion of the treaty. The doctrine of intertemporal law proposes that "a juridical fact must be appreciated in the light of the law contemporary with it..."[73] In the Grisbadarna Arbitration, the Permanent Court of Arbitration held that "in order to ascertain which may have been the automatic dividing line of 1658 we must have recourse to the principles of law in force at that time."[74] ICJ also declared: "the first duty of a tribunal which is called upon to interpret and apply the provisions of a treaty is to endeavour to

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[70] Statute of the International Court of Justice, Article 59

[71] In case of ICJ, the term of office of the judges is nine years. In order to ensure a certain measure of continuity, one-third of the Court, i.e., five judges, is elected every three years. See Statute of the International Court of Justice, Article 13
Similarly, one-third of the members of ITLOS, seven judges, is elected every three years. See Statute of the International Tribunal for the Law of the Sea, Article 5

[72] Mark E. Villiger, Customary International Law and Treaties, Second edition, Kluwer Law International, 1997, p. 213

[73] The Island of Palmas case, *UNRIAA* Vol. II

[74] *UNRIAA* (1909), vol. XI, p. 159

give effect to them in their natural and ordinary meaning in the context in which they occur."[75]

However, if the meaning of a treaty remains fixed in defiance of the changing environment with the passage of time, that treaty may degenerate into desuetude. ICJ recognizes the necessity of evolutionary interpretation, which means that an international instrument has to be interpreted and applied within the framework of the entire legal system prevailing at the time of the interpretation. In the South West Africa case, ICJ declared: "The concepts embodied in Article 22 of the Covenant (of the League of Nations) were not static, but were by definition evolutionary...That is why, viewing the institutions of 1919, the Court must take into consideration the changes which have occurred in the supervening half-century, and its interpretation cannot remain unaffected by the subsequent development of law, through the Charter of the United Nations and by way of customary law."[76] In the Aegean Sea Continental Shelf case also, ICJ took the same position, by declaring that "the Court is of the opinion that the expression (under consideration) in reservation (b)...must be interpreted in accordance with the rules of international law as they exist today, and not as they existed in 1931 (when Greece acceded to the General Act)."[77] More recently, in Gabčikovo-Nagymaros case (1997), ICJ took the position of evolutionary interpretation, by declaring: "Owing to new scientific insights and to a growing awareness of the risks for mankind – for present and future generations – of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past."[78] The Vienna Convention also incorporates the mechanism of dynamic interpretation by stipulating: "There shall be taken into account, together with the context: (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b)

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[75] The Competence of the General Assembly for the Admission of a State to the United Nations Case, Advisory Opinion, *ICJ Report* 1950, p.8

[76] Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970), Advisory Opinion, *ICJ Report* 1971, pp. 31-32

[77] Aegean Sea Continental Shelf Case, Judgment, *ICJ Reports* 1978, pp.29/34

any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation; (c) any relevant rules of international law applicable in the relations between the parties."[79] The attitude of the evolutionary interpretation can be found also in civil law.[80]

As such, the jurisprudence dictates to interpret a treaty in the context at the time when the treaty is concluded on the one hand, but by taking into account the development of law that has occurred in the supervening period on the other. These two rules of interpretation are seemingly inconsistent with each other. The first rule requiring the contemporaneity with the judicial fact may be understood to say about the applicable law. This rule can be derived from the principle of non-retroactivity of law, as R. Y. Jennings asserts: "The rule that the effect of an act is to be determined by the law of the time when it was done, not of the law of the time when the claim is made, is elementary and important. It is merely an aspect of the rule against retroactive laws, and to that extent may be regarded as a general principle of law."[81] The second rule requiring the contemporaneity with the interpretation may be understood to say about the necessity of giving a new meaning to the text in the light of the new prevailing legal system. The first rule requires that the applicable law should be found at the time when the judicial fact occurred. The second rule signifies that the meaning of the treaty may evolve with the passage of time. When ICJ, in the Namibia case, held that "Mindful as it is of the primary necessity of interpreting an instrument in accordance with the intentions of the parties at the time of its conclusion, the Court is bound to take into account the fact that the concepts embodied in Article 22 of the Covenant: 'the strenuous conditions of the modern world' and 'the well-being and development' of the peoples concerned were not static, but were by definition evolutionary, as also, therefore, was the concept of the 'sacred trust'", the Court applies the two rules simultaneously by giving new meaning to the unchanged text taking into account the subsequent development of law. Similarly,

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[78] The Case Concerning the Gabčikovo-Nagymaros Project, ICJ, Judgment, para.140

[79] Article 31, para.3

[80] « L'interprète a le droit d'adapter librement le texte aux nécessités sociales de son époque. Il doit rechercher ce que serait la pensée des auteurs de la loi s'ils avaient à légiférer aujourd'hui. Ce qui importe pour l'interprétation du Code Civil, ce n'est pas l'intention du législateur de 1804, mais celle d'un législateur supposé de 1984. » Jean Carbonnier, Droit Civil, Presses Universitaires de France, 1995, p. 198

[81] R. Y. Jennings, The Acquisition of Territory in International Law, Manchester University Press, 1963, p.28

when ICJ, in the Gabčikovo-Nagymaros case, has found that the 1977 Treaty is still in force and consequently governs the relationship between the Parties, but requires the Parties to look afresh at the effects on the environment of the operation of the Gabčikovo power plant taking into account the new norms and standards,[82] the Court maintains the position that the treaty remains unchanged, but is not suitable for the fulfilment of its own objectives in the new situation. Therefore, the Court finds "that Hungary and Slovakia must negotiate in good faith in the light of the prevailing situation, and must take all necessary measures to ensure the achievement of the objectives of the Treaty of 16 September 1977."[83]

Since it is a delicate task to give a new meaning to the fixed text, ICJ, while admitting the necessity of evolutionary interpretation, underlines the primordial necessity of interpreting a given instrument in conformity with the intentions that the parties had at the time of its conclusion.[84] Judge M. Bedjaoui, though admitting that evolutionary interpretation is useful and even necessary in very limited situations, gives a warning that evolutionary interpretation should be applied only in the respect of the general rule of interpretation as provided in Article 31 of the Vienna Convention.[85]

The evolution of interpretation of a given treaty takes place among the persons who are in a position to interpret and apply it; they are the parties to the treaty and international courts, and in some cases international organizations. The parties to the treaty interpret it as a preliminary step to its application. Interpretation and application are distinct concepts, but they are inseparably linked. Interpretation precedes application. Interpretation is the process of passing from an abstract norm to a concrete one. Application is the process of individualization of norm, since it means matching an interpreted norm to a particular fact. In other words, interpretation remains in the realm of concept, while application goes into reality. In practice, treaties are often applied without

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[82] The Case concerning the Gabčikovo-Nagymaros Project, ICJ Judgment, para.140

[83] The Case concerning the Gabčikovo-Nagymaros Project, ICJ Judgment, para.155

[84] Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970), Advisory Opinion, *ICJ Reports* 1971, pp. 31-32

[85] M. Bedjaoui, Opinion Individuelle, The Case Concerning the Gabčikovo-Nagymaros Project, « L'interprétation évolutive ne peut s'appliquer que dans le respect de la règle générale d'interprétation de l'article 31 de la convention de Vienne sur le droit des traités. » Judge Bedjaoui admits that evolutionary interpretation can be applied to Articles 15, 19, and 20 of the 1977 Treaty between Hungary and Czechoslovakia, because these articles are formulated in extremely vague terms.

a formal interpretation. Even in such a case, an implicit interpretation is made in the mind of the person who applies it. In the contemporary world, the interpretation of treaties is one of the daily tasks of each government. When a treaty is concluded, the government of a signatory State interprets it to complete the internal procedures for ratification or publicity. After the entry into force of a treaty, the government interprets it in order to apply it.[86]

The role of international courts in the interpretation of treaties is different from that of governments. First, international courts play a passive role in interpreting treaty texts. They interpret a treaty only when they are requested to settle a particular dispute, or when they are requested by international organizations to give an advisory opinion.[87]Second, a judicial interpretation and a governmental interpretation are different in the degree of their subjectivity and impartiality. Since governments interpret treaties in the light of their national interest to the possible extent, their interpretation tends to be subjective and partial. But international courts are always third parties, required to be impartial. Third, a judicial interpretation given by an international court is final,[88] while an interpretation and application made by a State may be contested by other States.

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[86] See Detlev F. Vagts, Treaty Interpretation and the New American Ways of Law Reading, *EJIL*, Vol.4, 1993, N°4

[87] Article 96 of the UN Charter: "1. The General Assembly or the Security Council may request the International Court of Justice to give an advisory opinion on any legal question. 2. Other organs of the United Nations and specialized agencies, which may at any time be so authorized by the General Assembly, may also request advisory opinion of the Court on legal questions arising within the scope of their activities." Reflecting this provision, Article 65 of the Statute of the International Court of Justice stipulates: "1. The Court may give an advisory opinion on any legal question at the request of whatever body may be authorized by or in accordance with the Charter of the United Nations to make such a request."

By virtue of Article 159 of the 1982 UNCLOS, the General Assembly of ISBA may request an advisory opinion to the Sea-bed Disputes Chamber of ITLOS.

The effects of the interpretations given by an international court are different from organization to organization. In the case of the United Nations, the Charter does not specify the effects of the advisory opinions of ICJ, but it is interpreted that the advisory opinions are advisory, therefore not binding. In some organizations, such as ILO (Article 37), UNESCO (Article XIV), FAO (Article XVII), ICAO (Article 84), ICJ or arbitral tribunal may give final determination which is binding on the parties and the organization. In other organizations such as UNIDO (Article 22) and ISBA (Article 191 of the 1982 UNCLOS), ICJ or ITLOS may give non-binding opinions.

On the subject of the effects of the constitutional interpretation given by international courts, see C.F. Amerasinghe, Principles of the institutional law of international organizations, Cambridge University Press, 1996, Chapter 2 Interpretation of texts, Roberto Ago, "Binding" advisory opinions of the International Court of Justice, *AJIL*, Vol. 85 (1991), N°3, Shabtai Rosenne, The Law and Practice of the International Court of Justice, 1965, Guillaume Bacot, Réflexions sur les clauses qui rendent obligatoires les avis consultatifs de la C.P.J.I et de la C.I.J., *Revue Générale de Droit International Public*, vol. 84 (1980)

[88] Statute of the International Court of Justice, Article 60; "The judgment if final and without appeal."

The possibility of different interpretations is even higher in case of provisions formulated with intentional or constructive ambiguity as a result of compromise. The Convention contains a number of such equivocal provisions.

2.3.2 Re-interpretation in the context of new international norms

The 1992 UNCED has brought an important external impact on the regime of the law of the sea under the 1982 UNCLOS, by adopting two binding conventions[89] and three non-binding instruments.[90] These Rio instruments have created a new context by introducing some new international norms, such as the principle of sustainable development, the precautionary principle, the ecosystem approach, the integrated approach, etc.[91]

Among the Rio instruments, it is Agenda 21 that exercises the most direct influence on the 1982 UNCLOS.[92] In relation to the marine environment, Chapter 17 of Agenda 21 provides international action plan based on the concept of sustainable development. It confirms the status of the 1982 UNCLOS as "the legal basis for the protection and sustainable development of the marine and coastal environment and its resources."[93] This statement brings a new significance to the 1982 UNCLOS in two ways. First, Agenda 21 links the 1982 UNCLOS with the concept of sustainable development. Sustainable development, conceived after the conclusion of the 1982 UNCLOS, is a new concept, although many elements of sustainable development are already embedded therein.[94] Therefore, Agenda 21 declares the 1982 UNCLOS "the legal basis for…sustainable development of the marine and coastal environment." Second, Agenda 21 enlarges the geographical scope of the 1982 UNCLOS. Although the Convention adopts an integrated approach based on the awareness that "the problems of ocean space

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Statute of the International Tribunal for the Law of the Sea, Article 33; "The decision of the Tribunal is final…"

[89] The Framework Convention on Climate Change, the Convention on Biological Diversity

[90] The Rio Declaration, Agenda 21, the Non-Binding Forest Principles

[91] See infra. Chapter 4

[92] See supra. Chapter 1

[93] Agenda 21, Chapter 17, Introduction.

[94] See infra. Chapter 4

are closely interrelated and need to be considered as a whole",[95] its geographical scope is limited to the sea and oceans. But Agenda 21 brings coastal areas into the ambit of the 1982 UNCLOS, by declaring it the legal basis for...sustainable development of the marine and coastal environment, and by adopting the integrated management and sustainable development of the coastal and marine areas as its first programme area.[96] This integrated approach is based on the belief in the ecological interrelationship between sea areas and coastal areas, as stated; "the marine environment - including the oceans and all seas and adjacent coastal areas - forms an integrated whole."[97]

Being a non-binding instrument, can Agenda 21 constitute part of the contemporary legal system in respect of the marine environment? From a formalistic viewpoint, it would be difficult to answer affirmatively. However, it constitutes a part of the fabric of the corpus of contemporary international environmental law, of which a large part is composed of instruments qualified as "soft law". When ICJ declared in its judgment on the Gabčikovo-Nagymaros case that "...new norms and standards have been developed, set forth in a great number of instruments during last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past", the court seems to recognize, to a certain degree, the legal meaning of "soft law". Whatever the legal nature of Agenda 21 might be, it has substantial weight in the international regime for the protection of the marine environment. Although its provisions are not directly binding upon States, it might an element of a new context which is to be taken into account when interpreting legally binding instruments and creating new legally binding instruments.

2.3.3 Re-interpretation of ambiguous provisions

It may be an exaggeration, but without foundation, to say that there is an inversely proportional relation between the clarity of law and the power of interpretation provided

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[95] Preamble
[96] Agenda 21, Chapter 17, para.17.3-17.17
[97] Agenda 21, Chapter 17, para.17.1

to those who have to apply it.[98] Ambiguous provisions leave room for divergent interpretations which may lead to disputes. In the course of negotiation of a treaty text, equivocal terms might facilitate a compromise. When such provisions have to be applied to a particular fact, latent contradiction erupts and ambiguity loses its contradiction-veiling capacity.

On the other side of this negative aspect, ambiguous provisions may have a positive aspect, by facilitating evolutionary interpretation. Such provisions may invite or even necessitate a re-interpretation at the moment of their application. Ambiguous provisions, thanks to their high degree of flexibility, are more adaptable to changing situations and receptive to new ideas. Article 63, paragraph 2 and Article 64 of the Convention are examples of such provisions bearing unsettled ambiguous ideas.[99] With regard to stocks and associated species which occur both within EEZ and in an area beyond and adjacent to EEZ, Article 63, paragraph 2 leaves room for diverging interpretations, by requiring the coastal State and the States fishing such stocks in the adjacent area to agree upon the measures necessary for the conservation of these stocks in the adjacent area. Similarly, Article 64 requires the coastal State and other States whose nationals fish in the region for the highly migratory species to co-operate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region. These two provisions should be interpreted in relation to Article 87 stipulating the general principle of the freedom of the high seas and Article 116 which provides: "All States have the right for their nationals to engage in fishing on the high seas subject to: (a)...(b) the rights and duties as well as the interests of coastal States provided for, *inter alia*, in article 63, paragraph 2, and articles 64 to 67; and..."

Some coastal States interpret these provisions as recognition of preferential status of the coastal States in taking measures for the conservation of straddling stocks and highly migratory species. Already during the negotiation of the Convention, there were

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[98] For Chaïm Perelmann, "Il existe un rapport inversement proportionnel entre la clarté de la loi et le pouvoir d'interprétation accordé à ceux qui doivent l'appliquer." Chaïm Perelmann, Ethique et Droit, Editions de L'Université de Bruxelles, 1990, p. 456

[99] Paul Stanton Kibel, Alone at Sea: Chile's Presencial Ocean Policy, *Journal of Environmental Law*, Vol. 12 (2000), N°1, p. 50 "The modifications and proposals put forth in Articles 116, 63 (2) and 87, however, merely framed the questions. They did not provide the answer."

proposals presented by coastal States trying to formulate the provision of Article 63, paragraph 2 in such a way as to allow coastal State authority to extend conservation measures to the high seas.[100] After their unsuccessful efforts in UNCLOS III, the volition of these coastal States to extend their jurisdiction beyond 200 nautical miles has been strengthened as a reaction to the intensification of fishing activities in the high seas by distant water fishing vessels.[101] Some of these coastal States try to extend their jurisdiction beyond 200 miles by way of national legislation.[102] Some regional regimes have been created on the basis of the preferential status of the coastal States.

From the viewpoint of teleological interpretation, it is possible to advance an argument that these provisions are made in such a way as to take into account the ecological particularities of the fish stocks straddling the boundary between EEZ and the high seas.[103] For such stocks, conservation measures applied in the EEZ should be extended, beyond EEZ, to the whole *Lebensraum* of the stocks. Such a position is well

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[100] Australia, Canada, Cape Verde, Iceland, Philippines, Sao Tomé and Principe, Senegal, and Sierra Leone submitted the proposal of the "Amendment to Article 63, paragraph 2". Official Records of the UNCLOS, xvi, Doc. A/CONF.162/L.114

[101] After the establishment of the EEZ regime, many distant-water fishing vessels intensified their fishing efforts in the areas just outside of EEZs. G.L. Lutgen, Fisheries for the Halibut, 25 *Environmental Policy and Law* 223 (1996) p. 227 "Back in the mid-1970s, it was generally thought there would be fewer distant-water fishing fleets operating in the high seas as a result of the extension of national fisheries jurisdiction to 200 nautical miles. This did not happen. As their catches have begun to fall, the fleets of some countries have become increasingly desperate, fishing whatever they can, wherever they can."

[102] In September 1991, the Chilean government enacted the Law N° 19.080 in which a special zone called *presential* sea (*mar presencial*) is created in the high seas and the jurisdiction of the Chilean government is extended to that zone. See Paul Stanton Kibel, Alone at Sea: Chile's Presencial Ocean Policy, op. cit. C.C. Joyner & P.N. De Cola, Chile's Presencial Sea proposal: Implications for the Straddling Stocks Convention, 24 *Ocean Development and International Law* 99 (1993)

On 5 December 1991, the Argentine government enacted, the Law N° 12.968 on Maritime Areas of the Argentine Republic. According to this law, Argentine's national regulations on the conservation of resources shall apply beyond 200 miles to migratory species and to those associated with the trophic chain of species found in the Argentine EEZ. See J.A. de Yturriaga, The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea, Kluwer Law International, 1997, pp. 229-37

The Canadian government promulgated the Amendment of 1994 to the Coastal Fisheries Protection Act, by which the Canadian government extended its jurisdiction over the conservation of straddling stocks beyond 200 miles. See M. S. Sullivan, The Case in International Law for Canada's Extension of Fisheries Jurisdiction Beyond 200 Miles, 28 *ODIL,* 203 (1997)

The Russian Federation also extended its control over the Alaska pollock in the Sea of Okhotsk Peanut Hole by a series of unilateral actions and bilateral agreements. See Alex G. Oude Elferink, The Sea of Okhotsk Peanut Hole De Facto Extension of Coastal State Control, in Olav Schram Stokke (ed.) Governing High Seas Fisheries, Oxford University Press, 2001, pp.179-205

[103] See F. O. Vicuna, The Presencial Sea: Defining Under International Law Coastal States' Specific Interest in High Seas Fisheries and Other Activities, *German Yearbook of International Law*, 35 (1993) pp. 264-92

summarized in the Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific (Galapagos Agreement).[104]

On the other side, distant water fishing States stick to the division between EEZ and the high seas, and rely on the freedom of fishing on the high seas.[105] There is also the argument that the establishment of EEZ regime itself is the result of the compromise between the claims of the coastal States and the position of the distant water fishing States, and therefore the jurisdiction of the coastal States cannot be further extended beyond the 200 nautical miles.[106]

Amidst these diverging viewpoints on straddling fish stocks and highly migratory species, some regional agreements have been concluded. The Convention on the Conservation and Management of Pollock Resources of the Central Bering Sea was concluded in 1994 between two coastal States (US, Russia) and four distant water fishing States (China, Korea, Japan, Poland) for the conservation of pollock on the high seas of the Bering Doughnut Hole. This Doughnut Hole Convention, without precisely defining its relationship with the 1982 UNCLOS, refers to the latter in vague terms.[107] The Doughnut Hole Convention lays down a very strong enforcement system, in particular the obligation of each fishing vessel to accept one observer of a Party other than its flag State[108] and the obligation of fishing vessels to use real-time satellite position-fixing

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[104] See the Framework Agreement for the conservations of living marine resources on the high seas of the South Pacific "the Galapagos Agreement". Preamble: "these provisions imply the recognition of a preferential status for the coastal States..."

[105] Such a view is clearly expressed in the Application instituting proceedings by Spain in the Spain v. Canada Fisheries Jurisdiction Case. ICJ, General List N° 96

[106] Laurent Lucchini/Michel Voelckel, Droit de la Mer, Tome 2, Volume 2 Navigation et Pêche, Editions A. Pédone, 1996, p. 691 « On ne peut, nous l'avons vu, lire dans la CMB (Convention de Montego Bay) un droit préférentiel de l'Etat côtier en haute mer venant y restreindre la pêche par les autres Etats. Que ce droit préférentiel soit souhaité de *lege refenda* par certains Etats est, certes, une réalité...Pour autant, il est nécessaire de souligner que l'adoption d'un tel Accord mettrait en jeu l'un des compromis fondamentaux sur lequel est construit la CMB : celui qui a permis de créer la zone économique exclusive. »
Similarly, Paul Stanton Kibel argues; « With UNCLOS III, the EEZ question has been resolved. With the 1995 Straddling Stocks Agreement, there is now an international framework for dealing with coastal state concerns about high seas overfishing of straddling stocks, and this framework is clearly rooted in the principle of regional cooperation. » Paul Stanton Kibel, op. cit., p. 63

[107] The sole reference to the Convention is an expression included in the preamble: "Noting the adoption of the United Nations Convention on the Law of the Sea in 1982"

[108] Article XI, para. 5 (a) "Each fishing vessel of the Parties that fishes for pollock in the Convention Area shall accept one observer of a Party other than its flag-State Party, upon request of such Party, under conditions established bilaterally sufficiently in advance by the Parties concerned. If such an observer is not available, the fishing vessel shall have on board one observer from its flag-State Party."

transmitters while in the Bering Sea.[109] These enforcement measures go beyond the rules of the 1982 UNCLOS regarding the jurisdiction over the vessels on the high seas. As in the case of the 1995 Agreement, these measures are arguably inconsistent with the 1982 UNCLOS in relation to the flag State jurisdiction on the high seas.

The Agreement between the Government of Iceland, the Government of Norway and the Government of the Russian Federation Concerning Certain Aspects of Cooperation in the Area of Fisheries, concluded in 1999 for the conservation of the straddling fish stocks (cod, haddock, capelin) in the Barents Sea Loophole, contains some provisions which go beyond the 1982 UNCLOS but in line with it, such as the precautionary approach and the ecosystem approach.[110] This Agreement contains a provision which is seemingly inconsistent with the 1982 UNCLOS in respect of the jurisdiction over the vessels fishing straddling stocks on the high seas, by stipulating a strong port State jurisdiction: the right of States Parties to prevent landing of catches in their ports; and the right to deny access to ports to non-complying vessels.[111]

The Galapagos Agreement, concluded in 2000 between the Coastal States of the Southeast Pacific, members of the South Pacific Permanent Commission and other interested States for "the conservation of living marine resources in the high sea zones of the Southeast Pacific, with special reference to straddling and highly migratory fish populations",[112] espouses the precautionary approach and ecosystem approach, in line with the 1982 UNCLOS.[113] This Agreement contains, however, controversial elements in relation to the provisions of the 1982 UNCLOS, by stipulating: "In conformity with the relevant provisions of international law, all States have the right to allow their nationals to engage in fishing on the high seas, subject *inter alia* to the rights, duties and interests of the coastal States with regard to the capture of straddling stocks and highly migratory species; These provisions imply the recognition of a preferential status for the coastal

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[109] Article XI, para.3 (a) "Each Party shall require its fishing vessels that fish for pollock in the Convention Area: (a) to use real-time satellite position-fixing transmitters while in the Bering Sea"
[110] Preamble
[111] Article 7: "The Parties agree to take measures to prevent landing in their ports of catches if it has been established that such catches have been taken in a manner which undermines the effectiveness of this Agreement and the conservation and management measures referred to in Article 5, and, subject to obligations according to established international law, to deny access to ports to vessels that engage in such activities, except in cases of distress or *force majeure*."
[112] Article 2
[113] Article 5 Conservation Principles

States, justified by the relationship that exists between fish stocks of such species and the marine ecosystem of those States, as well as by the effects of fishing activities on certain coastal fish populations, associated or dependent of the same;"[114]

The arguments advanced by the Parties to the Galapagos Agreement to defend the theoretical foundation of the preferential status of the coastal States are based on the ecosystem consideration, the effectiveness of conservation measures, and the special interests of the coastal States corresponding to their contribution to the conservation of the resources.[115] This is a teleological interpretation of international treaties. These objectives have been widely accepted by international society as expressed in a great number of binding or non-binding instruments. But the preferential status of the coastal States is not automatically derived from these objectives, and its recognition is still arguable. It seems that the drafters of this Agreement were conscious of this ambiguity of the relevant provisions of international instruments on the matter. Without referring to any specific provision of a relevant treaty, this Agreement mentions only "the relevant provisions of international law". It is clear that "the relevant provisions" include the provisions of the 1982 UNCLOS, in particular Article 64, and the 1995 Agreement, because these are provisions directly relevant to the highly migratory species. The Galapagos Agreement is also cautious when it states: "These provisions *imply* the recognition of a preferential status for the coastal State," without boldly stating that these provisions recognize a preferential status. As such, the Galapagos Agreement relies on the evolutionary interpretation of treaties. The Agreement itself expresses clearly this attitude, by stating: "the provisions on these matters contained in recent instruments

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[114] Preamble

[115] Preamble: "The preferential status for the coastal States is justified by the relationship that exists between fish stocks of such species and the marine ecosystem of those States, as well as by the effects of fishing activities on certain coastal fish populations, associated or dependent of the same";
"The uncontrolled exploitation of living marine resources in the high seas adjacent to zones under national jurisdiction represents a threat to the conservation and sustainable use of said resources, as well as to fish populations dependent on or associated with them, and it may undermine the effectiveness of measures adopted by the coastal States with respect to the same species, within their 200-mile zones";
"The coastal States of the Southeast Pacific have the right and duty to ensure the conservation and sustainable use of the living marine resources present in their subregion, including those which migrate from the zones under their national jurisdiction to the high seas and vice versa",
"The countries have administered some of the world's biggest fishing grounds and have adopted effective measures to promote the long-term sustainability of the living marine resources there, and thus they have a special interest in ensuring that the measures applied on the adjacent high seas are no less strict than those in the zones under their jurisdiction."

adopted within the United Nations Organization must be evaluated and adapted to the specific requirements of the South Pacific."[116] These controversial elements caused a dispute between a coastal State and distant fishing States. [117]

The coastal States and other interested States may conclude a regional agreement containing elements which go beyond the framework of the 1982 UNCLOS, in harmony or in contradiction therewith. Such a regional agreement may be justified as an *inter se* agreement in the light of the provisions of Article 41 of the Vienna Convention on "agreements to modify multilateral treaties between certain of the parties only", as well as Article 311, paragraph 3 of the 1982 UNCLOS on the possibility of modifying or suspending by two or more States Parties the operation of provisions of the Convention applicable solely to the relations between them. Furthermore, the preferential status of the coastal States in a regime for the conservation of the straddling or highly migratory species is related to the provisions which allow very flexible interpretations.

These arguments can be strengthened if the distant water fishing States have participated in the formation of the regime, but the Galapagos Agreement contains a particular provision which might be problematic in the procedural aspect. It is open not only to coastal States but also to other interested States. But, the four coastal States shall first sign and ratify the Agreement, and thereby bring it into force. Only after that, other interested States will be allowed to sign and ratify the Agreement, or accede thereto.[118] So, the four coastal States, after having brought the Agreement into force exclusively among themselves, present it as a *fait accompli* to other interested States. This procedure seems contrary to the provisions of the 1982 UNCLOS. The Convention stipulates; "the coastal

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[116] Preamble

[117] In the Case concerning the conservation and sustainable exploitation of Swordfish Stocks in the South-Eastern Pacific Ocean (Chile/EC), the European Community raised the procedural and substantive questions: Whether the 'Galapagos Agreement' was negotiated into in keeping with the provisions of the Convention and whether its substantive provisions are in consonance with, *inter alia*, articles 64 and 116 to 119 of the Convention. The parties to the dispute reached a provisional arrangement concerning the dispute and requested that the proceedings before the Chamber be suspended.
See ITLOS, Case concerning the Conservation and sustainable exploitation of Swordfish Stocks in the South-Eastern pacific Ocean (Chile/EC), Order 2000/3, 20 December 2000, and ITLOS/Press 45, 21 March 2001

[118] Article 16 Signing, Ratification and Accession
"1. The present Agreement shall be opened for signature by the four coastal States of the Southeast Pacific and ratified according to their respective constitutional procedures in force."

State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area."[119] In addition, it provides: "In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall co-operate to establish such an organization and participate in its work."[120] By stipulating in this way, the 1982 UNCLOS envisages that the coastal States together with the distant water fishing States participate in the shaping and functioning of subregional or regional regimes for the straddling stocks or highly migratory species. Considering that the Galapagos Agreement applies exclusively to a certain part of the high seas, its provisions treating the distant water fishing States as secondary participants seem to exaggerate the preferential status of the coastal States, even if it is admitted that such a preferential status is implied in the 1982 UNCLOS. These procedures laid down in the Galapagos Agreement for its entry into force and the participation of other interested States are quite different from those adopted in other subregional or regional agreements, such as the Doughnut Hole Convention and the Barents Sea Loophole Agreement, in which the coastal States and the distant water fishing States participated in the creation of the regimes on equal footing.[121]

2.4 Evolution through the rules of reference

In the 1982 UNCLOS, there are many provisions which, instead of providing specific rules and standards directly applicable to the parties, refer to international rules and

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"2. Once it enters into force, in accordance with the provisions of Article 19, the Agreement shall become open to the signature of other interested States for a twelve-month period. After this term has passed, any interested State may accede to the Agreement."

[119] Article 63 (2)

[120] Article 64

[121] In the Doughnut Hole Convention, two coastal States and four distant water fishing States participated from the beginning of the negotiations. See David A. Balton, The Bering Sea Doughnut Hole Convention, in Olav Schram Stokke, (eds.) Governing High Seas Fisheries, Oxford University Press, 2001, pp. 143-177 In the Barents Sea Loophole, the two coastal States, Russia and Norway, concluded a bilateral agreement when there was virtually no distant water fishing State. After Icelandic fishing vessels began to operate on the highs seas in the Barents Sea, the two coastal States and the one distant water fishing State have concluded a trilateral agreement, which has replaced the bilateral agreement. See Olav Schram Stokke, The Loophole of the Barents Sea Fisheries Regime, in Olav Schram Stokke (eds.) op.cit., pp. 273-301

standards, already established or to be established, in other international instruments. These provisions can be classified into two categories: provisions requiring States to comply with existing international rules; provisions calling for States to establish or elaborate further rules and standards.

2.4.1 Provisions requiring States to comply with the existing rules

Some provisions of the 1982 UNCLOS require States to implement and comply with the existing international rules and standards. States are called on to do this by means of national legislation and enforcement.

In respect of each source of marine pollution, the 1982 UNCLOS requires States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment in accordance with the relevant international rules and standards established through (the) competent international organization(s) or general diplomatic conference. On the other hand, States are required to enforce these laws and regulations to ensure compliance with international rules and standards. For example, Article 207 calls for States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources in accordance with internationally agreed rules and standards, and Article 213 requires States to enforce such laws and regulations to implement applicable international rules and standards. Similarly, in dealing with other sources of marine pollution, the Convention lays down coupled provisions requiring States to exercise their prescriptive and enforcement jurisdictions.[122]

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[122] To prevent, reduce and control marine pollution from sea-bed activities subject to national jurisdiction, Article 208 coupled with Article 214 requires national legislation and enforcement.
For the prevention, reduction and control of marine pollution by dumping, Article 210 and Article 216 lay down the obligation of States to adopt their laws and regulations and the obligation to enforce them.
To prevent, reduce and control marine pollution from or through the atmosphere, Article 212 and Article 222 require States to adopt laws and regulations and to enforce them.
In dealing with pollution from vessels, Article 211 (2) requires States to adopt their national laws and regulations. Since the rules of international law on the enforcement jurisdiction over vessels are quite complicated, the Convention lays down several provisions: Art.217 on the enforcement by flag States, Art. 218 and Art.219 on the enforcement by port States, Art.220 on the enforcement by coastal States.
In respect of marine pollution from activities in the Area, Articles 209 States to adopt their laws and regulations, but the enforcement of international rules, regulations and procedures is entrusted to ISBA by virtue of Art.215.

For safety of navigation, the 1982 UNCLOS lays down obligations on States in similar ways. When the coastal State adopts laws and regulations relating to innocent passage through its territorial sea, it is required that such laws and regulations be in conformity with generally accepted international rules and standards.[123] When the coastal State establishes sea lanes and traffic separation schemes in its territorial sea, international straits or archipelagic waters and the adjacent territorial sea, such sea lanes and traffic separation schemes should be established in conformity with the recommendations of the competent international organization or generally accepted international regulations.[124] When States bordering international straits adopt laws and regulations relating to transit passage, such laws and regulations should conform to the relevant international regulations.[125] When the coastal State removes installations and structures in its EEZ or on its continental shelf, it is required to ensure safety of navigation, taking into account generally accepted international standards.[126] In establishing safety zones around artificial islands, installations and structures, the coastal State is obligated to take into account applicable international standards.[127]

The flag State is required to exercise its jurisdiction over ships flying its flag in accordance with generally accepted international regulations, procedures and practices.[128]

Some provisions lay down obligations directly on operators in the sea, without relying on the competence of States. Foreign ships exercising the right of innocent passage through the territorial sea are required to comply with all generally accepted international regulations relating to the prevention of collisions at sea.[129] Nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances are required to carry documents and observe special precautionary measures established for such ships by international agreements.[130] Ships in transit passage shall comply with generally accepted international regulations, procedures and practices for

[123] Art.21 (1), (2)
[124] Art.22 (2), Art. 41 (3), (4), Art.53 (8)
[125] Art.42 (1)
[126] Art.60 (3)
[127] Art. 60 (4), (5,) (6,) (7), Art.80
[128] Art.94 (1), (3), (4), (5)
[129] Art.21 (4)
[130] Art.23

safety at sea.[131] Operators conducting marine scientific research are required to give adequate internationally agreed warning signals to ensure safety at sea and the safety of air navigation, taking into account the rules and standards established by competent international organizations.[132]

2.4.2 Provisions requiring States to adopt new rules

The existing international rules, standards, practices and procedures established to prevent, reduce and control marine environment are not sufficient, and they are subject to modification to adapt to the changing environment. Therefore, the 1982 UNCLOS requires States to cooperate in establishing or elaborating international rules and standards, or recommended practices and procedures. The Convention lays down a general obligation of States to cooperate to this end on a global or regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures for the protection and preservation of the marine environment.[133]

The Convention requires States to cooperate in establishing appropriate scientific criteria for the formulation and elaboration of international rules and standards.[134]

In respect of each source of marine pollution, the Convention calls for States to establish, through competent international organizations or diplomatic conferences, global and regional rules, standards and recommended practices and procedures to prevent, reduce, and control marine pollution.[135]

2.4.3 Relationship between the 1982 UNCLOS and the instruments providing rules and standards

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[131] Art. 39 (2)
[132] Article 262
[133] Art. 197
[134] Art. 201
[135] Article 207 (4) on marine pollution from land-based sources, Article 208 (5) on pollution from sea-bed activities subject to national jurisdiction, Article 209 (1) on pollution from activities in the Area, Article 210 (4) on pollution by dumping, Article 211 (1) on pollution from vessels, Article 212 (3) on pollution from or through the atmosphere.

The provisions by which the 1982 UNCLOS incorporates the rules from other instruments specify neither the instruments providing such rules nor the competent organizations establishing such rules.[136] When the Convention relies on the rules established in other instruments, the relationship between the Convention and the instruments providing such rules seems to be a kind of framework convention/protocols relationship. But there are ambiguous points.

On the nature of the framework convention, Jacob Werksman asserts: "the process of law-making does not end with the adoption of the MEA (Multilateral Environmental Agreement). The general 'framework' character of many MEAs leaves much of the more difficult and detailed rule-making to the conference of the Parties (COP) and the specialized institutions they establish as the treaty enters into force."[137] In the framework convention/protocol approach, "States first negotiate a framework convention, establishing general obligations concerning such matters as scientific research and exchange of information, as well as a skeletal legal and institutional framework for future action. States later develop specific pollution control measures (including emissions limitations targets) and more detailed implementation mechanisms in protocols."[138]

The 1982 UNCLOS is not entitled "framework convention". But in many aspects, it can be regarded as a framework convention. Except for Part XI, the 1982 UNCLOS provides general norms which are difficult to apply directly to real situations without being supplemented by specific rules and standards. In particular, Part XII on protection and preservation of the marine environment contains many general provisions, as Judge Yankov asserts; "A major feature of this part of the 1982 Convention on the protection and preservation of the marine environment was exactly the attempt to harmonize often opposing interests such as the need to protect the marine environment on the one hand and the preservation of the freedom of navigation, or any other national activities

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[136] See W. van Reenen, Rules of Reference in the New Convention on the Law of the Sea, in particular in connection with the Pollution of the Sea by Oil from Tankers, 12 *Netherlands Yearbook of International Law*, 25 (1981), pp.3-25

[137] Jacob Werksman, The Conference of Parties to Environmental Treaties, in Jacob Werksman (eds.) Greening International Institutions, Earthscan Publications, 1996, p. 57

[138] Daniel Bodansky, The United Nations Framework Convention on Climate Change: A Commentary, *Yale Journal of International Law*, Vol. 18:439, 1993, p.494

affecting the seas, on the other."[139] For this reason, he regards the Convention as "an open system of a framework treaty which may serve as a legal basis and incentive to other agreements and international instruments compatible with the object and purpose of the Convention".[140] Documents of the United Nations also qualify Part XII of the 1982 UNCLOS as an 'umbrella',[141]or framework.[142] In the context of the relationship between the 1982 UNCLOS and IMO instruments, IMO acknowledged it as an "umbrella convention" because most of its provisions, being of a general kind, can be implemented only through specific operative regulations on other international agreements.[143] For some authors, the Convention in general, except Part XI, is a framework treaty.[144] ILA also considers the Convention as un umbrella.[145] Considering the characteristics of the provisions of the 1982 UNCLOS and the rules of reference incorporated or to be incorporated from other instruments, as examined above, these observations seem to be correct. However, if we regard the instruments from which the 1982 UNCLOS borrows operative rules, it is not clear whether they are protocols to the 1982 UNCLOS. For example, many of the rules established under the 1972 London Dumping Convention and its protocols can be incorporated into the 1982 UNCLOS. But, the London Dumping Convention is a treaty which is independent of the 1982 UNCLOS. So is the regime under MARPOL 1973/78.

The framework convention/protocol approach is suitable to the evolution of regimes. By relying on unspecified operational rules and standards which are established,

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[139] A. Yankov, "The Law of the Sea Conference at Crossroads", 18 *Virginia Journal of International Law*, 1977, p. 31, 36

[140] Alexander Yankov, The Law of the Sea Convention and Agenda 21: Marine Environmental Implications, in Alan Boyle and David Freestone (ed.), International Law and Sustainable Development, Oxford University Press, 1999, p.273

[141] See United Nations, Report of the Secretary-General: Protection and Preservation of the Marine Environment (UN Doc. A/44/461), 18 September 1989, p. 5

[142] United Nations Convention on the Law of the Sea 20th Anniversary (1982-2002) p. 4 "A growing number of detailed international agreements on the protection of the marine environment, as well as the utilization, conservation and management of marine resources, have been adopted under the unifying framework of the Convention."

[143] IMO, LEG/MISC/2, Implications of the Entry into Force of the United Nations Convention on the Law of the Sea for the International Maritime Organization, 10 February 1986, p.3

[144] R.R. Churchill and A.V. Lowe assert: "In part – the section dealing with the deep sea bed – it is an exceptionally precise, detailed instrument closer in appearance to a commercial contract or concession than an international treaty…The other parts are more in the nature of a framework treaty or *loi-cadre*." R.R. Churchill and A.V. Lowe, The Law of the Sea, Second Edition, Manchester University Press, 1988, p.15

[145] International Law Association, Helsinki Conference, Committee on coastal state jurisdiction relating to Marine pollution, First Report, May 1996, p.12

or to be established, in unspecified instruments, the regime under the 1982 UNCLOS is endowed with highly flexible mechanisms of evolution.

Daniel Bodansky finds two merits of the framework convention/protocol model: "First, it allows work to proceed in an incremental manner...Second, the framework convention approach can produce positive feedback loops, making the adoption of specific substantive commitments more likely."[146] The 1982 UNCLOS contains such mechanisms of incremental development and feedback. Under Articles 207, 208, 209, 210, 211, States are required to re-examine, from time to time as necessary, global and regional rules, standards, recommended practices and procedures to prevent, reduce and control pollution of the marine environment from land-based resources, from sea-bed activities subject to national jurisdiction, from activities in the Area, by dumping, and from vessels, respectively.

Through the rules of reference, the 1982 UNCLOS and the instruments which provide technical rules and standards interact, exercising mutual influence in such a way as to facilitate the evolution on both sides. By virtue of the provisions serving as conveyer belts between the Convention and related instruments, a new rule or standard developed in another regime can be transmitted to the regime under the Convention. However, the Convention does not remain passive in this process of evolution. It may bring evolutionary effects to the rules or standards established by competent international organization in two ways. Firstly, the Convention may transmit its binding force to a rule or standard adopted by an international organization. Suppose a rule is adopted by a competent international organization, and the rule is not by itself legally binding. If this rule is recognized to belong to the category of rules referred to in the relevant provision of the Convention, the rule becomes legally binding by virtue of the binding force of the provision of the Convention which obligates States to comply with such rules.[147] In this way, the Convention may strengthen the effectiveness of the rules and standards established in other instruments. In addition, such process can be reinforced by means of national legislation required by the Convention. As examined above, many provisions

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[146] Daniel Bodansky, op.cit., pp. 494-495

[147] See ILA, Helsinki Conference, Committee on Coastal State Jurisdiction relating to Marine Pollution. First Report, May 1996, p.28 The ILA Report asserts; "certain rules and standards which would not otherwise be legally binding, would become so by means of this rule of reference."

require States to adopt laws and regulations to prevent, reduce and control marine pollution in accordance internationally agreed rules and standards. If a State adopts such national laws and regulations, such rules and standards can be enforced by its national authority upon its nationals or foreign nationals under its jurisdiction.

Secondly, the universal (or virtually universal) applicability of the Convention can be extended to internationally agreed rules and standards. Suppose a State is party to the Convention, but not party to the instrument which provides a technical rule. If the rule is recognized to belong to the category of the rules referred to in the Convention, then the rule becomes binding upon the State by virtue of the binding force of the Convention. In this way, the Convention expands the applicability of the rule.[148]

However, these flexible mechanisms of evolution have been devised at the price of ambiguity. Since the 1982 UNCLOS refers to unspecified international rules and standards, it is not clear what rules and standards correspond to the provisions of the Convention referring to "generally accepted" or "internationally agreed" rules and standards. On the one hand, these terms were formulated with intentional ambiguity.[149] On the other hand, when referring to not only the existing rules but also the rules to be created in the future it would be impossible to provide a clear-cut criterion to distinguish "generally accepted" or "internationally agreed" rules or standards from others. In addition, the Convention does not specify competent international organizations. The Convention refers to (the) competent international organization(s), sometimes in the singular, sometimes in the plural. When the term is used in the singular, it is understood to designate IMO. When used in the plural, it means unspecified organizations which may work in cooperation with IMO.[150]

2.4.4 Post-UNCLOS developments in the rules of reference

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[148] See ILA, ibid., p. 28 "The very idea was to oblige states to conform to these generally accepted rules which were not necessarily accepted by all states. The 1982 Convention subsequently expanded its field of application to the environmental sphere...The starting point therefore seems to be that the rule of reference discussed imposes a legal obligation on a state to apply a particular rule or standard, which the latter would otherwise not be legally bound to observe. The rule of reference therefore must be clearly intended to establish such a global standard. "

[149] See Bernard H. Oxman, The Duty to Respect Generally Accepted International Standards, 24 *New York University Journal of International Law and Politics*, 1991

[150] IMO, LEG/MISC/2, Implications of the Entry into Force of the United Nations Convention on the Law of the Sea for the International Maritime Organization, 10 February 1986, p.2

<Post-UNCLOS evolution of the dumping regime>

The international regime for the protection of the marine environment from pollution by dumping under the 1972 London Dumping Convention is under continuous evolution. In 1989 an amendment was made to Annex III to the Convention,[151] to reinforce the scientific basis in issuing a permit. The amendments adopted in 1993 brought about an important change in the dumping regime by banning the dumping into the sea of low-level radioactive wastes, phasing out the dumping of industrial wastes, and banning the incineration at sea of industrial wastes.[152] The Protocol adopted on 7 November 1996 introduces several important new principles, in particular the precautionary principle, the polluter pays principle and the "reverse list" approach. It is the reverse list approach which will bring about, when the Protocol becomes effective, a fundamental change in the dumping regime. Under the 1996 Protocol, all dumping at sea is prohibited unless explicitly permitted in accordance with the Protocol: The materials eligible for dumping are listed in Annex I. Dumping of such materials is not automatically allowed. Such materials may be dumped according to the result of the assessment conducted for each case in accordance with the framework laid down in Annex II.[153] Besides, dumping may be exceptionally permitted in cases of *force majeure* caused by stress of weather, or in any case which constitutes a danger to human life or a real threat to vessels, aircraft, platforms or other man-made structures at sea.[154] The 1996 Protocol also prohibits

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[151] 1989 amendment requires Contracting Parties, when issuing a permit for dumping, to consider whether an adequate scientific basis exists concerning the characteristics and composition of the matter to be dumped to assess the impact of the matter on marine life and on human health.

[152] As amended by the 1993 amendments, the London Dumping Convention prohibits the dumping of all types of radioactive wastes at sea. But all substances hold some amount of radioactivity. They contain either naturally occurring radioactive materials, or traces of radioactive substances produced from human activities. After the adoption of the 1993 amendment to the London Dumping Convention, IAEA, charged with the task of defining the radioactive wastes, has introduced the concept of *de minimis* levels, below which materials can be considered "non-radioactive" for the purposes of the London Dumping Convention. The concept of *de minimis* levels has been elaborated into the concepts of exclusion and exemption by the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (BSS) issues by IAEA in 1996 as Safety Series N°115. See John Cooper, Abel J. Gonzalez, Gordon Linsley, and Tony Wrixon, What waste is "radioactive"? IAEA Bulletin 42/3/2000, and IAEA Newsbriefs http:/www.iaea.org/worldatom/Press/Newsbriefs/1994/newsv09n1.html

[153] Article 4, Annex I, Annex II

[154] Article 8

incineration at sea and the export of wastes for the purpose of dumping or incineration at sea unless permitted in some exceptional situations.[155]

The 1996 Protocol will supersede the 1972 London Dumping Convention as between Contracting Parties to the Protocol which are also Parties to the Convention.[156] When the Protocol enters into force, it will be an *inter se* agreement and a *lex specialis* vis-à-vis the Convention, and will constitute a basis for a strong special dumping regime among parties to the Protocol.[157]

By virtue of Article 210 and 216 of the 1982 UNCLOS, these evolutions which have occurred, or are occurring, in the dumping regime have resulted, or will result, in the evolution of the regime under the 1982 UNCLOS.

<Post-UNCLOS evolution of the MARPOL regime>

The regime for the prevention of marine pollution from vessels under MARPOL 73/78 has also evolved. Under MARPOL 73/78, technical rules and standards are set down in a series of annexes to MARPOL 73/78: Annex I on prevention of pollution by oil, Annex II on control of pollution by noxious liquid substances, Annex III on prevention of pollution by harmful substances carried in packed form, or in freight containers or portable tanks or road and rail tank wagons, Annex IV on prevention of pollution by sewage, Annex V on garbage. As a result of the development of techniques applied to the construction and equipment of ships and the findings of new problems, these annexes have been continuously amended.[158]In order to enhance the safety of the ships carrying dangerous chemicals in bulk, the harmonized system of survey and certificates (HSSC) has been introduced into the code for the construction and equipment of ships carrying dangerous chemicals in bulk, which has been revised successively.[159]

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[155] Articles 5, 8

[156] Article 23

[157] The Protocol will enter into force 30 days after ratification by 26 countries, 15 of which must be Contracting Parties to the 1972 London Dumping Convention. As at 30 November 2002, 16 States have ratified the Protocol. See Summary of Status of Conventions as at 30 November 2002, http:/www.imo.org/Conventions/

[158] Annex I has been amended in 1984, 1987, 1990, 1991, 1992, 1994, 1997; Annex II in 1985, 1989, 1994; Annex III in 1994; Annex IV in 1997, Annex V in 1990, 1994, 1995. The annexes have been amended by revising the list of substances, or by designating new Special Areas.

[159] The code for the construction and equipment of ships carrying dangerous chemicals in bulk (BCH Code and IBC Code) has been amended in 1990, 1992, 1996, 1997.

Besides these amendments to MARPOL 73/78, some new conventions, which are independent of MARPOL 73/78 but related to the pollution of marine environment from ships have been adopted. In 1990, the International Convention on Oil Pollution Preparedness, Responses, and Co-operation (OPRC) was adopted. This Convention provides, *inter alia*, rules for oil pollution emergency plans, oil pollution reporting procedures. In 2001, International Convention on the Control of Harmful Anti-fouling Systems on Ships was adopted to prevent the harmful effects on marine life and the marine environment by anti-fouling systems.[160]

By virtue of Articles 211, 217, 218, 220 of the 1982 UNCLOS, the evolution realized in the regime for the protection of the marine environment against pollution from vessels under MARPOL 73/78 has been incorporated into the regime under the 1982 UNCLOS.

2.5 Evolution by the creation of sub-regimes

Under a regime founded on the basis of a treaty, sub-regimes can be created: 1) by a subgroup of the Parties to the treaty; 2) in a subset of the issue-area of the treaty; 3) in a part of the geographical scope.

A subgroup of a treaty may build a sub-regime by concluding an *inter se* agreement among them. The 1982 UNCLOS incorporates the rule on *inter se* agreements laid down in the 1969 Vienna Convention on the Law of Treaties, with some modification.[161] Whereas Article 41 of the Vienna Convention provides for the possibility of 'modifying' a treaty among two or more parties applicable to them only, Article 311 of the 1982 UNCLOS envisages not only a 'modification' but also a 'suspension' of some provisions in the relationship among two or more parties. The 1995 Agreement provides also the same mechanism of modification and suspension.[162] Such a mechanism may facilitate the formation of regional or bilateral regimes as well as issue-specific regimes when a subgroup of parties to the 1982 UNCLOS feel the necessity to adjust some

[160] The Convention defines "anti-fouling systems" as a coating, paint, surface treatment, surface or device that is used on a ship to control or prevent attachment of unwanted organisms.
[161] Article 41 Agreements to modify multilateral treaties between certain of the parties only
[162] The 1995 Agreement, Article 44, para.2

provisions to particular circumstances. To date, there is no sub-regime established through this mechanism, directly invoking the *inter se* agreement clause. But many regional and bilateral regimes established on the basis of, or in conformity with, the 1982 UNCLOS may be regarded as sub-regimes of the general regime under the 1982 UNCLOS.

A sub-regime can be created in a particular subset of the issue-area of the general regime under the 1982 UNCLOS. The instrument creating such a sub-regime can be independent of the 1982 UNCLOS in form, but should be consistent therewith in substance. Since the 1982 UNCLOS covers 'all issues relating to the law of the sea', the issue-areas of other regimes dealing with law of the sea issues are subsets of the issue-area of the Convention. For example, the regimes under the 1995 Agreement, the 1972 London Dumping Convention, and MARPOL 73/78 have specific issue-areas. All of these are sub-issue-areas of the 1982 UNCLOS. These sub-regimes provide more concrete action-oriented norms in consistency with the norms laid down in the 1982 UNCLOS.

The 1982 UNCLOS is applicable to all the seas and oceans of the globe. There can be sub-regimes applicable to a limited sea area. Regional and bilateral regimes belong to this category of sub-regimes.

In reality, many sub-regimes are created by combining the three criteria of sub-regimes; regimes among subgroups of the Parties, those in a sub-issue-area, those applicable to a limited sea area. Most of the regional regimes dealing with the law of the sea issue belong to this category of sub-regimes. For example, the Bering Sea Doughnut Hole Convention, the Convention for the Conservation of Southern Bluefin Tuna, the Agreement on the Conservation of Seals in the Wadden Sea, the Convention on the Protection of the Marine Environment of Baltic Sea Area, etc., constitute legal bases for regimes formed among subgroups of the States Parties to the Convention, in limited issue-areas, with limited geographical scopes.

2.6 Mechanisms of controlling evolution

As Talcott Parsons lays emphasis on the inseparability of the problems of stability and change of social systems,[163] change is inevitable in all social systems, but a radical change may threaten their integrity. By adapting to the changing environment and resolving internal conflicts, a regime should maintain its integrity. For a regime to evolve in a dynamic equilibrium, it should be endowed with some controlling mechanisms, together with evolutionary mechanisms.

Since a regime is made up of its members, the primary role of ensuring its integrity is played by its members. They can perform this function by ensuring the compliance with regime norms through self-control and reciprocal control.[164] Self-control can be done through the internalisation of regime norms in the mindset of each regime member.[165] The ritual of confirming and reconfirming the significance of the 1982 UNCLOS in the Meetings of States Parties and other international instances is an effort toward consolidating the internalisation of the norms embodied in the Convention. Reciprocal control can become effective through intersubjective expectations and reciprocity, which are essential in the interaction of ego and alters, as Talcott Parsons underlines; "This reciprocal aspect must always be borne in mind since the expectations of an ego *always* imply the expectations of one or more alters. It is in this reciprocity or complementarity that sanctions enter and acquire their place in systems of action."[166]

The 1982 UNCLOS contains mechanisms of controlling the evolution of the regime in order to maintain its integrity. The prohibition of reservations or exceptions stipulated in Article 309 is a mechanism for the maintenance of the integrity of the regime through a uniform application of the Convention. In the same line, Article 310,

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[163] Talcott Parsons & Edward A. Shils, Toward a General Theory of Action, Transaction Publishers, 2001, p. 231 Regarding the problems of stability and change of the social system, Talcott Parsons asserts; "It is impossible to study one without the other." Parsons emphasizes also the inevitability of conflicts in social systems and the necessary limits in the conflicts; "Although conflict can exist within a social system and, in fact, always does, there are limits beyond which it cannot go and still permit a social system to exist." p.198

[164] See infra. Chapter 6, 3 Compliance System

[165] See Jürgen Habermas, Between Facts and Norms, translated by William Rehg from *Faktizität und Geltung*, Polity Press, 1997, p. 67 "The process of internalisation that secures a motivational foundation for actors' value orientations is usually not repression-free; but its does result in an authority of conscience that goes hand in hand with a consciousness of autonomy. Only in this consciousness does the peculiarly obligating character of 'existing' social orders find an addressee who 'binds' himself of his own free will."

[166] Talcott Parsons, op.cit, p. 191
For parsons, "What an actor is expected to do in a given situation both by himself and by others constitutes the expectations of that role. What the relevant alters are expected to do, contingent on ego's action,

while allowing States Parties to make declarations or statements, makes clear that such declarations and statements shall not purport to exclude or to modify the legal effect of the provisions of the Convention.

Whereas Articles 309 and 310 lay down the mechanisms for maintaining the integrity of the regime in the context of the regime itself, Article 311 sets down the mechanisms for safeguarding its integrity in relation to other agreements. First, the Convention prevails over the 1958 Geneva Conventions on the Law of the Sea.[167] Second, the Convention respects the rights and obligations under other agreements on the condition of the compatibility therewith.[168] By interpretation *a contrario,* this provision means that the Convention may change the rights and obligations under other agreements if not compatible with it. Third, the Convention allows States Parties to conclude *inter see* agreements modifying or suspending the operation of provisions of the Convention, but on the condition that such agreements do not affect the application of the basic principles embodied in the Convention and the enjoyment by other States Parties of their rights or the performance of their obligations under the Convention.[169] In this way, the Convention ensures the maintenance of the integrity of the regime.

Self-regulation and reciprocal control may not be sufficient to ensure the stability and integrity of the regime. In some cases, third party control is necessary. Dispute settlement system is one of the third party control mechanisms. As discussed above, the dispute settlement system may facilitate evolution of the regime by means of evolutionary interpretation. On the other hand, the stabilization of behavioural expectations is an intrinsic function of law.[170] Therefore, the dispute settlement mechanism may contribute to the maintenance of the integrity of the regime by controlling evolution in several ways.

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constitutes the sanctions. Role expectations and sanctions are, therefore, in terms of the content of action, the *reciprocal of each other*."

[167] Article 311, para.1. The 1982 UNCLOS does not nullify the 1958 Geneva Conventions, since the 1982 UNCLOS prevails over the 1958 Geneva Conventions "between States Parties".

[168] Article 311, para.2 stipulates: "This Convention shall not alter the rights and obligations of States Parties which arise from other agreements compatible with this Convention and which do not affect the enjoyment by other States Parties of their rights and the performance of their obligations under this Convention."

[169] Article 311, para.3

[170] Jürgen Habermas, op. cit., p. 143

First, the dispute settlement system may stabilize the regime by settling disputes in accordance with its pre-established principles, rules and procedures. By this orderly settlement of disputes, a regime may resolve the problems of conflicts among its members and thereby avoid its disruption.

Second, the dispute settlement system may stabilize the regime by contributing to the convergence of interpretations of the regime norms. When each individual State interprets the regime norms independently, there can be no guarantee that such interpretations are either identical or convergent. In contrast, judicial interpretations made by international courts are conducive to the uniform or consistent interpretation of the regime norms. As Hans Kelsen has maintained that the judicial decision is a continuation of the law-creating process,[171] the judicial decision supplements the general and abstract norms by concretising and individualizing them. However, the contribution by the dispute settlement system in this sense is inherently limited by the fact that the dispute settlement system intervenes passively, case by case, *ex post facto,* at the request of the parties to a dispute.

Third, by accumulating judicial interpretations, the dispute settlement system controls itself. Although "the decision of the court has no binding force except between the parties and in respect of that particular case",[172] accumulated judicial interpretations form the jurisprudence which controls more or less strictly the dispute settlement system itself.

The regime under the 1982 UNCLOS is endowed with a dispute settlement system. The variety and flexibility of the procedures set down in the dispute settlement system may contribute to a controlled evolution of the regime.[173]

3. Conclusion

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[171] Hans Kelsen, Introduction to the Problems of Legal Theory, op.cit., p. 68

[172] Statute of the International Court of Justice, Article 59
The same principle is incorporated into Article 33, para.2 of the Statute of the International Tribunal for the Law of the Sea: "The decision shall have no binding force except between the parties in respect of that particular dispute."

[173] See infra. Chapter 6, 3. Compliance system

A regime evolves under the influence of internal and external factors. Evolution of a regime means any change in the components of the regime; substantive norms, procedural rules, regime members, expectations, and issue-area.

There are various mechanisms for the evolution of legal regimes. Regimes may evolve by modifying their substantive and procedural norms by adopting amendments, additional agreements, protocols, or by resorting to evolutionary interpretation.

Besides these, there can be other mechanisms of evolution through external developments. The regime under the 1982 UNCLOS is endowed with a mechanism of evolution, by resorting to the rules established in other instruments. A regime may evolve when different sub-regimes are created.

In some cases, new ideas, new knowledge, new techniques, new procedures can be introduced into the regime in harmony with the existing regime norms. In other cases, such new elements can be deviations from the existing regime norms. For such deviations to contribute to an orderly evolution of the regime, they should be reconcilable with the fundamental principles of the regime. If not, they cause instability or disruption of the regime. The dispute settlement system may serve as a safeguard against such disruptive deviations.

Chapter 4

Substantive norms of the regime for the protection of the marine environment under the 1982 UNCLOS: *Principles*

1. Integrated approach

The 1982 UNCLOS embraces the integrated approach in its *ratione materiae*, *rationae personae* and *ratione loci*. The Convention purports to cover all issues relating to the law of the sea. It is intended to be applicable to all States of the world and to the entire sea area of the globe, from internal waters to the high seas, and even to the entire sea-bed of the world.

The issue-area of the protection of the marine environment is a subset of that of the Convention. In this sub-issue-area also, the Convention takes an integrated approach: it deals with all types of marine pollution classified into the categories of sources and issues of conservation of marine resources; it provides norms applicable to all States of the world and to all seas and oceans.

This integrated approach is an important step forward in the process of evolution of the regime for the protection of the marine environment.

1.1 Concept of integrated approach

1.1.1 Integration of issue-areas

<Comprehensive vision>

The 1982 UNCLOS is the first international treaty to deal with virtually all issues relating to the law of the sea in a single instrument. The Convention, in its preamble, declares; "the States Parties are prompted by the desire to settle...all issues relating to the law of the sea".

In Part XII, the Convention provides provisions covering virtually all types of marine pollution classified by source; pollution from land-based sources, pollution from

sea-bed activities, pollution by dumping, pollution from vessels, pollution from or through the atmosphere. Article 194 stipulates; "States shall take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from *any source*...", and "The measures taken pursuant to this Part shall deal with *all sources of pollution* of the marine environment..."

In addition, the Convention deals with the conservation of marine living resources, which constitute an integral part of the marine ecosystem. The provisions on the conservation of marine living resources should be regarded not only as measures of resource management, but also in the context of the protection of the marine environment.

The Convention contains many provisions expressing concerns of international society in socioeconomic dimension, [1] in dealing with the problems of marine pollution and the conservation of marine resources. From the anthropocentric viewpoint, the Convention treats marine resources and marine environment in the light of their interest for humans.

<Systemic approach>

To deal with all issues in a single instrument is one thing, to consider them as a whole is another. If all phenomena are interrelated so closely that they are considered to form a whole, then the 'whole' is perceived as a system.[2] The 1982 UNCLOS declares; "the problems of ocean space are closely interrelated and need to be considered as a whole". This conviction signifies a systemic perspective. The systemic perspective in dealing with natural resources means an ecosystem approach. Without employing the term 'ecosystem approach', the Convention contains many provisions inspired by ecosystem considerations.[3]

If socioeconomic dimensions are integrated with ecological dimensions in dealing with "issues relating to the law of the sea" and "the problems of ocean space", such a

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[1] Navigation, fishing and exploitation of other marine resources and marine pollution are basically problems of economic dimension.

[2] In the context of fishery systems, Anthony Charles asserts; "Thus, a systems perspective involves *integrated* approaches both to studying and to managing the fishery. The goal is to incorporate key elements of fishery complexity into our thought processes and decision-making processes." Anthony Charles, Sustainable Fishery Systems, Blackwell Science, 2001, p.225

systemic perspective would be conducive to the concept of sustainable development.[4] As the 1992 Rio Declaration[5] and ICJ[6] have indicated, the concept of sustainable development is the result of the integration of the goal of environmental protection and that of economic development.

1.1.2 Integration of *ratione personae*

The provision stipulating the general obligation to protect and preserve the marine environment,[7] and other provisions of the 1982 UNCLOS relating to the protection of the marine environment are addressed to all States of the world, whether they are parties or not.[8] In addition, the provisions on the conservation and management of the living resources of the high seas are addressed to all States.[9]

At first glance, the provisions stipulating the rights and obligations of the coastal State or other States in relation to the problems of exploitation and conservation of the marine resources in the area under national jurisdiction seem to be addressed to particular categories of States. But the Convention divides all States of the world into two categories; the coastal State and other States. In these provisions, "the coastal State" means every coastal State without distinction, and the term "other States" includes all States of the world except the coastal State in question.[10] Any State is either "the coastal State" or one of the "other States".

In this way, the Convention purports to create a universal regime, for the law of the sea in general, for the protection of the marine environment in particular.

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[3] See infra. 2. Ecosystem approach and the 1982 UNCLOS
[4] See infra. 3. Sustainable Development and the 1982 UNCLOS
[5] The 1992 Rio Declaration, Principle 4 "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."
[6] In the Case Concerning Gabčíkovo-Nagymaros Project, ICJ noted; "This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development.", ICJ, Case Concerning Gabčíkovo-Nagymaros Project, 1997, Decision, para.140.
[7] Article 192
[8] See Chapter 6, 2. Convergence of expectations.
[9] Articles 116 to 120
[10] For example, in Article 56 which stipulates; "Rights, jurisdiction and duties of the coastal State in the exclusive economic zone", "the coastal State" means all coastal States which have proclaimed EEZ. When the Convention provides; "the coastal State shall have due regard to the rights and duties of other States", "other States" means all States of the world except the coastal State in question.

1.1.3 Integration of geographic scope

The provisions of the 1982 UNCLOS on the protection of the marine environment cover all the seas and oceans of the world. In contrast with many other treaties which define "convention area" or "agreement area", the Convention does not provide any such definition. By implication, in the context of the provisions of the Convention, the "convention area" is the entire sea area of the globe. The Convention establishes separate regimes for internal waters, territorial sea, exclusive economic zone, and the high seas. But the sum of these zones constitutes the entire sea area of the world.[11]

1.2 Evolution of the integrated approach

1.2.1 Pre-UNCLOS sectoral and regional approaches

Prior to the 1982 UNCLOS, the law of the sea had evolved piecemeal by sectoral and regional approaches, either in customary international law or in treaty law.

A series of principles and rules of customary international law had been formed in separate issue-areas, such as the freedom of the high seas, the regime of the territorial sea, the system of straight baselines, the regime of fishery zones, the regime of continental shelf, the delimitation of maritime zones, etc.

In the issue-area of the protection of the marine environment, most international regimes had developed, before the 1958 Geneva Conventions, on the basis of a series of treaties, each having a specific issue-area, such as the regulation of whaling,[12] the conservation of sea prawns,[13] the conservation of fur seals,[14] the conservation of tuna,[15]

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[11] There are some inland sea areas where the applicability of the Convention remains problematic; the areas such as the Dead Sea, Aral Sea, Caspian Sea. It is not clear whether the Convention can be applied to these areas. The definition of enclosed and semi-enclosed seas given in Article 122 does not fit to these inland seas. There are divergent theories on the question whether they are seas or lakes. See David Allonsius, Le régime juridique de la mer Caspienne : Problèmes actuels de droit international public, L.G.D.J, 1997

[12] The 1946 International Convention for the Regulating of Whaling

[13] The 1952 Agreement Concerning Measures for the Protection of the Stocks of Deep-Sea Prawns (Pandalus borealis), European Lobsters (Homarus vulgaris), Norway Lobsters (Nephrops norvegicus) and Crabs (Cancer pagurus)

[14] The 1956 Interim Convention on Conservation of North Pacific Fur Seals

the prevention of marine pollution by oil,[16] Mediterranean fisheries,[17] etc. Some rules of customary international law identified through the international arbitral or judicial decisions in cases such as the Trail Smelter, the Corfu Channel were applicable to the issue-area of the protection of the marine environment.

The 1958 Geneva Conventions, in codifying rules of customary international law of the sea, have regrouped law of the sea issues into four issue-areas, i.e. the territorial sea and contiguous zone, the high seas, the continental shelf, and the high seas fishing.[18]These conventions purported to be universal regime and to cover the entire ocean space of the globe, but they embraced a sectoral approach in that each of them was independent and had a specific issue-area, and the ocean space was divided into the territorial sea and the high seas dealt with in separate regimes.

In the period between the 1958 Geneva Conventions and the 1982 UNCLOS, some new rules of customary law of the sea developed, such as the regime of the continental shelf, and the inchoate regime of the exclusive economic zone.[19] In parallel, international regimes on the marine environment developed through a series of international treaties, in issue-areas such as the prevention of marine pollution by dumping,[20]the prevention of pollution by oil or from ships,[21]and a variety of regional conventions in issue-areas such as regional fishing,[22] the protection of regional seas from

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[15] The 1949 Convention for the Establishment of an Inter-American Tropical Tuna Commission
[16] The 1954 International Convention for the Protection of Pollution of the Sea by Oil
[17] The 1949 Agreement for the Establishment of a General Fisheries Council for the Mediterranean
[18] The 1958 Convention on the Territorial Sea and Contiguous Zone, the 1958 Convention on the High Seas, the 1958 Convention on the Continental Shelf, the 1958 Convention on Fishing and Conservation of the Living resources of the High Seas.
[19] D.J. Attard, The Exclusive Economic Zone in International Law, Oxford University Press, 1987
J. L. Jacobson & A. Reiser, The Evolution of Ocean Law, *Scientific American*, November 1998
[20] The 1972 London Dumping Convention and subsequent annexes and protocol.
[21] MARPOL 1973/78 and its subsequent annexes, the 1969 International Convention on Civil Liability for Oil Pollution Damage and its protocol, the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage and its protocol.
[22] The 1959 Convention concerning fishing in the Black Sea, the 1959 North-East Atlantic Fisheries Convention, the 1964 Fisheries Convention (among West European States), the 1969 International Convention for the Conservation of Atlantic Tunas, the 1972 Convention for the Conservation of Antarctic Seals, the 1978 Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, the 1978 International Convention for the High Seas Fisheries of the North Pacific Ocean and its protocol, the 1980 Convention on Future Multilateral Cooperation in the Northeast Atlantic Fisheries, the 1980 Convention on the Conservation of Antarctic Marine Living Resources, the 1982 Convention for Conservation of Salmon in the North Atlantic Ocean, etc.

pollution,[23]etc. Each of these treaties had a specific issue-area. Some of them are global conventions with specific issues, and the others are regional conventions with more or less specific issues. None of them can be considered to be an integrated convention in terms of the issue-area and applicability.

1.2.2 Integrated approach of the 1982 UNCLOS

As discussed above, the 1982 UNCLOS establishes a set of norms covering all issue-areas of the law of the sea, applicable to all States of the world and to all seas and oceans of the globe. As René Jean Dupuy asserts, it has transformed the law of the sea from a uni-dimensional law to a pluri-dimensional law.[24]

1.2.3 Post-UNCLOS approaches

Since the 1982 UNCLOS is a framework convention covering all issues relating to the law of the sea, applicable to all States of the world and to all seas and oceans of the globe, it is natural that there is no other treaty which has such a comprehensive issue-area and such a universal applicability. If there were such a treaty, it would compete with the Convention. In fact, new legal regimes of the law of the sea established after the 1982 UNCLOS are issue-specific regional regimes,[25] issue-specific global regimes[26] or general

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[23] The 1969 Agreement for Co-operation in dealing with Pollution of the North Sea by Oil, the 1978 Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution and its protocol, the 1981 Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific, the 1982 Regional Convention for the Conservation of Red Sea and Gulf of Aden Environment and its protocol.

[24] See René Jean Dupuy, Dialectiques du droit international, Editions A. PEDONE, 1999, pp. 161-163
« Le droit de la mer était unidimensionnel, il devient pluridimensionnel. »

[25] Examples: the 1990 Agreement on the Conservation of Seals in the Wadden Sea, the 1990 Protocol to the Kuwait Regional Convention for the Protection of the Marine Environment Against Pollution from Land-Based Sources, the 1991 Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), the 1992 Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region, the 1992 Convention for the Conservation of the Biodiversity and Protection of Wilderness Areas in Central America, the 1993 Convention for the Conservation of Southern Bluefin Tuna, the 1994 Convention on the Conservation and Management of Pollock Resources Central Bering Sea, the 1996 Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), the 1998 Memorandum of Understanding concerning Conservation Measures for the Siberian Crane, the 1999 Agreement Between The Government of Iceland, the Government of Norway and the Government of the Russia Federation Concerning Certain Aspects of Cooperation in the Area of Fisheries, the 2000 Framework Agreement for the Conservation of Living

regional regimes (regional regimes with general issues).[27]

However, the 1987 WCED and 1992 UNCED have contributed to a further development of the integrated approach of the 1982 UNCLOS, by elaborating the inchoate concepts embedded in the Convention and by further enlarging its perspective.

The idea of integration of development and environment, vaguely embedded in 1972 UNCHE[28] and the 1982 UNCLOS,[29] has been consolidated into the concept of sustainable development formulated in the 1987 WCED Report and endorsed in the 1992 UNCED.

In addition to this elaboration of the idea of integration of development with environment, the 1992 UNCED has further enlarged the perspective of the 1982 UNCLOS, in two ways. First, by introducing the concept of sustainable development, and thereby the concept of intergenerational equity into the regime under the 1982 UNCLOS, Agenda 21 has enlarged the temporal perspective of the regime.[30] Second, Agenda 21 has widened the spatial perspective of the 1982 UNCLOS, by declaring; "the marine environment - including the oceans and all seas and adjacent coastal areas - forms an integrated whole that is an essential component of the global life-support system..."[31] This phrase contains two postulates, which go beyond the vision embedded in the 1982 UNCLOS: 1) the marine environment includes not only all seas and oceans but also

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Marine Resources on the High Seas of the South Pacific (Galapagos Agreement)

[26] Examples: the 1990 International Convention on Oil Pollution, Preparedness, Response and Cooperation (OPRC), the 1994 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, the 1995 Agreement, the 1998 Agreement on the International Dolphin Conservation Program.

[27] Examples: the 1983 Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, the 1985 ASEAN Agreement on the Conservation of Nature and Natural Resources, the 1991 Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol), the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area, the 1992 Convention on the Protection of the Black Sea against Pollution, the 1992 Convention for the Protection of the Marine Environment of the North East Atlantic, and others.

[28] Declaration of the 1972 UNCHE Principle 13; "In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve the human environment for the benefit of their population."

[29] See infra. 3. Sustainable Development and the 1982 UNCLOS

[30] The concept of sustainable development contains that of intergenerational equity; See infra. 3. Sustainable Development and the 1982 UNCLOS

[31] Agenda 21, Chapter 17, Introduction

adjacent coastal areas; 2) the marine environment is a component of the global life-support system. The two postulates stem from the ecosystem perspective.[32]

1.3 Conclusion

The integrated approach provides good soil for the development of the ecosystem approach, sustainable development. The integration of complex biological issues into a system leads to the ecosystem approach.[33] The integration of environmental protection and economic development has generated the concept of sustainable development.

2. Ecosystem approach and the 1982 UNCLOS

2.1 Concepts

2.1.1 The concept of ecosystem

The 1992 Convention on Biological Diversity defines ecosystem as "a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit."[34]

In the FAO Glossary, ecosystem is defined as "a spatio-temporal system of the biosphere, including its living components (plants, animals, micro-organisms) and the

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[32] In the same line, Lawrence Juda asserts; "continuing contemplation of ecosystem-based management gives new impetus to the need for a closer relationship between coastal and ocean management efforts and a need to move away from what Cicin-Sain and Knecht refer to as a "dual system" of management in which coastal and ocean management serve as separate points of focus." Lawrence Juda, Considerations in Developing a Functional Approach to the Governance of Large Marine Ecosystems, *ODIL*, 30, 1999, p. 90

[33] For Anthony Charles, "The ecosystem approach is a key conceptual tool to embrace complexity in fisheries, and a good example of integrated thinking, in which the system is considered as a whole, incorporating the various components and interactions amongst them." Anthony Charles, Sustainable Fishery Systems, Blackwell Science, 2001, p.p.237-8

[33] See infra. 2. Ecosystem approach and the 1982 UNCLOS

[34] Convention on Biological Diversity (1992), Article 2

non-living components of their environment, with their relationships, as determined by past and present environmental forcing functions and interactions amongst biota."[35]

The Center for International Forestry Research defines ecosystem as "the biotic and abiotic components of an environment that interact to produce a flow of energy and cycling of nutrients."[36]

These definitions, among others, contain some common elements in different terms.

First, any ecosystem is composed of biotic components (plants, animals, micro-organisms commonly classified into producers, consumers and decomposers) and abiotic ones (air, water, inorganic substances).[37]

Second, these biotic and abiotic components form a functional unit by interacting through the flow of energy and the cycling of nutrients. [38] It is this functional unit that differentiates the concept of ecosystem from that of environment and other ecological units such as species, population and community."

Third, any ecosystem is a dynamic open system.[39] The terms "dynamic complex", "spatio-temporal system", "flow of energy and cycling of nutrients" employed in the definitions of ecosystem signify that an ecosystem is an open system operating through continuous flow of energy and cycling of materials.[40] In the process of energy flow and

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[35] www.fao.org/fi/glossary

[36] Center for International Forestry Research (CIFOR), The CIFOR criteria and indicators generic template, 1999, p.53

[37] Components of an ecosystem are: (1) inorganic substances involved in material cycles; (2) organic compounds that link biotic and abiotic; (3) air, water, and substrate environment including the climate regime and other physical factors; (4) producers; (5) macroconsumers; (6) microconsumers, or decomposers. See Eugene P. Odum, Basic Ecology, Saunders College Publishing, 1983, pp.17-18

[38] See Odum, Ibid., p.175 "The chemical elements, including all the essential elements of protoplasm, tend to circulate in the biosphere in characteristic paths from environment to organisms and back to the environment. These more or less circular paths are known as biogeochemical circles. The movement of those elements and inorganic compounds that are essential to life can be conveniently designated as nutrient cycling."
See also Robert W. Christopherson, Elemental Geosystems, Second edition, Prenticehall, 1998, p. 476 "Nearly all ecosystems depend on an input of solar energy; the few limited ecosystems that exist in dark caves or on the ocean floor depend on chemical reactions (chemosynthesis)."

[39] See Anthony Charles, ibid., p. 34 "The ecological system as a whole is seen to be in a dynamic process of self-organisation and self-maintenance."

[40] See Eugene P. Odum, Basic Ecology, op.cit., p. 16 "All ecosystems, even the ultimate biosphere, are open systems: there is a necessary inflow and outflow of energy. Of course, ecosystems below the level of the biosphere are also open in varying degrees to material flows and to the immigration and emigration of organisms. Accordingly, an important part of the ecosystem concept is recognizing that there is both an input environment and an output environment that are coupled and essential for the ecosystem to function

nutrient cycling, ecosystem components constantly change, while maintaining their dynamic equilibrium or ecosystem homeostasis. The geographical boundary of an ecosystem also changes with time. Although each ecosystem constitutes an independent biological unity, it is not isolated from other ecosystems.[41] In the marine realm, multiple ecosystems are intertwined and smaller ecosystems are nested in larger systems. The biosphere itself is regarded as the ecosystem of the highest level, i.e. the Earth's ecosystem.[42]

2.1.2 The Concept of ecosystem approach

As the 1992 UNCED declares; "States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem",[43] ecosystem approach means the way of exploiting and conserving natural resources in such a manner as to maintain the ecosystem health and ecosystem integrity.[44] For P. A. Larkin, an ecosystem approach has three essential components: (1) sustainable yield of products for human consumption and animal foods; (2) maintenance of biodiversity; (3) protection from the effects of pollution and habitat degradation.[45]

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and maintain itself."

[41] Robert W. Christopherson, Elemental Geosystems, op.cit., p. 476
"Natural ecosystems are open systems for both energy and matter, with almost all ecosystem boundaries functioning as transition zones rather than a sharp demarcations."

[42] The 1992 Rio Declaration, Principle 7 employs the term the Earth's ecosystem.

[43] The 1992 Rio Declaration, Principle 7

[44] CIFOR defines ecosystem integrity "as the ability to support and maintain a balanced, integrated, adaptive biological community having a species composition, diversity and functional organization comparable to that of natural habitat in the region." See CIFOR (1999): The CIFOR criteria and indicators generic template. Center for International Forestry Research: 53 p.
For J.J. Kay & E. Scheneider, "Ecosystem integrity encompasses three major ecosystem organisational facets. Ecosystem health, the ability to maintain normal operations under normal environmental conditions, is the first prerequisite for ecosystem integrity. But it alone is not sufficient. To have integrity, an ecosystem must also be able to cope with changes (which can be catastrophic) in environmental conditions; that is, it must be able to cope with stress. As well, an ecosystem which has integrity must be able to continue the process of self-organisation on an ongoing basis. It must be able to evolve, develop and proceed with the birth, growth, death and renewal cycle. It is these latter two facets of ecosystem integrity that differentiates it from the notion of ecosystem health." See J.J. Kay & E. Scheneider, Embracing complexity: The challenge of the ecosystem concept, *Alternatives*, 20 (1994), p. 37

[45] P. A. Larkin, ibid.

Since a given ecosystem occupies a certain area within the limits of its moving boundary, an ecosystem approach requires that the geographical scope of the applicability of conservation measures correspond to the ecosystem boundary.[46]

The content of conservation measures should be focused on the maintenance of the ecosystem health and integrity. This requires that the principle of sustainable use be applied not only to the target species but also to dependent or associated species.[47] To maintain the ecosystem health and integrity, it is essential to preserve biological diversity and protect physical environment of the ecosystem from pollution. This integrated and systemic perspective differentiates ecosystem approaches from species approaches or zonal approaches.

2.1.3 The Concept of species approach

Species approach means that stock assessment and fishery management are focused on particular single or multiple species. In single-species approach, "each fish stock is analyzed and managed individually, separate from other species and from the surrounding ecosystem."[48] John Gulland asserts that traditional stock assessment work is too often concerned only with what happens to a single species and proper account is not taken of what is happening to other species with which the target species interacts.[49]

Considering the ecological interdependence among species and the increasing fishing capacity of humans, many fishery scientists recognize the limits of single-species

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[46] Lawrence Juda underlines that the ecosystem boundary is important since it indicates whose actions and what human activities must be considered in providing for management of the LME (Large Marine Ecosystem) and its resources. See Lawrence Juda, Considerations in Developing a Functional Approach to the Governance of Large Marine Ecosystems, *ODIL*, 30, 1999, p. 92

[47] The 1982 World Charter for Nature declares; "Ecosystems and organisms... shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as to endanger the integrity of those other ecosystems or species with which they coexist." I. General Principles, para.4

[48] For Anthony Charles, "it seems clear that the practice of stock assessment and fishery management, at least in industrialized nations, has developed largely on the basis of *single-species* approaches. Typically, each fish stock is analysed and managed individually, separate from other species and from the surrounding ecosystem. This almost exclusive focus on single species may be found, for example, in classic stock assessment manuals such as Ricker's (1975) Computation and Interpretation of Biological Statistics of Fish Populations. Even today, most stock assessment practice, and almost all fishery management endeavours, are based on single-species methods." Anthony Charles, ibid., p. 226

[49] J. A. Gulland, Fish Stocks Assessment: A Manual of Basic Methods, Wiley-Interscience, 1983, p. 186

approaches,[50]and propose multi-species approaches, taking into account the ecological relationship between target species and non-target species.[51]In many international instruments, the multi-species perspective is reflected in the provisions expressing concerns over the effects on dependent or associated species.[52]

The multi-species approach, which pays more attention to the biological interdependence among species, constitutes an element of the ecosystem approach.[53]

In order to effectively apply a species approach, it is required that the geographical scope of the relevant regime correspond to the "range"[54] of that species.

2.1.4 The concept of zonal approach

Many traditional rules of international law on the exploitation and conservation of marine living resources have been developed on the basis of jurisdictional zones, such as the territorial sea, the system of straight baselines, the fishery zones, and the exclusive economic zone. By providing relatively simple maritime configurations, such maritime zoning may enhance legal practicality in prescribing and enforcing laws and regulations relating to the activities in the sea.

A common feature of the international regimes created by zonal approaches is that they distinguish the coastal States from other States and attribute rights and obligations

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[50] J. A. Gulland asserts; "In the past, the history of analysis and advice based on single-species approaches…has been moderately satisfactory. This comforting situation is changing with the increasing range of species being exploited by present-day fisheries. There is an increasing risk that analysis and advice based on a single-species approach will be incomplete in some important aspects." Ibid., p.187

[51] See N. Daan, Multispecies assessment issues for the North Sea, in E.L. Pikitch, D.D. Huppert & M.P. Sissenwine (ed.), Global Trends: Fisheries Management, 1997, pp.126-133 "The primary objective of multi-species virtual population analysis (MSVPA) is to quantify feeding interactions among species in relationship to the interaction between fish stocks and fisheries."

[52] For example, Article 61, para.3, 4 of the 1982 UNCLOS, among others.

[53] See Anthony Charles, op. cit., p.228 "As interest in an ecosystem approach becomes widespread, it is likely that the development of multi-species assessment methods will also progress as an important component of this effort, although it must be noted that adopting an ecosystem approach is by no means dependent on solving the tricky problems inherent in multi-species assessment!"

[54] According to the 1979 Convention on the Conservation of Migratory Species of Wild Animals, "Range" means all the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overlies at any time on its normal migration route. Article I, 1.f)

on the basis of this distinction.[55] In a zonal approach, the geographical scope of a given regime is defined according to the boundaries of jurisdictional maritime zones.

Zonal approaches can be combined with species approaches. For example, if the geographical scope of a regime based on a species approach spans several jurisdictional zones, from the coastal zones to the high seas for example, the range of the species can be divided into the jurisdictional zones and the rights and obligations relating to the conservation of the species can be attributed accordingly.[56] In the same way, a zonal approach can be also combined with an ecosystem approach, by dividing the ecosystem boundary into several jurisdictional zones, and by attributing rights and obligations to each State according to its status in each jurisdictional zone.[57]

The main characteristics of these approaches can be summarized as follows:

	Species approach	Zonal approach	Ecosystem approach
Issue area	Conservation of particular species (sustainable use of particular species)	Conservation of particular species or ecosystems	Conservation of particular ecosystems (maintenance of ecosystem integrity)
Geographical scope	Range of particular species	Area defined in terms of jurisdictional zones	Ecosystem boundary
Content of conservation measures	Focus on the conservation of particular species	Focus on the attribution of rights and obligations according to the status of each State in each jurisdictional zone *	Focus on the conservation of particular ecosystems

[55] An ecosystem approach also requires a kind of maritime zoning in that a set of regulations and measures designed for the conservation of a given ecosystem should be applied in a certain maritime area defined according to the ecosystem boundary, rather than the boundary established by jurisdictional maritime zoning.

[56] In the 1993 Convention for the Conservation of Southern Bluefin Tuna, the Parties, recognizing that southern bluefin tuna is a highly migratory species which migrates through such zones, note that the coastal States through whose exclusive economic or fishery zones southern bluefin tuna migrates exercise sovereign rights within such zones for the purpose of exploring and exploiting, conserving and managing the living resources including southern bluefin tuna. Preamble

[57] The regime under the 1980 CCAMLR is the case. See infra. Paragraph 2.2.1.4

* When a zonal approach is combined with a species approach or an ecosystem approach, the rights and obligations are distributed according to the status of each State in each jurisdictional zone within the range of the species or the ecosystem boundary.

2.2 Evolution of principles for the conservation of the marine resources

2.2.1 Pre-UNCLOS approaches for the conservation of marine resources

2.2.1.1 Species approaches in the pre-UNCLOS regimes

The whaling regime under the 1946 International Convention for the Regulation of Whaling, the tuna regimes under the 1949 Convention for the Establishment of an Inter-American Tropical Tuna Commission and the 1966 International Convention for the Conservation of Atlantic Tunas are examples of typical species approach. The issue-areas of these regimes are confined to the conservation of particular species.[58] Their geographical scopes cover implicitly or explicitly the range of the target species, irrespective of the boundaries of the jurisdictional zones. [59] The content of conservation measures are focused on the conservation of particular species and the dependent or associated species.[60] These regimes do not define the attribution of the rights and

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[58] The whaling conventions purport to conserve whale stocks without classifying them. See the 1946 Whaling Convention, Preamble.
The Inter-American tuna regime is aimed to conserving "the populations of yellowfin and skipjack tuna and of other kinds of fish taken by tuna fishing vessels in the eastern Pacific Ocean." See the 1949 Convention for the Establishment of an Inter-American Tropical Tuna Commission, Preamble.
The 1966 International Convention for the Conservation of Atlantic Tunas purport to conserve "tuna and tuna-like fishes found in the Atlantic Ocean." Preamble

[59] Considering the long ranges of whale stocks, the Whaling Convention does not specify its geographical scope, but it is implied to cover the range of the whale stocks.
The 1949 Convention for the Establishment of an Inter-American Tropical Tuna Commission does not precisely define its geographical scope, but it is clear that it intends to be applicable to the eastern Pacific Ocean. See Preamble
The 1966 International Convention for the Conservation of Atlantic Tunas defines the "Convention area" as "all waters of the Atlantic Ocean, including the adjacent Seas". Article I

[60] The Inter-American tuna regime is obviously inspired by ecosystem considerations when it stipulates, in Article II, "the Commission shall perform the following functions and duties:
1. Make investigations concerning the abundance, biology, biometry, and ecology of yellowfin (Neothunnus) and skipjack (Kaisuwonus) tuna in the waters of the eastern Pacific Ocean fished by the nationals of the High Contracting Parties, and the kinds of fishes commonly used as bait in the tuna fisheries, especially the anchovetta, and of other kinds of fish taken by tuna fishing vessels; and the effects of natural factors and human activities on the abundance of the populations of fishes supporting all these

obligations relating to the exploitation and conservation of the species on the basis of jurisdictional maritime zones.

Similarly, the regimes under the 1956 Convention on the Conservation of North Pacific Fur Seals and the 1972 Convention for the Conservation of Antarctic Seals are based on species approaches: their issue-areas are confined to the conservation of particular seal species; their geographical scopes are not defined on the basis of the jurisdictional maritime zones; the content of their conservation measures are focused on the conservation of particular species; and they do not attribute the rights and obligations on the basis of the jurisdictional maritime zones.

2.2.1.2 Zonal approaches in the pre-UNCLOS regimes

The 1958 Geneva Conventions on the Law of the Sea have elaborated the foundation for zonal approaches by codifying the rules of customary international law concerning maritime zones.[61] The 1958 Geneva Conventions have even made separate regimes in separate instruments for the territorial sea and the contiguous zone, the high seas, and the continental shelf. UNCLOS II held in 1960 has furthered the development of maritime zoning by consolidating the concept of exclusive fishery zone, up to 12 nautical miles from the baselines. On the basis of these maritime zones, many regimes have been created for the conservation of marine living resources and the protection of the marine environment.

ICJ has contributed to the development of zonal approaches by providing a legal basis for the system of straight baselines and the fishery jurisdiction of the coastal States.

In the Anglo-Norwegian Fisheries case (1951),[62] ICJ provided a criterion for the contemporary maritime zoning, by recognizing the Norwegian system of straight baselines as the starting points of measuring fishery jurisdiction of the coastal State. Afterwards, the system of straight baselines, concurrently with low-water marks, has been developed as a basis for measuring outer limits of different zones under national

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fisheries."

[61] As for the areas under national jurisdiction, the 1958 Geneva Conventions have established the territorial sea, contiguous zone, fishery zone and continental shelf. But the Convention on the Territorial Sea and Contiguous Zone did not define the breadth of the territorial sea.

jurisdiction, i.e. the territorial sea, contiguous zone, exclusive fishery zone, EEZ and the continental shelf.

In the Iceland-UK (and Iceland - the Federal Republic of Germany) Fisheries Jurisdiction case (1972-74), ICJ, recognizing the preferential fishing rights of Iceland in the areas between the 12-mile and 50-mile limits as well as the traditional fishing rights of the United Kingdom (and Germany), held that Iceland and the UK (and Germany) were under mutual obligations to undertake negotiations in good faith for an equitable solution of their differences. [63] Although the Court recognized the traditional rights of the fishing States, the basic idea which underlies this decision is the legitimation of the right of the coastal State to establish its preferential fishery zone up to certain limits beyond its territorial sea.

2.2.1.3 Species approach combined with zonal approach in the pre-UNCLOS regimes

The regime under the Convention for the Conservation of Salmon in the North Atlantic Ocean[64] is based on a species approach in that it was established to promote the conservation, restoration, enhancement and rational management of salmon stocks in the North Atlantic Ocean. But this regime combines this species approach with a zonal approach by stipulating some rules based on the fisheries jurisdictions of coastal States.[65]

2.2.1.4 Ecosystem approaches in the pre-UNCLOS regimes

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[62] *ICJ Reports*, 1951

[63] In the Fisheries Jurisdiction case between the United Kingdom and Iceland, ICJ held that "In order to reach an equitable solution of the present dispute it was necessary that the preferential rights of Iceland should be reconciled with the traditional fishing rights of the United Kingdom through the appraisal at any given moment of the relative dependence of either State on the fisheries in question, while taking into account the rights of other States and the needs of conservation." In the Fisheries Jurisdiction case between the Federal Republic of Germany and Iceland, ICJ held the identical position. Fisheries Jurisdiction Case, merits, *ICJ Reports*, 1974

[64] Convention for the Conservation of Salmon in the North Atlantic Ocean done at Reykjavik, 1982

[65] Under Article 2, "Fishing of salmon is prohibited beyond areas of fisheries", and "Within areas of fisheries jurisdiction of coastal States, fishing of salmon is prohibited beyond 12 nautical miles from the baselines from which the breadth of the territorial sea is measured."

The 1980 Convention on the Conservation of Marine Living Resources of Antarctica (CCAMLR) is "a path-breaking example of the ecosystem approach to resource conservation and management."[66] The issue-area of the regime under CCAMLR is the conservation of Antarctic Marine living resources at the ecosystem level.[67] The geographical scope of CCAMLR, defined on the basis of the boundaries of the Antarctic ecosystems, is composed of two parts; "the area south of 60 degrees South latitude", and "the area between that latitude and the Antarctic Convergence."[68] The Antarctic Convergence, which goes beyond the geographical scope of the Antarctic Treaty, was chosen as the natural biological frontier where warmer waters flowing south meet the colder Antarctic waters, separating distinct maritime communities on either side.[69]

The principles of conservation adopted by CCAMLR focus on the conservation of the Antarctic ecosystem, as it emphasizes the importance of the "maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations...", and the "prevention of changes or minimization of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades..."[70]

The ecosystem approach of the regime under CCAMLR is partially combined with zonal approaches, by recognizing the sovereign rights of the coastal States over the coastal seas around some islands located within the limits of the Convention area.[71]

2.2.2 The UNCLOS approaches for the conservation of marine resources

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[66] Catherine Redgwell, Protection of Ecosystems under International Law: Lessons from Antarctica, in Alan Boyle and David Freestone (eds.) International Law and Sustainable Development, Oxford University Press, 1999, pp. 205-224

[67] Antarctic marine living resources mean the populations of finfish, molluscs, crustaceans and all other species of living organisms, including birds, found south of the Antarctic Convergence. CCAMLR, Article I, para.2

[68] CCAMLR, Article I

[69] See Simon Lyster, International Wildlife Law, Cambridge University Press, 1985, p. 161

[70] Article II, para. 3

[71] For EEZs surrounding the islands such as Kerguelen, Crozet, Prince Edward, Marion, McDonald, Heard, Falklands, South Georgia, South Sandwich, etc. the sovereign rights of the coastal States are exercised, but in harmony with the CCAMLR regime.
See Daniel Vignes, Le régime de la pêche maritime dans l'Antarctique, in Daniel Vignes, Giuseppe Cataldi et Rafael Casado Raigon (ed.), Le Droit International de la Pêche Maritime, Editions de l'Université de Bruxelles, 2000, pp.245-279

The 1982 UNCLOS has further elaborated the system of maritime zoning which had been incompletely established by the 1958 Geneva Conventions.[72] The 1982 UNCLOS has defined the breadth of the territorial sea, the contiguous zone, EEZ, the continental shelf, the archipelagic waters. It has also provided the principles of delimitation of these zones. The attribution of the rights and obligations to these categories of States constitutes a legal foundation for many international regimes for the conservation of marine living resources and for the protection of the marine environment.

The 1982 UNCLOS envisages also species approaches for the conservation of some particular species, such as the "stocks occurring within the exclusive economic zones of two or more coastal States or both within the exclusive economic zone and in an area beyond and adjacent to it",[73] highly migratory species,[74] marine mammals,[75] anadromous stocks,[76]catadromous species. [77] Species approaches for these stocks are coupled with zonal approaches, since the Convention recognizes the rights and duties of the coastal States on the conservation of these species (except for the marine mammals). However, the Convention indicates that the strict separation of the coastal zones from the high seas is not appropriate.[78]

The 1982 UNCLOS lays down many provisions inspired by ecosystem considerations. For example, States are required to take into account "the interdependence of stocks",[79] "the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated

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[72] In the 1958 Geneva Convention on the Territorial Sea and Contiguous Zone, the breadth of the territorial sea was not defined.

[73] Article 63

[74] Article 64

[75] Articles 65 and 120

[76] Article 66

[77] Article 67

[78] For the transboundary or straddling fish stocks and highly migratory species, the Convention requires the coastal States and distant water fishing States to agree upon necessary conservation measures.

For the conservation of marine mammals, the Convention does not restrict the right of the coastal State or the competence of an international organization to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for other species and requires States to cooperate.

For the conservation of anadromous species, the Convention provides for special rights and responsibility of the State of origin. See Daniel Vignes, Giuseppe Cataldi et Rafael Casado Raigon, Le Droit International de la Pêche Maritime, Editions de l'Université de Bruxelles, 2000, p. 235

For the conservation of catadromous species, the Convention provides for a special responsibility of the coastal State in whose waters such species spend the greater part of their life cycle.

[79] Article 61, para. 3, Article 119, para. 1 (a)

and dependent species."[80] Concerning the activities in the Area, the Convention draws attention to the importance of the ecological balance of the marine environment.[81] In taking measures to prevent, reduce and control pollution of the marine environment, States are required to include the necessary measures to protect and preserve rare and fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.[82]

2.2.3 Post-UNCLOS approaches for the conservation of marine resources

2.2.3.1 Species approaches in the post-UNCLOS regimes

Many regimes have, as their issue-areas, the conservation of migratory species whose "ranges"[83] exceed the outer limits of the areas under national jurisdiction. Most of such regimes adopt species approaches.

The 1992 Amendment to the Whaling Convention continues to embrace the species approach of the 1946 Whaling Convention for the conservation of the species of whales.[84] The 1984 Protocol Amending the International Convention for the Conservation of Atlantic Tunas[85] follows the species approach of the 1966 Atlantic Tunas Convention.

Different regimes for the protection of cetaceans adopt also species approaches, with notable ecosystem considerations. The cetaceans regimes under the 1991 Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) and the 1996 Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) are based on species approaches. [86]

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[80] Article 61, para. 4, Article 119, para 1. (b)

[81] In Article 145, the Convention requires the ISBA to adopt appropriate rules, regulations and procedures for the prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment.

[82] Article 194, para.5

[83] The 1979 Convention on the Conservation of Migratory Species of Wild Animals defines "range" as all the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overlies at any time on its normal migration route. Article I 1. f)

[84] Amendments to the Schedule to the International Convention for the Regulation of Whaling of 2 December 1946 (Adopted at Glasgow on 3 July 1992)

[85] The 1984 Protocol Amending the International Convention for the Conservation of Atlantic Tunas, adopted at Paris on 10 July 1984

[86] For the Regimes under Ascobans and Accobams, see Robin Churchill, Sustaining Small Cetaceans: A Preliminary Evaluation of the Ascobans and Accobams Agreements, in Alan Boyle and David Freestone

The issue-area of these regimes is the conservation of specific species, i.e. small cetaceans and cetaceans. Their geographical scopes, termed "Area of the agreement" or "Agreement area", are defined according to the range of these species,[87] irrespective of jurisdictional zones. The conservation measures focus on the achievement and maintenance of a favourable conservation status of cetaceans. These regimes introduce many elements of the ecosystem approach, such as the recognition of the fact that cetaceans are an integral part of marine ecosystems[88] and the awareness of the close relationship of the conservation status of cetaceans with their habitats, pollution, reduction of food resources. However, these regimes remain in species approaches in that their issue-areas are confined to the conservation of specific species rather than the entire ecosystems to which they belong. The 1991 Action Plan for the Conservation of Cetaceans in the Mediterranean Sea also adopts a similar approach.

The regime under the 1990 Agreement on the Conservation of Seals in the Wadden Sea adopts a species approach. Its issue-area is the conservation of Wadden Sea Seals, its geographical scope is defined according to the range of the Wadden Sea Seals, across the jurisdictional boundaries. Without relying on the rights based on the jurisdictional maritime zones, the regime prohibits States from taking Seals.

2.2.3.2 Zonal approaches in the post-UNCLOS regimes

The 1992 Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region is based on a zonal approach in that it is aimed at reinforcing cooperation in fisheries surveillance and law enforcement on the basis of the "sovereign rights for the purposes of exploring and exploiting, conserving and managing the fisheries resources of their exclusive economic zones and fisheries zones."[89]

2.2.3.3 Species approach combined with zonal approach in the post-UNCLOS regimes

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(eds.), International Law and Sustainable Development, Oxford University Press, 1999, pp.225-252

[87] ASCOBANS, Article 1.2 (b), ACCOBAMS, Article I 1. a)

[88] ASCOBANS, Preamble, ACCOBAMS, Preamble

[89] Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region,

Many fisheries regimes established after the conclusion of the 1982 UNCLOS combine species approaches with zonal approaches. Their issue-areas are confined to the conservation of specific species, but their conservation measures are based on the jurisdictional zones.

For example, the 1993 Convention for the Conservation of Southern Bluefin Tuna was concluded for the conservation of southern bluefin tuna which migrates through exclusive economic or fishery zones. But the conservation measures are to be taken without affecting the sovereign rights of the coastal States in their corresponding EEZs or exclusive fishery zones.[90]

The 1994 Bering Sea Doughnut Hole Convention purports to conserve the pollock resources in the Bering Sea.[91] The geographic scope of the Convention is limited to the Doughnut Hole, the high seas of the Bering Sea beyond EEZs of the coastal States, except for activities for scientific purposes.[92]

The fisheries regime for the Sea of Okhotsk Peanut Hole for the conservation of Pollock stocks in the enclave high seas of the Sea of Okhotsk was established to conserve specific stocks on the basis of the rights of Russia over its EEZ which surrounds the Peanut Hole in the high seas.[93]

The regime for fisheries in the Loophole of the Barents Sea takes a similar approach, purporting to conserve the cod stock in the Barents Sea on the basis of the

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done at Honiara, 9 July 1992, Preamble

[90] The 1993 Southern Bluefin Tuna Convention declares; "the coastal States through whose exclusive economic or fishery zones southern bluefin tuna migrates exercise sovereign rights within such zones for the purpose of exploring and exploiting, conserving and managing the living resources including southern bluefin tuna;", Preamble

[91] Convention on the Conservation and Management of Pollock Resources Central Bering Sea was signed in 1994 by the coastal States (USA, Russia) and distant water fishing States (People's Republic of China, the Republic of Korea, Japan, Poland).

[92] Article I
Considering the range of the Bering Sea pollock stocks which straddle the boundaries between the high seas and EEZs, it is provided that activities for scientific purposes may extend beyond the Convention Area within the Bering Sea.

[93] See Alex G. Oude Elferink, The Sea of Okhotsk Peanut Hole De Facto Extension of Coastal State Control, in Olav Schram Stokke (ed.) Governing High Seas Fisheries, op.cit., pp. 179-205
See also Evelyne Meltzer, Global Overview of Straddling and Highly Migratory Fish Stocks: The Nonsustainable Nature of High Seas Fisheries, *ODIL*, Volume 25, 1994,

division between EEZs of the coastal States (Russia and Norway) and the remaining high seas.[94]

The 1995 Agreement adopts a multi-species approach coupled with a zonal approach. Its issue-area is the long-term conservation and sustainable use of particular species, i.e. straddling fish stocks and highly migratory fish stocks.[95]Although the jurisdictional barrier is somewhat mitigated by the obligation of the coastal State and distant water fishing States to cooperate in maintaining compatibility of conservation and management measures inside and outside of 200 miles and to take into account the biological unity, the regime is based on the jurisdictional division cutting the range of straddling fish stocks and highly migratory fish stocks.

2.2.3.4 Ecosystem approaches in the post-UNCLOS regimes

The 1992 UNCED instruments place particular emphasis on the ecosystem approach. The 1992 Rio Declaration calls for States to cooperate to protect and restore the health and integrity of the Earth's ecosystem.[96] The 1992 Convention on Biological Diversity emphasizes the importance of the preservation of ecosystems and the inseparability of the concept of biological diversity from that of ecosystems, when it defines *Biological diversity* as the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.[97] Agenda 21, Chapter 17 calls for States to preserve and protect marine ecosystems. The most important contribution made by Agenda 21 to the progress of the ecosystem approach is the introduction of the concept of 'the integrated management and sustainable development of coastal and marine areas', by which a particular attention is drawn to the biological unity between marine ecosystems and terrestrial ecosystems.[98]

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[94] See Olav Schram Stokke, The Loophole of the Barents Sea Fisheries Regime, in Olav Schram Stokke (ed.) Governing High Seas Fisheries, op.cit., pp. 273-301

[95] Article 2

[96] The 1992 Rio Declaration, Principle 7

[97] Article 2

[98] For this reason, Agenda 21 declares that priority should be accorded to: coral reef ecosystems, estuaries; temperate and tropical wetlands, including mangroves; seagrass beds; other spawning and nursery areas. Agenda, Chapter 17, para. 17.85

When the ecosystem approach is combined with the concept of integrated management of coastal and marine areas as in Agenda 21, greater priority is naturally given to the protection of the marine ecosystem from land-based pollution.[99] In this line, the 1995 Washington Declaration on protection of the Marine Environment from Land-Based Activities and the ensuing Global Programme of Action for the Protection of the Marine Environment from Land-based Activities have paid much attention to the impact of the land-based activities on the marine ecosystems.[100]

The 2000 Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific adopts an ecosystem approach coupled with a zonal approach. The South Pacific Permanent Commission (SPPC) is created to coordinate the maritime policies of the coastal States and to promote the adoption of measures to preserve the environment and protect the integrity of the South Pacific's marine ecosystem.[101] This Agreement is based on the zonal approach in that it relies on the sovereign rights of the coastal States over EEZs although it is intended to extend these rights beyond the 200 miles and applicable to a certain part of the high seas of the South Pacific.[102]

The 2001 Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean adopts a similar approach. This Convention purports to realize the long term conservation and sustainable use of all living marine resources in the South-East Atlantic Ocean and to safeguard the environment and marine ecosystems in which the resources occur.[103] The Convention is applicable to a certain part of the high seas of the South-East Atlantic Ocean.[104]

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[99] For the interdependence between the issue of the protection of marine ecosystems and the land-based activities, see André Nollkaemper, Balancing the Protection of Marine Ecosystems with Economic Benefits from Land-Based Activities: The Quest for International Legal Barriers, *ODIL*, 17:153-179, 1996

[100] The 1995 Washington Declaration recognizes "the interdependence of human populations and the coastal and marine environment, and the growing and serious threat from land-based activities, to both human health and well-being and the integrity of coastal and marine ecosystems and biodiversity." Preamble

[101] Preamble

[102] Article 3 "The Framework Agreement shall apply exclusively to the high seas of the Southeast Pacific, encompassed by the outer limits of the coastal States' national jurisdiction zones and a line traced along the complete length of the 120 west meridian of longitude, from the 5 north parallel of latitude to the 60 south parallel of latitude."

[103] Preamble

[104] The Convention area is defined as all waters beyond areas of national jurisdiction in the area bounded by a line joining the following points along parallels of latitude and meridians of longitude:

2.3 Conclusion

The principal merit of species approaches resides in the relative simplicity in devising conservation measures. But the conservation of one or more particular species may have little meaning in the context of marine ecosystems. In an effort to make up for this shortcoming of species approach, many instruments lay down provisions which require the parties to take into consideration the effects of conservation measures on species associated with or dependent upon the target species.

Zonal approaches simplify the enforcement of conservation measures. In some situations, maritime zoning may become an obstacle to the species or ecosystem approaches by cutting the range of a given species or the boundary of a given ecosystem into different jurisdictional zones. However, when properly combined with species or ecosystem approaches, zonal approaches may contribute to the enhancement of the effectiveness of conservation measures by relying on the sovereign rights of the coastal States.

Compared to species approaches or zonal approaches, ecosystem approaches are conceptually more sophisticated and ecologically better justified. From the 1980s, even the regimes which do not adopt an ecosystem approach tend to emphasize the importance of ecosystem integrity. The main difficulty in applying an ecosystem approach resides in devising conservation measures, taking into account all the ecological complexities of the ecosystem. To apply an ecosystem approach to a given ecosystem, thorough scientific knowledge on the complex mechanisms of the ecosystem and its surrounding environment is required as a prerequisite.[105] For these reasons, many regimes confine themselves to providing a legal basis for an ecosystem approach by expressing the necessity and importance of the maintenance of ecosystem integrity, without formulating

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— beginning at the outer limit of waters under national jurisdiction at a point 6° South, thence due west along the 6° South parallel to the meridian 10° West, thence due north along the 10° West meridian to the equator, thence due west along the equator to the meridian 20° West, thence due south along the 20° West meridian to a parallel 50° South, thence due east along the 50° South parallel to the meridian 30° East, thence due north along the 30° East meridian to the coast of the African continent. Article 4

[105] In this sense, the 1980 CCAMLR states; "it is essential to increase knowledge of the Antarctic marine ecosystem and its components so as to able to base decisions on harvesting on sound scientific information." Preamble

concrete measures to that end. By doing so, the founders of such regimes may expect that the regimes will be able to be supplemented by subsequent measures on the basis of better scientific information to be developed in the future.[106]

The 1982 UNCLOS has made an important contribution to the development of the ecosystem approach by introducing many elements of ecosystem approach. These elements are not sufficient to form a complete ecosystem approach in that they are provided in a fragmentary way and the Convention divides oceans and seas into different jurisdictional zones which are not congruent with ecosystem boundaries. However, the incomplete ecosystem approach may evolve further toward appropriate ecosystem approaches, by means of reinterpretation, conclusions of additional agreements, or creation of sub-regimes.

3. Sustainable Development and the 1982 UNCLOS

3.1 Concepts

3.1.1 The concept of sustainable development

In 1987, the World Commission on Environment and Development (WCED) presented a definition of the sustainable development; "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[107] This concept was endorsed in the United Nations Conference

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[106] For example, in the regime under the 1980 CCAMLR, the Commission for the Conservation of Antarctic Marine Living Resources is mandated to "formulate, adopt and revise conservation measures on the basis of the best scientific evidence available." Article IX, 1 (f). The Commission has elaborated the conservation measures for the protection of the Antarctic ecosystems.

107 The World Commission on Environment and Development (WCED), Our Common Future (Brundtland Report), Oxford University Press, 1987, p.43

It is not World Commission on Environment and Development that coined the term 'sustainable development'.

The term "sustainable development" first used in a publication of IUCN in 1980. IUCN, World Conservation Strategy: Living Resources Conservation for Sustainable Development, Gland, Switzerland, 1980.

Before the WCED Report, the 1985 Montreal guidelines for the protection of the marine environment against pollution from land-based sources employed the term sustainable development.

on Environment and Development (UNCED) held in Rio de Janeiro in 1992 and has become the most authoritative definition of sustainable development.[108]

Defined as such, the concept of sustainable development is composed of several elements. Some authors presents four elements of sustainable development: the principle of intergenerational equity, the principle of sustainable use, the principle of intra-generational equity, the principle of integration.[109] Some others identify six elements of sustainable development: sustainable utilization; integration of environmental protection and economic development; the right to development; inter-generational equity; intra-generational equity; procedural elements.[110] In addition to these six elements, Patricia Birnie and Alan Boyle find another element; the polluter pays principle.[111]

3.1.1.1 Sustainable utilization

The key principle underlying traditional conservation policies has been sustainable utilization or sustainable use. When applied to reality, the principle of sustainable utilization is often translated into more concrete concepts, such as maximum sustainable yield, optimum sustainable yield, optimum sustainable productivity, etc. The maximum sustainable yield or maximum sustainable productivity is the level which allows the maximum harvest of fish that can, in theory, be caught year after year indefinitely into the future.[112] This idea relies on the reproductive capacity of living resources and the

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What the WCED Report has contributed to the evolution of the concept of sustainable development is the fact that it has established the theoretical scheme of sustainable development, as is generally endorsed by international society.

108 The concept of sustainable development has been introduced into the Rio Declaration on Environment and Development, Agenda 21, the 1992 United Nations Framework Convention on Climate Change, the 1992 Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests (The Forest principles)
Among the instruments adopted in the 1992 UNCED, United Nations Convention on Biological Diversity employs the concept of sustainable use instead of sustainable development.

[109] Philippe Sands, Principles of International Environmental Law, Manchester University Press, 1995, pp.198-208

[110] See Alan Boyle and David Freestone, International Law and Sustainable Development, Oxford University Press, 1999, Introduction, pp. 1-18

[111] Patricia Birnie & Alan Boyle, International Law & the Environment, Second edition, Oxford University Press, 2002, pp. 84-97

[112] See Anthony Charles, Sustainable Fishery Systems, Blackwell Science Ltd., 2001, Chapter 5 Fishery management.
The 1956 Convention on Conservation of North Pacific Fur Seals provides, in its preamble, the concept of maximum sustainable productivity; "Desiring to take effective measures towards achieving the maximum

finiteness of the environmental carrying capacity.[113] Within the limits of these two capacities, can be found the maximum level at which humans can harvest the species without causing the decrease in the population size in the long run.[114] The harvest at this equilibrium point is termed 'the maximum sustainable yield'. In ecological economics, renewable resources are often treated as natural capital, assimilated with interest bearing capital.[115]

When the cost of fishing is taken into account, the maximum sustainable yield, which is based on biological concepts, can be converted into the concept of maximum economic yield (MEY).[116] The optimum sustainable yield, which is created by including a variety of socio-economic considerations into the concept of maximum sustainable yield,[117] means the maximization of "a multi-objective blend of socio-economic values, perhaps including equity, employment and rents, with appropriate weighting of each goal."[118]

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sustainable productivity of the fur seal resources of the North Pacific Ocean so that the fur seal populations can be brought to and maintained at the levels which will provide the greatest harvest year after year, with due regard to their relation to the productivity of other living marine resources of the area."
The 1949 Convention for the Establishment of an Inter-American Tropical Tuna Commission provides, in its preamble, a similar concept of maximum sustained catch; "...maintaining the populations of these fishes at a level which will permit maximum sustained catches year after year."
In other words, maximum sustainable yield is the highest point of the curve traced between the annual standard fishing effort applied by all fleets and the yield that should result if that level were maintained until equilibrium is reached. See Reference Points for Fisheries Management: Their Potential Application to Straddling and Highly Migratory Resources, UN Doc. A/CONF.164/INF/9 (1994) para.27

[113] See Sandra Postel, Carrying capacity: Earth's Bottom Line, in Robert N. Wells, Jr. (ed.) Law, Values, and the Environment, The Scarecrow Press, 1996, p. 168 "Biologists often apply the concept of 'carrying capacity' to questions of population pressures on an environment. Carrying capacity is the largest number of any given species that a habitat can support indefinitely. When that maximum sustainable population level is surpassed, the resources base begins to decline; sometimes thereafter, so does the population."

[114] In terms of the WCED Report, sustainable use means the fact that "renewable resources like forests and fish stocks need not be depleted provided the rate of use is within the limits of regeneration and natural growth." WCED, Our Common Future, Oxford University Press, 1987, p. 45

[115] See Nick Hanley, Jason F. Shögren and Ben White, Environmental Economics, MacMillan Press, 1997, Chapter 7 An Introduction to the Economics of Natural Resource Exploitation.

[116] Because the costs of fishing are supposed to increase with the intensity of exploitation, maximum economic yield (MEY) is determined at a lower level than maximum sustainable yield (MSY). See Christopher D. Stone, Can the Oceans be Harboured? A Four Step Plan for the 21st Century, Review of European Community and International Environmental Law (*RECIEL*), Volume 8, Issue 1, 199, pp. 37-47

[117] Whereas "maximum" is a quantity objective, "optimum" is a quality objective involving value judgement.
The Convention implies that MSY should be qualified by environmental and economic factors. In Articles 61 and 119, the Convention stipulates "...to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors..."

[118] Anthony Charles, Sustainable Fishery Systems, Blackwell Science Ltd., 2001, p.87

In spite of the attractive rationale which supports the principle of sustainable use, the limit of its merits resides in the fact that it is a kind of micro-analytical rational choice model *in vitro*, applicable to individual species, without taking into account the complex ecosystems. Optimum utilization at the species level does not necessarily mean optimum utilization at the ecosystem level. To be more realistic, the logic of the sustainable use should be integrated into a wider and systemic perspective, as the WCED report asserts; "maximum sustainable yield must be defined after taking into account system-wide effects of exploitation."[119]

3.1.1.2 Integration of environmental protection and economic development

Sustainable development is a conceptual model for integrating environmental protection and development objectives.[120] Environmental protection and economic development are seemingly conflicting goals which sustainable development purports to reconcile,[121] as ICJ states; "This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development."[122] Before the formulation of the concept of sustainable development by the 1987 WCED Report, international society had expressed the necessity of harmonizing development with the protection of the environment.[123] In 1992, UNCED declared; "in order to achieve sustainable development, environmental protection shall constitute an integral part of the

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[119] WCED, Our Common Future, Oxford University Press, 1987, p. 45

[120] See Günther Handl, in Winfried Lang (eds.), Sustainable Development and International Law, Graham & Trotman: Martinus Nijhoff, 1995, p.35
The idea of integration of development and environment was already developed in the 1971 Founex Report, Development and Environment: Report and Working Papers of a Panel of Experts Convened by the UNCHE, the 1972 UNCHE Declaration, the 1982 World Charter for Nature, the ECOSOC Resolution 1536 (XLIX), the UN General Assembly Resolutions 2657 (XXV), 2849 (XXVI), 297 (XXVII)

[121] For Mary Pat Williams Silveira, "The Rio Declaration, Agenda 21, the Forest Principles, the Framework Convention on Climate Change and Biodiversity Convention, together and separately, mark the marriage of environment and development. This is a major achievement. For decades there has been a tug of war between environment and development. For many countries and many different actors, they were viewed as irreconcilable opposites." Mary Pat Williams Silveira, in Winfried Lang (eds.), op.cit., p.10

[122] ICJ, Case concerning the Gabčíkovo-Nagymaros Project, 25 September 1997, Judgment, para.140

[123] The 1972 UNCHE proclaims; "The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world." I. para.2
The 1982 World Charter for Nature declares; "In the planning and implementation of social and economic development activities, due account shall be taken of the fact that the conservation of nature is an integral part of those activities." para.7

development process and cannot be considered in isolation from it."[124] In this sense, the integration of environment and development can be interpreted as the question of equitable distribution of finite natural resources (renewable or not) among humans of the present generation, or between the present generation and future generations.[125] In other words, sustainable development is the recognition of the right to development for the present and future generations.

<The right to development>

After the General Assembly of the United Nations declared in 1986; "The right to development is an inalienable human right,[126] the Right to Development was reiterated in the 1993 Vienna Declaration on Human Rights,[127] and reaffirmed in the 1992 Rio Declaration.[128] The core of the concept of the right to development is the right of all people to pursue a better quality of life, as the 1972 UNCHE declares; "Economic and social development is essential for ensuring a favourable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life."[129] In the 1982 World Charter for Nature, the right to development is expressed in terms of "the fundamental right to freedom, equality and adequate conditions of life."[130] In the WCED Report, the right to development is paraphrased as "the right to satisfy essential needs of vast numbers of people in developing countries – for food, clothing, shelter, jobs – ' and 'legitimate aspirations for an improved quality of life."[131]

The right to development constitutes the basis for the concepts of intra-generational equity and intergenerational equity.

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[124] Declaration of the UN Conference on Environment and Development, 1992, Principle 4

[125] Günther Handl points out that UNCED documents do not clearly spell out the logical inevitability of the triangular relationship between "sustainable development", limited ecological carrying capacity and distributional consequences. Günther Handl, op.cit. p.39

[126] UNGA Res. 41/128 (1986) "Declaration on the Right to Development".

[127] 1993 World Conference on Human Rights, Vienna Declaration and programme of Action, UN Doc. A/CONF.157/23 (1993) 32 ILM 1661

[128] The Rio Declaration, Principle 3; "The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations."

[129] The 1972 UNCHE Declaration, Principle 8

[130] The 1982 World Charter for Nature, Principle 1

<Intra-generational equity>

The ideal of intra-generational equity reflects the aspiration of developing countries to attenuate the deep gulf between the rich and the poor, as stated in the 1992 Rio Declaration; "All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world."[132] Such concept can be considered to be a new formulation of the right to development.[133] While recognizing the right of all people to pursue economic development which can only be realized with more or less indispensable consumption of natural resources, sustainable development requires that such right be exercised within the bounds of the ecological possible.[134]

Intra-generational equity can be realized by enhancing the capacity of developing countries in their pursuit of the right to development. For this, many international instruments call for the technological and financial assistance to developing countries,[135] and the alleviation of the responsibility of the developing countries in the common effort of international society to protect the environment.[136]

<Intergenerational equity>

Intergenerational equity can be achieved when the humans of the present generation

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[131] WCED Report, p. 43

[132] Principle 5

[133] That is why some authors omit the right to development from the elements of the concept of sustainable development.

[134] WCED, Our Common Future, 1987, pp.43-44

"The satisfaction of human needs and aspirations is the major objective of development. The essential needs of vast numbers of people in developing countries - for food, clothing, shelter, jobs - are not being met, and beyond their basic needs these people have legitimate aspirations for an improved quality of life…Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life. Living standards that go beyond the basic minimum are sustainable only if consumption standards everywhere have regard for long-term sustainability…Perceived needs are socially and culturally determined, and sustainable development requires the promotion of values that encourage consumption standards that are within the bounds of the ecological possible and to which all can reasonably aspire."

[135] For example, Principle 9 of the 1972 UNCHE Declaration states: "Environmental deficiencies generated by the conditions of underdevelopment and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries…"

[136] The 1992 UNCED Declaration and the 1992 Framework Convention on Climate Change have established the concept of common but differentiated responsibilities.

abstain from overexploiting or depleting natural resources on which future generations may depend to meet their own needs. This means an equity perceived in a longer term. Prior to the 1987 WCED Report, the idea of intergenerational equity had already been born in some international instruments, such as the 1946 Whaling Convention[137] and the 1972 UNCHE Declaration,[138] as well as the 1982 World Charter for Nature.[139] The concept of intergenerational equity, as formulated in the WCED Report, is embraced in the 1992 Rio Instruments and other subsequent international instruments.[140]

Conceptually simple and elegant, the concept of intergenerational equity is problematic when it is to be applied to reality. The concept of intergenerational equity is composed of two problematic terms; the needs and the future generations. What will be the needs of future generations? The 'essential needs' – for food, clothing, shelter, energy, water, sanitation, jobs - may be relatively stable from generation to generation. But the 'legitimate aspirations for an improved quality of life' of future generations, which are socially and culturally determined, are difficult to predict,[141] and therefore infinitely variable. What state of natural resources should the present generation bequeath to future generations so as not to compromise their ability to meet their own needs?

The concept of future generations[142] is also extremely elastic and difficult to define. Future generations may include today's younger generations, generations to come in next decades, in next centuries, in next millennia, and so on.[143] Since future generations

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[137] The 1946 International Convention for the Regulation of Whaling recognizes "the interest of the nations of the world in safeguarding for future generations the great natural resources represented by the whale stocks". Preamble

[138] In the 1972 UNCHE, Principle 1 declares; "Man…bears a solemn responsibility to protect and improve the environment for present and future generations." Principle 2 declares; "The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate."

[139] The 1982 World Charter for Nature reaffirms that "man must acquire the knowledge to maintain and enhance his ability to use natural resources in a manner which ensures the preservation of the species and ecosystems for the benefit of present and future generations." Preamble

[140] The principle of intergenerational equity is introduced in the 1992 Rio Declaration, the 1992 Convention on Climate Change and the 1993 Vienna Declaration on Human Rights.

[141] See WCED Report, p. 44

[142] The concept of future generations began to receive attention since it is incorporated into the concept of sustainable development. But, the 1946 Whaling Convention had already used the term future generations, in the same meaning as used in the concept of sustainable development.

[143] For Martin Golding, future generations mean the people who are not born when the present generation is alive. For the generation n, future generations begins from the generation n+3. See Martin Golding, Obligations to future generations, *Monist* 56 (1972), pp. 85-99

remain always in the future, it is the present generation who can stand proxy for the future generations in claiming their rights, as in the *Minors Oposa* case in the Philippines Supreme Court.[144]

A principle so abstract as this does not directly provide any operational rules. But if it bears a well-founded ideological concept, it can be fecund in generating concrete action-oriented rules. In the context of the concept of sustainable development, intergenerational equity should be perceived as the sense of obligation that the present generation should bear with regard to generations yet unborn, in the perspective of a longer time frame. From this concept, a variety of policy paradigms as well as legal obligations can be derived in dealing with nature.

3.1.1.3 Procedural elements for the application of sustainable development

As an ideological cause, sustainable development is widely embraced by international society. But its concept remains still too abstract and too general to guide human actions in concrete reality. Pending further concretization of the concept of sustainable development and generation of concrete rules therefrom, international society may rely on procedural obligations to legitimise abstract substantive norms.[145] In a similar line, Patricia Birnie and Alan Boyle asserts; "Environmental impact assessment, access to information, and public participation in decision-making perform the function of legitimizing decisions and, if properly employed, may also improve their quality."[146]

The 1992 Rio Declaration requires States to undertake environmental impact

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Dieter Birnbacher perceives future generations in a relatively short term. For him, future generations mean the children and the children of the children. Or, for the generation *n*, future generations begin from the generation *n+1*. By doing so, we can have more sense of responsibility toward future generations. See Dieter Birnbacher, *Verantwortung für zukünftige Generationen* translated into French by Olivier Mannoni *La responsabilité envers les generations futures*, Presses Universitaires de France, 1994, pp. 15-18
For John Peezy, sustainability should be considered in the time scale of millennia, since "a few thousands years is vastly longer than any current political timescale, but does not allow significant natural genetic evolution in human beings." John Peezy, Sustainability: An Interdisciplinary Guide, Environmental Values 1 (1992), p. 323

[144] Moniors Oposa v. Secretary of the Department of Environment and Natural Resources, 33 *ILM* (1994), 173.

[145] See infra. Chapter 6, 1. Decision-making procedures
See also Jean de Munck , *Normes et procédures : les coordonnées d'un débat*, in Jean de Munck and Marie Verhoeven (ed.), *Les mutations du rapport à la norme, Un changement dans la modernité* ? De Boeck Université, 1997,

assessment as a national instrument,[147] and states that environmental issues are best handled with the participation of all concerned citizens, at the relevant level.[148] The 1987 UNEP Goals and Principles of Environmental Impact Assessment calls for States (including their competent authorities) not to undertake or authorize activities without prior consideration, at an early stage, of their environmental effects.[149] EIA and public participation in the decision-making process may be helpful to decision-makers in avoiding environmental overshooting[150] or in making value judgment on the question of what is equity, intra-generational or intergenerational.[151]

3.2 Evolution of the norms on sustainable development

3.2.1 Pre-UNCLOS conservation norms

At the initial stage of the development of international regimes for the conservation of marine living resources, many multilateral treaties embraced the principle of sustainable use paraphrased in different terms such as 'maximum sustainable catch',[152] 'maximum sustainable productivity',[153] 'optimum sustainable yield', etc.

Tuna regimes under the 1949 Convention for the Establishment of an Inter-American Tropical Tuna Commission and the 1966 International Convention for the Conservation of Atlantic Tunas employed the term 'maximum sustained catch' or 'maximum sustainable catch'. The 1956 Convention on Conservation of North Pacific Fur Seals used the term 'maximum sustainable productivity'. The 1958 Geneva

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[146] Patricia Birnie & Alan Boyle, 2001, op.cit, p. 95
[147] Principle 17
[148] Principle 10
[149] UNEP Goals and Principles of Environmental Impact Assessment, 1987, Principle 1
[150] The 1991 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) underlines the importance EIA as a means of preventing, mitigating and monitoring significant adverse environmental impact. Preamble
For the concept of environmental overshooting, see Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, Beyond the Limits, Global collapse or sustainable future, Earthscan, 1992, Chapter 1 Overshoot.
[151] Principle 10 of the 1992 Rio Declaration does not explain how "Environmental issues are best handled with the participation of all concerned citizens." But this provision can be interpreted to mean that a consensual decision among concerned people can be best suitable for the decisions requiring value judgment.
[152] The 1949 Convention for the Establishment of an Inter-American Tropical Tuna Commission and the 1966 International Convention for the Conservation of Atlantic Tunas

Convention on Fishing and Conservation of the Living Resources of the High Seas employed the term "optimum sustainable yield".

In this variety of appellations, the basic idea is the same; to harvest living resources in such a way as to maintain the populations of the species at the level which will provide the greatest harvest year after year, in the context of species approach.

However, even before international society embraced the principle of sustainable development, international society had expressed, in 1970s, its consciousness of the necessity of harmony between development and environment, in the form of the United Nations resolutions and declarations, [154] as well as the World Charter for Nature.[155]

3.2.2 Conservation norms of the 1982 UNCLOS

The traditional principle of sustainable use continues to occupy the central place in the conservationism embraced by the 1982 UNCLOS. However, this Convention has bridged the development of the principle of sustainable use toward the principle of sustainable development by introducing most of the components of the concept of sustainable development; sustainable use, integration of environment and development, intra-generational equity, and some procedural elements of sustainable development.

The concept of sustainable use underlies the 1982 UNCLOS in such terms as 'maximum sustainable yield',[156] 'optimum utilization',[157]and 'allowable catch'.[158] In order to achieve maximum sustainable yield and optimum utilization of the marine living resources in the exclusive economic zone, the Convention empowers and requires the

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[153] The 1956 Conservation of North Pacific Fur Seals

[154] In 1971, UN General Assembly Resolution 2849 (XXVI) on Development and the Environment declared; development plans should be compatible with a sound ecology and that adequate environmental conditions can be best ensured by the promotion of development, at both the national and international levels."
The 1972 UNCHE Declaration declares, in Principle 13, "In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population."

[155] The 1982 World Charter for Nature, para.7; "In the planning and implementation of social and economic development activities, due account shall be taken of the fact that the conservation of nature is an integral part of those activities."

[156] Articles 61, 119

[157] Articles 62, 64

[158] Articles 61, 119

coastal States to determine allowable catch (TAC) in their EEZ.[159] This means that fishing activities in EEZ should be regulated by way of licence. In the territorial sea, it is not written but implied that the same power is vested in the coastal States *a fortiori*. For the living resources of the high seas also, the 1982 UNCLOS indicates that fishing activities will be regulated by means of allowable catch, but without specifying who is empowered to determine the allowable catch.[160] When many provisions of the Convention call for States to apply proper conservation and management measures in EEZ and in the high seas by means of TAC on the basis of the best scientific evidence available, the underlying rationale is the belief that humans are able and required to act as stewards of living resources.[161] For the non-living resources under national jurisdiction, the Convention vests virtually unrestricted rights in the coastal States. Regarding non-living marine resources, the main concern of the Convention was expressed on possible conflicts between the rights of States, by stipulating "the obligation to have due regard to the rights and duties of other States",[162] "the obligation not to infringe or result in any unjustifiable interference with navigation and other rights and freedoms of other States",[163] and "the general obligation to protect and preserve the marine environment".[164] As for the natural resources in the sea-bed beyond national jurisdiction, the management is entrusted to the International Sea-bed Authority. The core elements of the policy orientation for the resources in the Area are "orderly, safe and rational management",[165] and "equitable sharing of financial and other economic benefits derived from activities in the Area."[166]

Without using the term 'integration of environment and development', the 1982 UNCLOS is oriented toward the balance between the aspiration for development and the

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[159] Articles 61, 62, 66, 69, 70

[160] Article 119 stipulates; "In determining the allowable catch and establishing other conservation measures for the living resources in the high seas, …"

[161] Robin Attfield asserts that "there has been a strong tradition in Europe and lands of European settlement, a tradition of Judeo-Christian origins but not confined to adherents of Judaism and Christianity, of belief that people are the stewards of the earth, and responsible for its conservation, for its lasting improvement, and also for the care of our fellow-creatures, its nonhuman inhabitants. Robin Attfield, The Ethics of environmental concern, 2nd edition, The University of Georgia Press, 1991, p.45

[162] Article 56 para 2

[163] Article 77, para 4

[164] Article 192

[165] Article 150

[166] Article 140

necessity of environmental protection. It expresses the desire of the States Parties to realize "the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment."[167] In dealing with the marine resources, the relevant provisions of the Convention are inspired by the sense of balance between development and environment. The very concept of EEZ signifies that the resources of the coastal seas are to be utilized for the economic development of the coastal State. This standpoint underlies such concepts as maximum sustainable yield and optimum utilization.[168] However, the Convention is intended to counterbalance these rights of the coastal States with the duties of the conservation of the marine living resources[169] and the protection of the marine environment.[170] Similar sense of balance between utilization of the marine resources and environmental protection is also expressed in dealing with the marine living resources of the high seas. When the Convention stipulates; "All States have the right for their nationals to engage in fishing on the high seas…",[171] the marine living resources of the high seas are regarded as economic resources for all peoples of the world. But the Convention lays down the duty of States to adopt with respect to their national measures for the conservation of the living resources of the high seas and to cooperate in the conservation and management of living resources.[172] As for the mineral resources of the Area, the Convention treats them as resources to be utilized "to foster healthy development of the world economy and balanced growth of international trade and to promote international co-operation for the over-all development of all countries, especially developing States."[173] This economic purpose is counterbalanced by the concern on the protection of the marine environment; when the Convention stipulates; "Necessary measures shall be taken in accordance with this Convention with respect to

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[167] Preamble
[168] Article 62, para.2 indicates more directly that marine living resources are economic resources; "In giving access to other States to its exclusive economic zone under this article, the coastal State shall take into account all relevant factors, including, *inter alia*, the significance of the living resources of the area to the economy of the coastal State concerned and its other national interests…"
[169] Articles 56, 61
[170] Article 218, 220
[171] Article 116
[172] Articles 117, 118, 119, 120
[173] Article 150

activities in the Area to ensure effective protection for the marine environment from harmful effects which may arise from such activities."[174]

The 1982 UNCLOS does not employ the term intra-generational equity. But the idea of intra-generational equity permeates the Convention in terms of the just and equitable international economic order,[175] and in many provisions expressing special concerns or preferential treatment for developing States,[176] land-locked States,[177] and geographically disadvantaged States.[178] The concept of the right to development, if not explicitly formulated, is embedded in many provisions expressing the aspiration for "the equitable and efficient utilization of their resources" or "to foster healthy development of the world economy and balanced growth of international trade and to promote international co-operation for the over-all development of all countries, especially developing States."

For the purpose of the protection of the marine environment, the Convention provides some procedural elements, such as monitoring, environmental assessment and access to information. It calls for States to endeavour to observe, measure, evaluate and analyse, by recognized scientific methods, the risks or effects of pollution of the marine environment, and to keep under surveillance the effects of any activities which they permit or in which they engage in order to determine whether these activities are likely to pollute the marine environment.[179] In particular, States are required to publish reports of the results of such monitoring and environmental assessment, [180] and to assess potential effects of activities when States have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment.[181] The Convention contains several provisions on the right of access to information. Article 198 stipulates the obligation of States to notify imminent or actual damage to other States deemed likely to

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[174] Article 145
[175] Preamble
[176] Preamble, Articles 61, 62, 82, 140, 143, 144, 148, 150, 152, 155, 160, 161, 164, 173, 202, 203, 207, 244, 266, 268, 269, 271, 272, 274, 276
[177] Articles 69, 82, 254, 266, 269, 272, 274, Part X
[178] Articles 69, 70, 148, 152, 160, 161, 254, 266, 269, 272, 274
[179] Article 204
[180] Article 205
[181] Article 206

be affected by such damage,[182]to cooperate for the purpose of...encouraging the exchange of information and data acquired about pollution of the marine environment.[183]The duty of States to provide scientific and technical assistance to developing countries[184] can be also understood in the context of the access to information.

As such, the 1982 UNCLOS contains almost all elements of the concept of sustainable development. What is missing in the Convention to form the complete concept of sustainable development is the concept of intergenerational equity. For these reasons, the Convention can be considered to be in the process of the formation of the concept of sustainable development. For some authors, "When examining the influence of UNCLOS on the concept of integrated management and sustainable development of marine resources it is necessary to indicate that the formation of this concept has been a long process in which UNCLOS was only a beginning."[185]

3.2.3. Post-UNCLOS conservation norms

<Continuation of the principle of Sustainable use>

Even after the adoption of the 1982 UNCLOS and the universal endorsement of the concept of sustainable development in the 1992 UNCED, sustainable use continues to be the central principle in many regimes for the conservation of the marine living resources. The 1992 Convention on Biological Diversity employs the concept of sustainable use together with sustainable development.[186] The 1994 Bering Sea Doughnut Hole Convention relies on the concepts of maximum sustainable yield and optimum utilization.[187] The 2001 Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean purports to realize sustainable use of all living marine resources and fishery resources.[188]

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[182] Article 198
[183] Article 200
[184] Article 201
[185] Alexander Yankov, The Law of the Sea Convention and Agenda 21: Marine Environmental Implications, in Alan Boyle and David Freestone, (eds.) op.cit., p. 274
[186] Articles 6, 8
[187] Article II
[188] Preamble, Articles 2, 3, 18

<Evolution of the principle of sustainable development>

The 1985 Montreal guidelines for the protection of the marine environment against pollution from land-based sources introduced the term 'sustainable development', without presenting any definition of the term.[189] The 1987 WCED Report and the 1992 UNCED were important phases in the process of the consolidation of the principle of sustainable development. The titles 'the United Nations Conference on Environment and Development' and 'the Declaration of the United Nations on Environment and Development' themselves imply that the dominant theme of the conference and declaration is sustainable development. Agenda 21, Chapter 17, adopted in the 1992 Rio Summit, introduces sustainable development as the principal concept in the field of the marine and coastal environment. Furthermore, by recognizing the 1982 UNCLOS as "the legal basis for the protection and sustainable development of the marine and coastal environment and its resources",[190] Agenda 21 tries to infuse the concept of sustainable development into the Convention. The concept of sustainable development is introduced also into two legally binding treaties adopted in the 1992 UNCED. The United Nations Framework Convention on Climate Change declares; "The Parties have a right to, and should, promote sustainable development."[191] Convention on Biological Diversity stipulates; "Each Contracting Party shall...Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas."[192] In the text of the 1992 Convention on Biological Diversity, the term 'sustainable development' is used only in the context of *in-situ* conservation. But, the Convention as a whole is based on the concept of sustainable development; the objective of the Convention are the conservation of biological diversity and the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources;[193] and the emphasis on the maintenance of

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[189] Para. 5.1

[190] Agenda 21, Chapter 17, Introduction.
The General Assembly of the United Nations also infuse the concept of sustainable development into the 1982 UNCLOS, emphasizing, virtually as an annual ritual, "its fundamental importance of ...for the sustainable use and development of the seas and oceans and their resources." UNGA Resolutions A/RES/51/34 (1997), A/RES/52/26 (1998), A/RES/53/32 (1999), A/RES/54/31 (2000), A/RES/55/7 (2001)

[191] The 1992 Framework Convention on Climate Change, Article 3, para.4

[192] Article 8, (e)

[193] Article 1

biological diversity constitutes an essential element of the concept of strong sustainability,[194]

After Rio, the concept of sustainable development is welcomed by many conventions, such as the 1993 Convention for the Conservation of Southern Bluefin Tuna,[195] the 1994 United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa,[196] the 1994 Energy Charter, etc.[197]

The 1995 Agreement relies on the concept of sustainable use, rather than sustainable development.[198]

In the 1990s, the concept of sustainable development began to be introduced in the jurisprudence of international courts. The case concerning the Gabčíkovo-Nagymaros project was the first to draw attention on the concept of sustainable development in the ICJ's jurisprudence. But the court was very cautious in using the concept of sustainable development. Without attributing a clear legal status to the concept of sustainable development, ICJ considered it as one of the "new norms and standards…which have to be taken into consideration".[199]

3.3 Conclusion

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[194] Strong sustainability "would require maintaining both man-made and natural capital intact separately, on the assumption that they are really not substitutes but complements in most productive functions." See Herman Daly, Steady-State Economics, Second edition, 1992, Earthscan, p. 254,
For the concept of strong sustainability see also D.W. Pearce, A. Markandya and E.B. Barbier, Blueprint for a Green Economy, 1989, Earthscan, p. 37, and Michael Redclift, Sustainable Development: Needs, Values, Rights, *Environmental Values* 2 (1993), p. 18
In contrast with strong sustainability, 'weak sustainability' is based on the assumption of high degree of substitutability between natural capital and manmade capital, in the extreme, the assumption of Principle of Infinite Intersubstitutability (PII). In such a belief, sustainability is naturally understood as a simple balance of 'human welfare' across time. See Bryan Norton, Sustainability, Human Welfare, and Ecosystem Health, *Environmental Values* 1 (1992), pp. 97-111, and John Peezey, Sustainability: An Interdisciplinary Guide, *Environmental Values* 1 (1992), p.323

[195] Article 8, para 4 (b)

[196] Preamble

[197] Article 19, (1)

[198] The 1995 Agreement employs the term 'sustainable development' only to designate the Commission on Sustainable Development. Article 24, para.1

[199] ICJ, Case concerning the Gabčíkovo-Nagymaros Project, 25 September 1997, Judgment, para.140.

Sustainable development is not a new ideology but a new formulation of an old wisdom, as Judge Weeramantry asserts; "The concept of reconciling the needs of development with the protection of the environment is thus not new. Millennia ago these concerns were noted and their twin demands well reconciled in a manner so meaningful as to carry a message to our age."[200]

The 1982 UNCLOS bears most of the essential elements of sustainable development which go beyond the concept of sustainable use. Although the Convention lacks some elements of the principle of sustainable development, it is consistent therewith. Thus, the Convention has paved the way for the introduction of the principle of sustainable development into the law of the sea. The 1992 UNCED instruments have accelerated this process by complementing the conceptual scheme of the principle of sustainable development, which was inchoate in the 1982 UNCLOS.

In spite of its wide acceptance by legally binding and non-binding instruments in the 1992 UNCED and after, the principle of sustainable development falls short of a concrete injunction ready to dictate human behaviour, and its legal status remains ambiguous to date.[201] The meaning of each component of sustainable development is no less abstract than that of sustainable development. However, the difficulty in applying this abstract principle to concrete reality cannot be a reason to invalidate it. By nature, a principle remains abstract and inapt to dictate directly human behaviour. In regime theoretical concept, a principle is not a rule but a generator of rules. For the principle of sustainable development to guide human behaviour, it should be translated into concrete operational rules. This can be done through subsequent international instruments adopted to embody the principle of sustainable development in particular issue-areas.

4. Precautionary Principle and the1982 UNCLOS

4.1 Concept of the precautionary principle

[200] ICJ, Case concerning the Gabčíkovo-Nagymaros Project, 25 September 1997, Separate Opinion of Vice-President Weeramantry

[201] For Patricia Birnie & Alan Boyle, "Normative uncertainty, coupled with the absence of justiciable standards for review, strongly suggest that there is as yet no international legal obligation that development must be sustainable." Patricia Birnie & Alan Boyle, op.cit., p.96

The 1984 Declaration of the International Conference on the Protection of the North Sea was the first international instrument to adopt the concept of the precautionary approach in the term 'precautionary measures'.[202] Since then, a variety of definitions have been proposed for the precautionary principle or precautionary approach in legal instruments as well as in legal literature.[203]

4.1.1 Conceptual definitions

The Second International Conference on the Protection of the North Sea elaborated the concept of precautionary approach; "in order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence."[204] The subsequent International Conferences on the Protection of the North Sea have continued to reaffirm the necessity of the precautionary principle.[205]

It was in the 1992 UNCED that the precautionary approach was first formulated in an international instrument adopted by global consensus.[206] The 1992 UNCED Declaration defines the precautionary approach in the following terms: "In order to

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[202] The Declaration of the International Conference on the Protection of the North Sea held in Bremen in 1984, para.D4.

[203] It is known that the precautionary principle, as a legal principle, originated from the *Vorsorgeprinzip* applied in German environmental policy and legislation in the 1970s. See Sonja Boehmer-Christiansen, The Precautionary Principle in Germany – enabling Government, in Timothy O'Riordan & James Cameron (ed.), Interpreting Precautionary Principle, Earthscan, 1994, pp. 31-60
See also Konrad von Moltke, The *Vorsorgeprinzip* in West German Environmental Policy, Institute for European Environmental Policy, February 1987
It is recognized that the precautionary principle was philosophically inspired by Hans Jonas. Jonas has contributed to the formation of the precautionary principle by laying particular emphasis on long-term responsibility. See Hans Jonas, Le principe de responsabilité, traduit de l'allemand « *Das Prinzip Verantwortung*, 1979 » par Jean Greisch, Flammarion, 1990.

[204] Second International Conference on the Protection of the North Sea, held in London in 1987, Ministerial Declaration, para. VII.

[205] The Ministerial Declarations adopted in the Third International Conference on the Protection of the North Sea, held in the Hague in 1990 and the Fourth North Sea Conference held in Esbjerg in 1995 employ the term precautionary principle instead of precautionary approach. In the Fifth North Sea Conference held in Bergen in 2002, the Ministerial Declaration does not explicitly use the term precautionary principle or precautionary approach, but there are many paragraphs in which the precautionary principle is embedded.

[206] The concept of precautionary approach had already been introduced in the 1982 World Charter for Nature, although the term 'precautionary approach' is not explicitly used. See para.11 (a), (b)

protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[207]

The United Nations Framework Convention on Climate Change provides the concept of precautionary approach in similar but not identical terms: "The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost."[208]

4.1.2 Operational definitions

Conceptual definitions, as presented above, are so abstract that it is difficult to rely on them in guiding human behaviour in concrete issue-areas.

Agenda 21, instead of formulating a conceptual definition, provides a *modus operandi* to be applied in the field of the marine environment: "A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, *inter alia*, the adoption of precautionary measures, environmental impact assessments, clean production techniques, recycling, waste audits and minimization, construction and/or improvement of sewage treatment facilities, quality management criteria for the proper handling of hazardous substances, and a comprehensive approach to damaging impacts from air, land and water."[209]

Similarly, the 1995 Agreement provides a *modus operandi* of the precautionary approach in the field of the conservation of fish stocks,[210] by elaborating the "guidelines

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[207] The United Nations Declaration on Environment and Development, Principle 15

[208] Article 3, para.3

The 1992 Convention on Biological Diversity also adopts the concept of precautionary approach, while not explicitly using the term; "*Noting also* that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

[209] Para.17.21

[210] The 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the

for the application of precautionary reference points in conservation and management of straddling fish stocks and highly migratory fish stocks."[211] These guidelines require States to use two types of precautionary reference points: Limit reference points and Management reference points. The former set down boundaries which are intended to constrain harvesting within safe biological limits within which the stocks can produce maximum sustainable yield;[212]the latter are intended to meet management objectives, i. e. to maintain or restore populations of harvested stocks, and where necessary associated and dependent species, at levels consistent with previously agreed precautionary reference points. When information for determining reference points for a fishery is poor or absent, provisional reference points shall be set by analogy to similar and better-known stocks.[213]

These operational definitions recommend, not only substantive measures but also some procedural measures that States should take to reduce risks and uncertainty, such as conducting EIA, setting limit reference points, and improving reliable knowledge and information.

4.1.3 Elements of the precautionary principle

<Anticipatory approach>

A precautionary approach is a paradigm of risk management.[214] The concept of risk is composed of two elements; the consequences of a hazard and the probability of occurrence of the hazard.[215] Any risk belongs to the future, as Ulrich Beck asserts; "The

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Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, Article 6

[211] Annex II

[212] Para.2

[213] Para.6

[214] See Marc Mormont, Sociologie de la précaution: Risques et connaissances pertinentes, in Zaccai & Jean Noel Missa (ed.), Le Principe de Précaution, Editions de l'Université de Bruxelles, 1994, pp.183-194
See also R. Castel, La gestion des risques, Minuit, 1982

[215] EU instruments define risk as the combination of the consequences of a hazard and the likelihood of the occurrence of a hazard. In the context of the regulation of commercialization of genetically modified organisms: A "hazard" (harmful characteristics) is defined as the potential of an organism to cause harm to or adverse effects on human health and/or the environment. A "risk" is the combination of the magnitude of the consequences of a hazard, if it occurs, and the likelihood that the consequences occur. See Commission Decision 2002/623/EC of 24 July 2002, Annex I, para.4.2
Ulrich Beck defines risk in modern society as "a systematic way of dealing with hazards and insecurities

centre of risk consciousness lies not in the present, but *in the future*."[216] A precautionary approach commands, necessarily, anticipatory and proactive attitudes, differentiated from reactive ones.[217] This differentiation is clearly shown in Agenda 21, which states; "A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment."[218] The precautionary approach places emphasis on preventive measures to be taken *ex ante,* rather than remedial or compensatory measures *ex post facto*.[219] In this aspect, a precautionary approach is assimilated with a preventive approach, since prevention also deals with the phase prior to the situation where significant harm or damage might actually occur, and the duty to prevent is opposed to the obligation to repair, remedy or compensate.[220] But the distinction between preventive measures and reactive measures is not always clear, because in many cases reactive measures are taken not only to repair or to compensate but also to prevent the repetition of the same damage in the future.[221] In some instruments, preventive measures are defined as actions to be taken *ex post facto* to prevent or minimize damage.[222]

<Behaviour under uncertainty>

Whereas a precautionary approach is a new paradigm, a preventive approach is inherent in all human behaviour. Therefore, a precautionary approach should be differentiated

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induced and introduced by modernization itself." See Ulrich Beck, Risk Society, Towards a New Modernity, translated by Mark Ritter from *Riskogesellschaft*: *Auf dem Weg in eine andere Moderne*, SAGE Publications, 1992, p.21

[216] Ulrich Beck, Risk Society, op. cit., p. 34
In other words, Ulrich Beck says, "By nature, then, risks have something to do with anticipation, with destruction that has not yet happened but is threatening, and of course in that sense risks are already real today." P.33

[217] *Vorsorge* means 'beforehand or prior care and worry'. See Sonja Boehmer-Christiansen, The precautionary Principle in Germany – enabling Government, in Timothy O'Riordan & James Cameron op.cit., 1994, p.38

[218] Para.17.21

[219] See Pierre Lascoumes, La précaution comme anticipation des risques résiduels et hybridation des la responsabilité, *L'Année sociologique,* Etudes sur le risque et la rationalité, Volume 46/1996- N°2

[220] Draft articles on Prevention of transboundary harm from hazardous activities, adopted by the International Commission at its fifty-third session (2001), The report of the International Law Commission on the work of its fifty-third session, 2001, p. 377

[221] Alan Boyle points out; "Even in the *Trail Smelter Case*, Canada was ordered by the tribunal to take specific measures to *prevent* future injury." See Alan Boyle, Land-based sources of marine pollution, *Marine policy*, January 1992

[222] For example, the 1993 Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment defines preventive measures as "any reasonable measures taken by any person, after an incident has occurred to prevent or minimize loss or damage…"Article 2, para.9

from a preventive approach. There is a difference in the range of risks covered by each approach.

Any risk is associated with uncertainty.[223] The distinction between prevention and precaution is parallel with the distinction between identified risk (*risque avéré*) and potential risk (*risque potentiel*).[224] An identified risk means a risk known under probabilistic uncertainty: the causal link is established, but the chances that a certain event occurs can only be measured in terms of probability with a certain degree of confidence. A potential risk means a risk under scientific uncertainty: the causal relationship itself is not scientifically established,[225] and therefore the risk is not probabilistically quantifiable (*risques non probabilisables)*.[226] If a prudential action is taken to avoid a risk under probabilistic uncertainty, it is preventive approach. If a prudential action is taken to avoid a risk under scientific uncertainty, it is precautionary behaviour.

The distinction between prevention and precaution according to this criterion can be illustrated by comparing the measures taken in dealing with the blood contaminated by HIV. It was in 1980 in the US and in 1981 in Europe that AIDS was first recognized. The hypothesis of the transmission of the disease through contaminated blood was formulated in April 1982. The causal relationship between HIV and AIDS was established in April 1984. In the course of this progress of scientific evidence, human reaction has changed. The measure taken by the French government in June 1983 was the selection of blood

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[223] See Ulrich Beck, op. cit. p. 28: "Risks are *in*visible. The implied causality always remains more or less uncertain and tentative." EU definition of risk implies also uncertainty in the term "likelihood that the consequences occur." See Commission Decision 2002/623/EC of 24 July 2002, Annex I, para.4.2

[224] See Dominique Bourg & Jean-Louis Schlegel, Parer aux risques de demain, Le principe de précaution, Editions du Seuil, p. 2001

[225] The Commission of the European Communities presents three factors which trigger recourse to the precautionary principle: Identification of potentially negative effects; Scientific evaluation; scientific uncertainty. Scientific uncertainty results usually from five characteristics of the scientific method: the variable chosen, the measurements made, the sample drawn, the models used and the causal relationship employed. See Communication from the Commission on the precautionary principle COM (2000) 1 final, para.5.1 This means that scientific uncertainty is based on a scientific presumption as a result of scientific efforts. Scientific uncertainty should be distinguished from ignorance.

[226] Philippe Kourilsky, Geneviève Viney, Le principe de précaution, Rapport au Premier minister, Editions Odile Jacob, 2000, p. 19

See also Anthony Giddens, Anthony Giddens, Modernity and Self-Identity, Polity, 1991, p. 137 "The causes and effects of climate change are not established with scientific certainty, and therefore "the dangers posed by global warming are high-consequence risks which collectively we face, but about which precise risk assessment is virtually impossible."

donors. It was a precautionary measure in the sense that it was taken while the causal link was still hypothetical and uncertain. The measure taken by the French government since 1985 is the obligatory blood test before collecting blood. This was a preventive measure because it was taken after the causal link had been established with an acceptable degree of scientific certainty.[227]

This example shows also the fact that it is not the nature of an event but the degree of human knowledge on the event that distinguishes scientific uncertainty from probabilistic uncertainty. In the period between April 1982 and April 1984, the risk of AIDS through transfusion of blood contaminated with HIV remained a risk under scientific uncertainty. After April 1984, as a result of the progress of human knowledge, the risk of the same event has become a risk under probabilistic uncertainty.

However, the distinction between identified risk and potential risk depends not only on objective knowledge but also on the degree of human conviction. An identified risk does not mean a state of a complete absence of uncertainty.[228]It is the level of certainty of risk required for action that distinguishes the preventive approach and precautionary approach.[229] What is the acceptable level of risk? In a situation where causal relationship itself is not established, it is difficult or meaningless to determine an objective criterion of the acceptable degree of risk. In such a situation, humans cannot but rely on subjective acceptability of risk. Some authors underline the necessary involvement of a sense of 'construction' in the configuration of risk-perception.[230] For

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[227] See Michel Setbon, Le cas du sang contaminé confronté au principe de précaution, in Philippe Kourilsky, Geneviève Viney, op.cit., Annexe 4, pp. 387-402.
See also Michel Callon, Pierre Lascoumes, Yannick Barthe, , Agir dans un monde incertain, Editions du Seuil, 2001, op. cit. p. 270

[228] See Michel Callon, Pierre Lascoumes, Yannick Barthe, op.cit., p. 268 : « Un risque potentiel est construit à partir d'un faisceau d'indices et d'hypothèses qui ne sont pas encore scientifiquement validées mais permettent de déclencher une alerte. Son identification repose sur la mise en relation d'informations hétérogènes, produites aussi bien par la recherche confinée que par la recherche de plein air, qui permettent progressivement de cantonner l'incertitude…Une fois le risque avéré, c'est-à-dire connu dans ses manifestations et expliqué, les décisions ultérieures relèvent de la prévention. Cela ne veut pas dire que toute incertitude a disparu et que toutes les preuves sont apportées. »

[229] See Daniel Bodansky, The Precautionary Principle in US Environmental Law, in Timothy O'Riodan & James Cameron op.cit., p. 203
See also Kenneth Calman & Denis Smith, Works in theory but not in practice? The role of the precautionary principle in public health policy, *Public Administration*, an international quarterly, Volume 79 Number 1, 2001, pp.185-204

[230] Barbara Adam and Joost van Loon, Positioning Risk; the Challenge for Social Theory, in Barbara Adam, Ulrich Beck and Joost van Loon (ed.), The Risk Society and Beyond, SAGE Publications, 2000, p. 2

Ulrich Beck, for example, technologically induced risks, such as radioactivity, toxins and pollutants in the air, the water and foodstuffs, which completely evade human perceptive abilities or generally remain invisible, are based on causal interpretations, and thus only exist in terms of the (scientific or anti-scientific) knowledge about them. They can thus be changed, magnified, dramatized or minimized within knowledge, and to that extent they are particularly *open to social definition and construction.*[231] In this sense, risks imply collective decision-making.[232] The commercial dispute between the United States and the European Union on the subject of trade of the genetically modified organisms (GMOs) is a typical example of the fact that risk perception depends on social construction.[233]

<Threats of serious and irreversible consequences>

A precautionary approach is a paradigm of human behaviour in coping with a certain category of risks. It is impossible for humans to live a completely risk-free life. In everyday life, humans run a certain degree of risks, when they eat, sleep, walk, swim, drive a car, or take a flight. The risks in question in the precautionary principle are not the risks of this kind but the risks which threaten serious or irreversible damage. Most, not all, of these risks are the "new risks" introduced by modern technology (technico-scientifically produced risks). For Anthony Giddens, these 'high-consequence risks' have

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[231] Ulrich Beck, op. cit, pp.22-23 Ulrich Beck asserts also: "the historically novel quality of today's risks derives from internal decision. They depend on a simultaneous scientific and social construction. P.155
See also Denis Duclos, La construction sociale du risque, le cas des ouvriers de la chimie face aux dangers industriels, *Revue française de sociologie*, XXVIII, 1 (1987), pp. 17-42
Patrick Peretti-Watel, Sociologie du risque, Armand Colin, 2000
Jane Hunt, The Social Construction of Precaution, in Timothy O'Riordan & James Cameron (ed.), Interpreting Precautionary Principle, Earthscan, 1994, pp. 117-125

[232] Barbara Adam and Joost van Loon, Positioning Risk; the Challenge for Social Theory, in Barbara Adam, Ulrich Beck and Joost van Loon (ed.), op.cit, p. 13
See also Mary Douglas & Aaron Wildavsky, Risk and Culture, University of California Press, 1984
Claude Fischler, Alimentation contemporaine et perception du risqué, in Université de tous les savoirs, La nature et les Risques, Poches Odile Jacob, 2002, pp.86-97

[233] The European Union regulates the commercialisation of GMOs on the basis of the precautionary principle: See Council Directive 90/220/EECof 23 April 1990, Council Directive 2001/18/EC of March 2001 repealing Council Directive 90/220/EEC, Commission Decision 2002/623/EC of 24 July 2002.
For the US government, this EU regulation does not conform to the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement). See Christine Noiville et Pierre-Henri Gouyon, Principe de précaution et organismes génétiquement modifies. Le cas du Maïs transgénique, in Philippe Kourilsky & Geneviève Viney (ed.), op.cit., pp. 277-340

a distinctive quality: "The more calamitous the hazards they involve, the less we have any real experience of what we risk: for if things 'go wrong', it is already too late."[234]

Irreversible damage signifies technical impossibility of the return to the *status quo ante*,[235] while serious damage implies economic impossibility without excluding technical possibility.[236] However, the distinction between irreversible or serious damage from ordinary damage is relative one.[237]

4.2 Legal implications of the precautionary principle

4.2.1 The precautionary principle and proportionality

The definition of precautionary approach is qualified by the term "cost-effective" in the 1992 UNCED Declaration, and by the term "cost-effective so as to ensure global benefits at the lowest possible cost" in the 1992 Climate Change Convention. These qualifications signify the integration of the concept of proportionality with the precautionary principle.

Risks lurk not only in action but also in inaction. In order to minimize damage, it is therefore necessary to weigh the risks on both sides. If the precautionary principle is applied in an absolutist way on the basis of cost-oblivious standards, it might cause more serious damage or paralyze many human activities.[238] The controversy on the use of DDT

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[234] Anthony Giddens, op.cit., p. 122
Giddens points out another character of the new risks: "Risk assessment endeavours in the case of high-consequence risks have to be correspondingly different from those concerned with risks where outcomes can be regularly observed and monitored – although these interpretations have to be constantly revised and updated in the light of new theories and information."

[235] For example, if a species is completely extinguished, it cannot be restored.

[236] In case of serious damage, the cost of reparation or restoration is too high to undertake the restoration. For example, if an oil tanker grounds, it would not be technically impossible to remove completely the oil slick. For example, if a marine ecosystem is destroyed, it will be too costly and take too long to restore it. When the cost of restoration is too high, such damage cannot be covered by insurance.

[237] For example, the 1992 Convention for the Protection of the Marine Environment of the North East Atlantic (Paris Convention) requires States Parties to apply the precautionary principle to all kinds of damage, as enumerated in the definition of marine pollution: "The Contracting Parties shall apply…the precautionary principle, by virtue of which preventive measures are to be taken when there are reasonable grounds for concern that substances or energy introduced, directly or indirectly, into the marine environment may bring about hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship between the inputs and the effects." Article 2, para.2 (a)

[238] See William H. Rodgers, Jr. Benefits, Costs and Risks: Oversight of Health and Environment Decisionmaking, *Harvard Environmental Law Review*, 4 (1980), pp.191-226

is an example of this dilemma. DDT is classified in the category of persistent organic pollutants (POPs) that threaten the health of humans and wildlife. For this reason, WWF has called for a global DDT ban, invoking the precautionary principle.[239] On the other hand, DDT is proven to be highly efficient in combating malaria.[240] And according to WHO, some 1.1 million people die from malaria each year.[241] To use or not to use DDT? In most developed countries where malaria has been eradicated (and DDT had contributed much to extinguishing malaria mosquitos), DDT has been banned long since.[242] In many developing countries where the death rate due to malaria is still very high, the damage caused by not using DDT might outweigh the damage caused by using DDT.[243] In the 2001 Stockholm Convention on Persistent Organic Pollutants, a provisional compromise was made in such a manner as to allow the use of DDT until appropriate substitutes will be developed.[244] Similarly, most newly developed medicines and GMOs are characterized by this kind of dual aspect of risks coming from action (use) and inaction (nonuse). [245] If a decision-maker is one-sidedly preoccupied with the risks

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[239] WWF, Persistent Organic Pollutants: Hand-Me-Down Poisons That Threaten Wildlife and People, Issue Brief. World Wildlife Fund, 1999

[240] See Indur M. Goklany, Applying the Precautionary Principle in a Broader Context, in Julian Morris (ed.), Rethinking Risk and the Precautionary Principle, 2000, Butterworth-Heinemann, pp. 189-228.
Roberts, D.R. et al. DDT, Global Strategies, and a Malaria Control Crisis in South America, *Emerging Infectious Diseases* 3 (1997), pp. 295-301, Roberts D.R., S. Manguin, and J. Mouchet, DDT House Spraying and Re-Emerging Malaria, *Lancet* 356 (2000), pp.330-32

[241] WHO, The World Health report 2000, World Health Organization, 2000

[242] See Environmental Defense Fund, 1997, 25 Years of DDT Ban, Bald Eagles, Osprey Numbers Soar, Press release, June 13, 1997, www.edf.org/pubs/NewsReleases/

[243] See Indur M. Goklany, The Precautionary Principle, A Critical Approach of Environmental Risk Assessment, CATO Institute, 2001, p. 18 "The fact that the public health effects of DDT are disputed indicates that even if they are real, they are probably not of the same order of magnitude as either the 300 million malaria cases or the 1.1 million estimated deaths due to malaria in 1999 – or they are delayed." See also Attaran, Amir Donald R. Roberts, Chris F. Curtis, and Wenceslaus L. Klima, Balancing Risks on the Backs of the Poor. *Nature Medicine* 6 (2000), pp.729-31

[244] The 2001 Stockholm Convention on Persistent Organic Pollutants, most of the 12 POPs are subject to an immediate ban. However, a health-related exemption has been granted for DDT, under restriction. This will permit governments to protect their citizens from malaria - a major killer in many tropical regions - until they are able to replace DDT with chemical and non-chemical alternatives that are cost-effective and environmentally friendly. See the Stockholm Convention, Annex B

[245] See Philippe Kourilsky & Geneviève Viney, op.cit., p. 43 « Le risque d'agir doit être comparé au risque de ne pas agir. Cette règle qui est au cœur des préoccupations et de la déontologie du corps médical, est l'usage évident dans le domaine de la santé publique où les alternatives du choix ont des conséquences qui, le plus souvent, apparaissent clairement. Ce n'est pas toujours le cas dans les domaines de l'alimentation ou de l'environnement. Par exemple, on peut, à première vue, se dispenser des OGM pour l'alimentation puisque, dans les pays développés du moins, les sources alimentaires sont déjà surabondantes. »

associated with action, he may risk falling into an 'abstentionism', which is not the objective of the precautionary principle.[246]

In the field of environmental protection, a strict application of the precautionary principle could entail virtually infinite real costs[247] and/or opportunity costs.[248] For example, some authors argue that requiring developing countries to reduce greenhouse gases emissions would be particularly devastating to their prospects for economic growth.[249] Even for developed countries, drastic and immediate reduction in the use of greenhouse gases would cause unbearable socio-economic consequences.

On the other hand, a minimalist application of the precautionary principle would reduce the principle to the level of a preventive approach.[250] Some authors point out the danger of the cost-effective measures on the ground that such measures are too subjective and too discretionary.[251]

Reasonable or rationalized precaution can be achieved by ensuring the balance between the positive and negative effects of an action (balancing risks and benefits) as well as the balance between the risks associated with action and those associated with inaction (balancing risks and risks).[252] This requires scientific knowledge combined with

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[246] See Olivier Godard, De la nature du principe de précaution, in Edwin Zaccai & Jean Noel Missa (ed.), Le Principe de Précaution, Editions de l'Université de Bruxelles, 2000, p.25 « Le principe de précaution n'est pas une règle d'abstention. See also Olivier Godard, L'ambivalence de la précaution , in Olivier Godard (dir.) Le Principe de Précaution dans la conduite des affaires humaines, Edition de la Maison des sciences de l'homme, 1997

[247] See David Fleming, The Economics of Taking Care: An Evaluation of the Precautionary Principle, in David Freestone and Ellen Hey (ed.), The Precautionary Principle and International Law, Kluwer Law International, 1996, pp. 147-167

[248] In the dispute concerning the MOX plant, international movements of radioactive materials, and the protection of the marine environment of the Irish Sea (Ireland v. United Kingdom), the United Kingdom presented an argument on the basis of "the likely impact of any delay to plutonium commissioning; such as Loss of revenue from losing contracted business, Cost to BNFL of maintaining the MOX Plant in a "static state", and Damage to BNFL's competitive position caused by continuing delay" as a reason to refute the provisional measures requested by Ireland. This is an argument based on the concept of opportunity cost.

[249] See Indur M. Goklany, op.cit., p. 72, See also Indur M. Goklany, Strategies to Enhance Adaptability: Technological Change, Economic Growth and Free Trade, *Climate Change* 30 (1995), pp.427-49

[250] See Philippe Kourilsky & Geneviève op.cit., pp. 139-141

[251] J. F. Neuray, Le droit à l'environnement et la liberté du commerce et de l'industrie. Réflexions sur un nouveau conflit de normes, Rev. Dr. ULB, N°12, 1995, p.68 : « le recours systématique au principe de proportionnalité n'est pas sans danger, parce que le règle est trop subjective pour offrir au justiciable une garantie absolue. »
See also Christian Gollier, Economie du Principe de précaution, in François Ewald, Christian Gollier, Nocolas Sadeleer (ed.), Le Principe de Précaution, Presses Universitaires de France, 2001, pp. 104-125

[252] See André Nollkaemper, « What you risk reveals what you value », and Other dilemmas Encountered in the Legal Assaults on Risks, in David Freestone and Ellen Hey (ed.), op.cit, pp. 73-94
See also William H. Rodgers Jr., Benefits, Costs and Risks: Oversight of Health and Environmental

social consensus (science for policy). Socially acceptable standards can be determined through processes of political decision based on scientific expertise and transparent public participation.[253] For example, ALARA (as low as reasonably achievable) and BATNEEC (best available techniques not entailing excessive costs) are guidelines designed to generate socially acceptable standards in the light of the concept of proportionality.

The World Charter for Nature articulates the concept of proportionality, by commanding the cost-effective approach: "Activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature."[254] The concept of sustainable development itself is an embodiment of this sense of proportionality, balancing environmental protection and economic development.[255] On the basis of a precautionary approach qualified by proportionality, the Climate Change Convention opts for a gradual reduction of the emission of greenhouse gases.[256] Proportionality is also embedded in the principle of common but differentiated responsibilities in the sense that this principle reflects the differences between different categories of the Parties in their socially acceptable standards. The ILC Draft Articles also introduces the concept of proportionality in the term 'equitable balance of interests'.[257]

Decisionmaking, *Harvard Environmental Law Review* 4 (1980)
See also Henry I. Miller and Gregory Conko, The Perils of Precaution, Why Regulators' "Precautionary Principle" Is Doing More Harm Than Good, Policy Review, June & July 2001, pp.25-39

[253] See Pierre Lascoumes, La précaution comme anticipation des risques résiduels et hybridation de la responsabilité, l'Année sociologique, Etudes sur le risque et la rationalité, Volume 46 (1996), N°2, pp. 359-382 See also Jacques de Gerlache, Entreprises: pour intégrer précaution et proportion, in Edwin Zaccai & Jean Noel Missa (ed.), op.cit., pp. 104-116
John S. Gray, Integrating Precautionary Scientific Methods into Decision-Making, in David Freestone and Ellen Hey (ed.), op.cit., pp. 133-146

[254] The 1982 World Charter for Nature, para.11 (b)

[255] See E. Rehbinder Precaution and sustainable development, two sides of the same coin; in A. Kiss & F. Burhenne-Guilmin (ed.) A Law for the Environment: Essays in honour of Wolfgang E. Burhenne, IUCN-The World Conservation Union, 1994 pp. 93-101

[256] For developing country Parties, no quantified reduction targets are set. For the Annex I Parties, 1990 is chosen as the base year.

[257] ILC, Draft Articles on Prevention of transboundary harm from hazardous activities, adopted by the International Law Commission at its fifty-third session (2001), Article 10: "In order to achieve an equitable balance of interests…the States concerned shall take into account all relevant factors and circumstances, including: (a) The degree of risk of significant transboundary harm and of the availability of means of preventing such harm, or minimizing the risk thereof or repairing the harm."

4.2.2 The precautionary principle and the burden of proof

"Actori incumbit probation" is the basic principle governing the burden of proof. When the public authority in charge of deciding whether to allow or prohibit a certain category of activities bears the burden of proof. Before it prohibits the production or commercialization of a certain substance, for instance, it should justify such a decision on the basis of scientific evidence. If not, it would encounter critics of abuse of power, violation of equality, etc.[258]

If the precautionary principle is strictly applied to a situation with a high degree of uncertainty, the burden of proof can be shifted to those who propose to undertake activities which threaten serious or irreversible damage.[259] Until and unless the operator provides proof of the innocuousness of the proposed activities, he may not be allowed to undertake the activities. Reversing the burden of proof can induce prevention in cases where thresholds are not crossed and shift the balance between risks and benefits.[260]

However, proving complete innocuousness may require infinite costs or even technically impracticable tasks in many cases, because *negativa non sunt probanda*.[261] In some situations, a strict application of burden-shifting may be therefore assimilated with the requirement of zero risk and may induce humans to an abstentionism.[262]

Having this dual aspect, some authors argue that the debate on the burden-shifting is futile, in particular in the context of sustainable development.[263] The burden-shifting may better contribute to the effectiveness of the precautionary principle when applied case by case in accordance with appropriate evidentiary standards established in the

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[258] See Nicolas de Sadeleer, op.cit, p. 191

[259] See William H. Rodgers Jr., Benefits, Costs and Risks: Oversight of Health and Environmental Decisionmaking, *Harvard Environmental Law Review* 4 (1980)

[260] André Nollkaemper, "What you risk reveals what you value ", and Other dilemmas Encountered in the Legal Assaults on Risks, in David Freestone and Ellen Hey (ed.), op.cit, p.85

[261] Julien Cazala, Principe de Précaution et procédure devant le juge international, in Charles Leben & Joe Verhoeven (ed.), Le principe de précaution : Aspects de droit international et communautaire, Editions Panthéon-Assas, 2002, p.171 «Apporter la preuve de l'innocuité d'un produit pour la santé ou pour l'environnement, est assimilable à la recherche d'une preuve négative. Or, *negativa non sunt probanda* (les faits négatifs ne se prouvent pas).

[262] See Oliver Godard, op. cit., p.58

[263] Julien Cazala, op. cit., pp.162-172 Sterility

context of proportionality,[264] as the EC Commission states that the precautionary principle does not imply automatically the shift of the burden of proof.[265]

The reversed burden of proof is instituted in many international instruments, in dealing with the introduction of new substances on the market,[266] the preservation of whale species,[267] the introduction of GMOs,[268] the World Charter for Nature,[269]etc. The burden-shifting is often translated into more concrete rules, such as the 'prior justification rule',[270] 'the reverse listing'.[271]

4.2.3 The precautionary principle and procedural obligations

The precautionary principle indicates a general orientation of human behaviour in particular situations. It is too abstract to guide human actions directly, as Konrad von Moltke asserts; "Principles, such as the precautionary principle, are by definition not operational. They are situated at a meta-level which requires explication and

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[264] Patricia Birnie & Alan Boyle assert that "who bears the burden of proving that a risk exists cannot be answered be reference to Principle 15 alone, but will depend on the context in which the question arises." Patricia Birnie & Alan Boyle, International Law and the Environment, Oxford, 2001, p. 118

[265] Commission of the European Communities, Communication from the Commission on the precautionary principle, COM (2000) 1 final. Para.6.4: "Action taken under the head of the precautionary principle must in certain cases include reversing the burden of proof and placing it on the producer, manufacturer or importer, but such an obligation cannot be systematically entertained as a general principle. This possibility should be examined on a case-by-case basis when a measure is adopted under the precautionary principle."

[266] European Community levies the burden of proof on the producers: the introduction of new substances is prohibited unless such substances have been proven to be safe. Council Directive 67/548/EEC on the Approximation of the Laws, Regulations, and Administrative Provisions of the member States Relating to the Classification, Packing, and Labelling of Dangerous Substances. OJ 1967 L196/1, amended by Directive 93/21/EEC, JO 1993 L 110/20

[267] Before the moratorium on commercial whaling was established in 1979 by the Amendments to the Schedule of the International Convention for the Regulation of Whaling, the whalers demanded the sound evidence that whales were endangered. After the moratorium, sound evidence is demanded that it is safe to resume whaling.

[268] See Council Directive 90/220/EEC of 23 April 1990, Council Directive 2001/18/EC of March 2001 repealing Council Directive 90/220/EEC, Commission Decision 2002/623/EC of 24 July 2002.

[269] World Charter for Nature, 1982, para.11 (b) provides: "Activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination...where potential adverse effects are not fully understood, the activities should not proceed

[270] Decision of Oslo Commission of 1989 OSCOM 89/91

[271] The 1992 Paris Convention for the Protection of the Marine Environment of the North Atlantic prohibits dumping of wastes, with the exceptions provided for in the Convention. See the 1992 Paris Convention, Annex II, Article 3. Similarly, the 1996 Protocol to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter requires Contracting Parties to prohibit the dumping of any wastes or other matter and incineration at sea of wastes or other matter, with the exceptions provided for in the Protocol.

operationalization."[272] A principle can be operationalized either by deriving more concrete substantive rules therefrom, or by devising procedural rules in conformity therewith. This 'proceduralization of norms' is necessary to bridge the gap between an abstract principle and practice. [273]

The precautionary principle is rooted in the ambivalent attitude of the modern society toward science: the trend of scientific scepticism; and the necessity of further dependency on science. Science is being demystified.[274] Nevertheless, humans are obliged to rely more and more on science. In this sense, Ulrich Beck asserts; "It is not their failure but their *success* that has *dethroned* the sciences." [275] This dual aspect of the man-science relationship requires the integration of science and policy when coping with risks, and orients the formation of procedural rules under the precautionary principle in two directions: 1) procedural rules designed to enhance cognitive rationality, individual or collective; 2) procedural rules designed to facilitate social construction. The first category of rules may contribute to reducing the uncertainty on the basis of available scientific knowledge, while the second category may enhance the quality of the standards of conduct on the basis of social consensus.

<Environmental Impact Assessment and Environmental Risk Assessment>

While EIA had been widely introduced in many national laws and international instruments prior to the formulation of the precautionary principle, its utility and significance have been further increased in the context of the precautionary principle. In international adjudications, there have been some arguments on the question of whether EIA is inherent in the precautionary principle. But, the positions of the international courts on the matter remain unclear.[276]

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[272] Konrad von Moltke, The Relationship between Policy, Science, Technology, Economics and Law in the Implementation of the Precautionary Principle, in David Freestone and Ellen Hey (ed.), The Precautionary Principle and International Law, Kluwer Law International, 1996, p. 101

[273] On the concept of proceduralization of norms, see infra. Chapter 6, 1. Decision-making procedures

[274] See Jean-Yves Goffi, Le principe de précaution: un moment nouveau dans la philosophie de la technique, in Edwin Zaccai & Jean Noel Missa (ed.), op.cit., pp. 203-209

[275] See Ulrich Beck, Risk Society, op. cit., Chapter 7 Science beyond truth and enlightenment? pp. 155-182

[276] In the Request for an examination of the situation in accordance with paragraph 63 of the court's judgment of December 1974 in the Nuclear Tests (New Zealand v. France) case, New Zealand invoked the obligation of France in connection with the precautionary principle: "both by virtue of specific treaty undertakings (in the Convention of the protection of the Natural Resources and Environment of the South

In recent years, the concept of Environmental Risk Assessment (ERA) is introduced in some international instruments as a procedure designed to cope with risks.[277] By defining a process which is acceptable to most of those concerned and which is either accessible or transparent to all key parties, risk assessment attempts to develop a systemic approach to bridging the gap between science and policy.[278]

<Continuous review>

Precautionary measures are taken in situations where "most answers in science are considered subject to revision in the light of new evidence."[279] In such situations, "risk assessment itself is risky", as Anthony Giddens asserts; "Risk assessment endeavours in the case of high-consequence risks have to be correspondingly different from those concerned with risks where outcomes can be regularly observed and monitored –

Pacific Region of 25 November 1986 or "Noumea Convention") and customary international law derived from widespread international practice, France has on obligation to conduct an environmental impact assessment before carrying out any further nuclear tests at Mururoa and Fangataufa...France's conduct is illegal in that it causes, or likely to cause, the introduction into the marine environment of radioactive material, France being under a obligation, before carrying out its new underground nuclear tests, to provide evidence that they will not result in the introduction of such material to that environment, in accordance with the "precautionary principle" very widely accepted in contemporary international law." The Court, without mentioning this argument, dismissed the request of New Zealand on the grounds that it does not fall within the provisions of the paragraph 63 of the Judgment of the Court of 20 December 1974. Request for Examination...Order, *ICJ Reports* (1995), pp.288-308

In the Case concerning the Gabčikovo-Nagymaros Project, Hungary argued: "a joint environmental impact assessment of the region and of the future of Variant C structures in the context of the sustainable development of the region should be carried out." The Court, without giving precise significance of the precautionary principle or the requirement of EIA, ordered both parties to take into consideration 'new norms and standards'. *ICJ Reports* (1997), the Case concerning the Gabčikovo-Nagymaros Project, Judgment para.125 and para.140

The Commission of the European Communities takes the position that EIA is inherent in the precautionary principle, when it states: "The implementation of an approach based on the precautionary principle should start with a scientific evaluation, as complete as possible, and where possible, identifying at each stage the degree of scientific uncertainty. Commission of the European Communities, Communication from the Commission COM (2000) 1 final, para.6.1

[277] ILC provides; "Any decision in respect of the authorization of an activity within the scope of the present articles shall, in particular, be based on an assessment of the possible transboundary harm caused by that activity, including any environmental impact assessment." ILC, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, adopted by ILC at its fifty-third session (2001), Article 7 Assessment of risk.

In the context of the regulation of GMOs, EU instruments define Environmental Risk Assessment as "the evaluation of risks to human health and the environment, whether direct or indirect, immediate or delayed, which the deliberate release or the placing on the market of GMOs may pose." Directive 2001/18/EC, Article 2(8)

[278] See Konrad von Moltke, The Relationship between Policy, Science, Technology, Economics and Law in the Implementation of the Precautionary Principle, in David Freestone and Ellen Hey (ed.), op.cit., p. 100

[279] Konrad von Moltke, The relationship between Policy, Science, Technology, Economics and Law in the

although these interpretations have to be constantly revised and updated in the light of new theories and information."[280] Any measures taken under such circumstances are provisional ones, open to a successive revision in the course of the progress of human knowledge. In addition, serious or irreversible damage arises, in most cases, as a result of long-term cumulative effects. Therefore, "measures based on the precautionary principle shall be reexamined and if necessary modified depending on the results of the scientific research and the follow up of their impact." [281] The step-by-step approach, adopted in the EU Directive in dealing with GMOs is a further example of the mechanisms of continuous review. [282]

<Exchange of information and communication and public participation>

In order to enhance the rationality in forging social consensus for risk assessment and risk management, it is essential for the participants to share a common cognitive basis.[283] The right of access to information is not developed for the application of the precautionary principle, but its validity is highlighted in the context of the precautionary principle. Since socially acceptable standards can be determined through the process of political decision based on scientific expertise and transparent public participation, exchange of information and supply of information to the public are preconditions to an efficient public participation, which is a necessary procedure to ensure rational collective decision-makings in the absence of deterministic knowledge.[284]

4.3 Precautionary principle and the 1982 UNCLOS

4.3.1 Preventive approach

Implementation of the Precautionary Principle, in David Freestone and Ellen Hey (ed.), op.cit, pp.97-108

[280] Anthony Giddens, op.cit., p.122

[281] Commission of the European Communities, Communication from the Commission on the precautionary principle. COM (2000) 1 final, para.6.3

ILC states also; "the precautionary principle implies the need for States to review their obligations of prevention in a continuous manner to keep abreast with the advances in scientific knowledge." ILC, Draft Articles on Prevention of transboundary harm from hazardous activities, 2001, General commentary.

[282] See Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC, Preamble, para. (24)

[283] For the right to information, see infra. Chapter 6, 3. Compliance system

The general paradigm for the protection of the marine environment and the conservation of the marine living resources embraced by the 1982 UNCLOS can be qualified as a preventive approach.[285]

Under the general obligation to protect and preserve the marine environment,[286] States shall take all measures that are necessary to prevent, reduce and control pollution of the marine environment.[287] For this, States are required to adopt laws and regulations,[288] to enforce them,[289] to cooperate to establish international rules, standards and recommended practices and procedures,[290] to provide technical assistance,[291] to monitor and assess the risks and effects of pollution.[292] All of these obligations are aimed at preventing, reducing and controlling marine pollution from any source. Measures taken to prevent marine pollution belong to a preventive approach. Measures to reduce and control marine pollution are remedial actions and therefore belong to a reactive approach. Since a preventive approach is not contradictory with but complementary to a reactive approach, the 1982 UNCLOS can be said to embrace both approaches.

Under the 1982 UNCLOS, the measures that States are required to take in utilizing and conserving the marine living resources belong mostly to a preventive approach. In the exclusive economic zones, the coastal States are required to promote the objective of optimum utilization of the living resources, [293] to determine the allowable catch at levels which can produce the maximum sustainable yield.[294] These obligations of the coastal States are directed to the balance between exploitation and conservation of the marine living resources. For the conservation of the species that have particular

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[284] See infra. Chapter 6, 3.Compliance system
[285] For Ulrich Beyerlin, it appears that UNCLOS follows a preventive approach which does not meet the specific demands of the precautionary principle. The latter was unknown at the time when UNCLOS was agreed upon. Nevertheless, the shift from remedial to preventive action was certainly a decisive step forward. Ulrich Beyerlin, New Developments in the Protection of the Marine Environment: Potential Effects of the Rio Process, *ZAÖRV*, 1995, p. 554
[286] Article 192
[287] Article 194
[288] Articles 207 to 212
[289] Articles 213 to 222
[290] Article 197
[291] Article 202
[292] Articles 204 to 206
[293] Article 62
[294] Article 61

characteristics, such as straddling fish stocks, transboundary fish stocks, marine mammals, anadromous stocks, catadromous stocks, the Convention lays down similar obligations, but puts more emphasis on cooperation among all States. [295] Conservation measures here means preventive measures in that the conservation is nothing but the prevention of depletion or over-exploitation.

With regard to the marine living resources of the high seas, States have obligations of the same nature. States are required to determine the allowable catch at levels which can produce the maximum sustainable yield and to take other conservation measures for the marine living resources of the high seas.[296]

4.3.2 Elements of the precautionary approach

In spite of its apparent preventive approach, the 1982 UNCLOS contains some provisions which can be interpreted as elements of the precautionary principle, or at least as clauses which may facilitate the application of the precautionary principle under the framework of the Convention.

The definition of pollution of the marine environment provided in the 1982 UNCLOS includes the concept of potential risks: "pollution of the marine environment means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities."[297] The term "which...*is likely to result* in such deleterious effects" is the expression which refers to hypothetical and uncertain risks. On the other hand, the Convention requires States to take all measures necessary to prevent pollution of the marine environment from every source.[298] This means that States are under obligation to take all preventive measures not only against identified risks but also potential risks. Although the Convention does not

[295] Articles 63 to 67
[296] Article 119
[297] Article 1, para.1 (4)
[298] Article 194

employ the term "serious or irreversible damage", preventive measures are required *a fortiori* where there are threats of serious or irreversible damage.

The provisions of the 1982 UNCLOS relating to particularly dangerous situations are virtually complete versions of the precautionary principle. Regarding marine pollution in ice-covered areas, the Convention stipulates; "Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas, where pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance...based on the best available scientific evidence."[299]Considering the serious damage in the event of an accident of nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances, the Convention requires such ships to observe special precautionary measures established for such ships by international agreements.[300]

The 1982 UNCLOS provides for many procedural obligations which would be required in applying the precautionary principle. The Convention pays particular attention to potential risks, by requiring States to keep under surveillance the effects of any activities which they permit or in which they engage in order to determine whether these activities are likely to pollute the marine environment.[301] Furthermore, "when States have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment, they shall, as far as practicable, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments." This is an articulation of the precautionary principle in all aspects but in name. The Convention provides for the obligations of exchange of information and publication of reports, which are also indispensable procedural obligations when applying the precautionary principle.[302] The Convention provides for the mechanisms of continuous review of the appropriateness of the preventive measures, by requiring States

[299] Article 234
[300] Article 23
[301] Article 204
[302] Article 205

to re-examine from time to time the rules, standards and recommended practices and procedures established at the global or regional level.[303]

As in other fields where the precautionary principle is applied, scientific knowledge is always insufficient but an indispensable condition to the rational human response to uncertain risks in the field of marine environment. The transfer of technology is a procedural obligation necessary to form a common cognitive basis at the global level. The 1982 UNCLOS dedicates a special part (Part XIV) to the issues of development and transfer of marine technology. The development of marine technology is a multipurpose activity. As enumerated in the Convention, the protection and preservation of the marine environment as well as the conservation of marine resources are among the objectives of the development of marine scientific and technological capacity.[304] The Convention calls for international cooperation for the development and transfer of marine technology though bilateral, regional or multilateral channels.[305]

As such, many elements of the precautionary principle are embedded in many provisions of the 1982 UNCLOS. By virtue of these provisions, there would be no difficulty in incorporating into the framework of the Convention newly developed rules in the subsequent instruments for the application of the precautionary principle to the issue-area of the protection of the marine environment.

4.4 Post-UNCLOS development of the precautionary principle

The precautionary principle, first conceived in the 1980s in the regime for the protection of the marine environment of the North Sea, has rapidly proliferated since 1990s in many international or regional agreements in the issue-areas of the protection of the marine environment from pollution and the conservation of the marine living resources.

The 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation emphasizes precautionary measures in avoiding oil pollution in the first instance, and sets down procedural rules necessary to take precautionary measures, such as oil pollution emergency plans, reporting procedures, exchange of information,

[303] Articles 207, 208, 209, 210, 211
[304] Article 266, para.2

reporting, R&D and technical cooperation. The 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area introduces the precautionary principle as one of the fundamental principles and obligations and includes a trigger clause for the recourse to the precautionary principle (reason to assume).[306] The 1992 Paris Convention for the Protection of the Marine Environment of the North East Atlantic (the OSPAR Convention) adopts the precautionary principle as one of the general obligations.[307] The 1996 Protocol to the Convention on the prevention of marine pollution by dumping of wastes and other matter introduces the precautionary approach. In this protocol the precautionary principle is not adopted as a declaratory principle but materialized into the reverse list method.[308]

In the issue-area of the conservation of the marine living resources, the 1995 FAO Code of Conduct for Responsible Fisheries provides for a set of guidelines for the application of the precautionary approach to the conservation, management and exploitation of fisheries resources.[309] The 1995 Agreement embraces the precautionary approach to the conservation of straddling fish stocks and highly migratory fish stocks at the global level.[310]

In the regional regimes, the North Sea regime was the forerunner in introducing the precautionary principle, as noted above. The precautionary principle or precautionary approach is introduced in many other regional instruments in a variety of formulations.[311]

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[305] Articles 270, 272

[306] Article 3, para.2: "The Contracting Parties shall apply the precautionary principle, i.e., to take preventive measures when there is reason to assume that substances or energy introduced, directly or indirectly, into the marine environment may create hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea even when there is no conclusive evidence of a causal relationship between inputs and their alleged effects."

[307] Article 2, 2 (a): "...preventive measures are to be taken when there are reasonable grounds for concern that substances or energy introduced, directly or indirectly, into the marine environment may bring about hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship between the inputs and the effects;"

[308] The 1996 Protocol to the Convention on the prevention of marine pollution by dumping of wastes and other matter, 1972, Articles 4, Annex I, II. See also supra. Chapter 3

[309] See Para 7.5 Precautionary approach

[310] See Articles 5, 6 and Annex II

[311] See, *inter alia*, the 1997 Agreement for the Establishment of a General Fisheries Commission for the Mediterranean, the 1999 Agreement between the Government of Iceland, the Government of Norway and the Government of the Russia Federation Concerning Certain Aspects of Cooperation in the Area of Fisheries, the 1999 Agreement for the Establishment of the Regional Commission for Fisheries (concluded among Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, UAE.), the 2000 Framework Agreement

In the European Union, the precautionary principle was introduced into the 1992 Maastricht Treaty on European Union, and thereby has gained the status of one of the basic environmental principles of the European Community which must be integrated into the definition and implementation of other Community policies.[312]

Compared with international law-makers, international courts have so far shown themselves more cautious in dealing with arguments based on the precautionary principle. In the Request for an Examination of the Situation and the case concerning the Gabčikovo-Nagymaros Project, ICJ did not pronounce an explicit position on the legal value of the precautionary principle, invoked respectively by New Zealand and Hungary. In the Southern Bluefin Tuna cases, the complainants (Australia/New Zealand) argued on the basis of the precautionary principle, [313] but the International Tribunal for the Law of the Sea did not expressly address the applicability of the precautionary principle, although it took into account the concept of the principle.[314] In the MOX plant case, the

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for the Conservation of Living Marine Resources on the High Seas of the South Pacific (The Galapagos Agreement), the 2000 Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, the 2001 Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean, the Agreement on the International Dolphin Conservation Program (AIDCP amended in 2002).

[312] Treaty on European Union (the 1992 Treaty of Maastricht on European Union), Article 130R (which became Article 174 of the 1997 Treaty of Amsterdam on European Union): " 2. Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay. Environmental protection requirements must be integrated into the definitions of implementation of other Community policies."

[313] In their request for provisional measures, New Zealand and Australia invoked "the requirements of the precautionary principle". ITLOS, Southern Bluefin Tuna Cases, 1999, Requests for provisional measures, Order

[314] ITLOS, Southern Bluefin Tuna Cases, Requests for provisional measures, 1999, Order
The Tribunal implied its consideration of the precautionary principles in vague terms; "in the view of the Tribunal, the parties should in the circumstances act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stock of southern bluefin tuna;...there is scientific uncertainty regarding measures to be taken to conserve the stock of southern bluefin tuna..." Order paras.77, 79 By giving order to refrain from conducting an experimental fishing programme, the Tribunal embraced the precautionary principle implicitly.

Francisco Orrego Vicuna considers that ITLOS's decision is the first to apply the precautionary approach within the limited meaning to a dispute on high seas fisheries. Francisco Orrego Vicuna, From the 1893 Bering Sea Fur Seals Case to the 1999 Southern Bluefin Tuna cases: A Century of Efforts at Conservation of the Living Resources of the High Seas, *YIEL*, Vol.10 (1999), p. 44

But, the following observation would be more pertinent:
"Le Tribunal, tout en se gardant de prendre clairement position sur la nature juridique ou pas du principe, devait toutefois indiquer que les parties au différend se doivent d'agir avec prudence et précaution...On observera cependant que la notion même de précaution semble implicitement liée à celle de mesures conservatoire: en prescrivant ce type de mesures, le juge vise par précaution à préserver une situation

complainant, Ireland invoked the precautionary principle more fervently,[315]but ITLOS was more cautious in expressing its position on the principle.[316] The jurisprudence of the Court of Justice of the European Communities is more favourable to the precautionary principle. The Court, without explicitly referring to the precautionary principle, has implicitly recognized the precautionary principle by admitting the legality of the measures taken by the European Council to regulate the use of driftnets on the grounds that the absence of conclusive scientific evidence cannot prevent the Council from adopting such measures, [317] and the legality of the emergency measures taken by the European Commission against bovine spongiform encephalopathy (Mad cow disease).[318]

4.5 Conclusion

Although the precautionary principle has widely proliferated into international instruments, binding or non-binding, its meaning remains polysemous and its legal status unclear.

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incertaines." Marie-Pierre LANFRANCHI & Sandrine MALJEAN-DUBOIS, Le Contrôle juridictionnel sur le plan international, in Sandrine MALJEAN-DUBOIS (dir.) L'effectivité du droit européen de l'environnement, *La documentation française*, 2000, pp.269-270

[315] In the Mox Plant case, Ireland argued: "...the precautionary principle is now recognised as a rule of customary international law, that it is binding upon Ireland and the United Kingdom, and that it is of singular importance for the provisional measures phase of this case. The precautionary principle is a free-standing obligation which binds the United Kingdom but which it has failed to apply, and it is a principle applicable to the interpretation of each and every provision of LOSC upon which Ireland relies."
The MOX Plant case, Request for Provisional measures and Statement of case of Ireland, para.97
The United Kingdom replied that it is generally accepted that the precautionary principle can operate only where there are some reasonable grounds for concern. The MOX Plant case, Written Response of the United Kingdom.

[316] ITLOS expressed its view that "prudence and caution require that Ireland and the United Kingdom cooperate in exchanging information concerning risks or effects of the operation of the MOX plant and in devising ways to deal with them, as appropriate," and prescribed, pending a decision by the arbitral tribunal, that "Ireland and the United Kingdom shall cooperate and...enter into consultations in order to exchange further information with regard to possible consequences...and monitor risks or the effects of the operation of the MOX plant..." ITLOS, The Mox Plant Case Order, 3 December 2001, para.84, 89
In this ways, showed an ambiguous position with regard the precautionary principle.

[317] The European Court of Justice declared: "It follows from the very wording of that provision that the measures for the conservation of fishery resources need not be completely consistent with the scientific advice and the absence of such advice or the fact that it is inconclusive cannot prevent the Council from adopting such measures as it deems necessary for achieving the objectives of the common fisheries policy." Judgment of the Court (Sixth Chamber) of 24 November 1993. Case C-405/92.*European Court reports 1993 Page I-06133,* Grounds of the judgment, para.31

[318] See the Court of Justice of the European Communities, Judgment of the Court, 5 May 1998 (Agriculture - Animal health - Emergency measures against bovine spongiform encephalopathy - 'Mad cow disease') Case C-180/96, and Order of the Court, Case C-180/96 R. European Court reports 1996

The legal status of the precautionary approach embraced by international "soft law" instruments is as ambiguous as that of the "soft law" instruments.[319] In the binding instruments, the wordings introducing the precautionary principle or the precautionary approach differ from instrument to instrument. In most instruments dealing with the conservation of the marine living resources, the precautionary principle is formulated in abstract terms as one of the general principles. Some instruments provide rather concrete guidelines for the application of the precautionary approach, either by incorporating the rules set down in the 1995 FAO Code of Conduct for Responsible Fisheries or the Annex II of the 1995 Agreement.[320] The reverse listing method adopted in the 1996 Protocol to the London Dumping Convention is a concrete application of the precautionary principle.[321]

As such, the meaning and applicability of the precautionary principle differ from instrument to instrument. Therefore, the legal status of the precautionary principle should be perceived case by case in the context of each instrument and in the light of the language employed therein. In general terms, it would be difficult to say, at this stage, that the precautionary principle is a free-standing obligation or a rule of customary international law.[322]

Although the basic paradigm for the protection of the marine environment embraced by the 1982 UNCLOS is the preventive approach, the precautionary principle

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[319] See a series of the ministerial declarations adopted in the International Conference on the Protection of the North Sea: The 1984 Bremen Declaration (the first), para.D4; the 1987 London Declaration (the second), para.VII; the 1990 Hague Declaration (the third); the 1995 Esbjerg 1995 Declaration (the fourth); the 2002 Bergen Declaration (the Fifth) The 1992 Rio Declaration, the Agenda 21, etc.

[320] See the 2001 Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean, Article 7 Application of the precautionary approach, and the 2000 Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, Article 6

[321] See Articles 4, 5, 8 and Annex I

[322] See Pierre-Maire DUPUY, Le principe de précaution règle émergente du droit international général, in Charles Leben et Joe Verhoeven (ed.), Le principe de précaution : Aspects de droit international et communautaire, Editions Panthéon-Assas, Paris, 2002, p.95 «Dire du principe de précaution qu'il constitue d'ores et déjà un principe 'émergente' du droit international signifie que son affirmation progressive en tant que règle de droit positif, énoncé par un nombre croissant d'instruments juridique dont beaucoup sont conventionnels, constitue un phénomène socio-juridique en cours de développement. Principe déjà consacré sur des bases conventionnelles déterminées, donc au titre de '*les specialis*', le principe de précaution n'a sans doute pas encore acquis, en droit international général, la consistance et la précision nécessaire pour qu'on puisse y déceler l'expression d'une '*opinio juris*' collective suffisamment forte et unanime pour engendrer une règle de droit coutumier.»

is developing in the regime under the Convention through many mechanisms of evolution examined in Chapter 3.

5. Equality of States and Equitable International Order

5.1 Equality of States and Equity

As discussed in Chapter 2, the concept of equality of States is inseparable from that of sovereignty. Equality of States constitutes one of the fundamental principles of the contemporary international law enshrined in the Charter of the United Nations.[323] Equity is an inherent principle of international law, as ICJ states: "Equity as a legal concept is a direct emanation of the idea of justice",[324] and "Whatever the legal reasoning of a court of justice, its decisions must by definition be just, and therefore in that sense equitable."[325] However, in some situations, equality and equity do not concord very well.

In legal literature, the doctrine of absolute sovereign equality developed as a reflection of the concept of sovereignty.[326] In State practice, the 1648 Treaty of Westphalia is usually recognized as the beginning of the transition from the vertical

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[323] Article 2, para.1

[324] Continental Shelf (Tunisia/Libyan Arab Jamahiriya) Judgement, ICJ Reports 1982, p. 60, para.71

[325] Judgements of the Administrative Tribunal of the ILO upon Complaints made against UNESCO, ICJ Reports 1956, p.100
Similarly, the Institut de Droit International states: "l'équité est normalement inhérente à une saine application du droit." Résolution de l'Institut de Droit International (1937) 38 *Annuaire de l'Institut de Droit International* 271

[326] In the seventeenth century, the concept of equality of States was conceived as being implied in the concept of sovereignty, in particular in that of independence and territorial integrity.
In the theory of Jean Bodin, recognized as the precursor of the principle of sovereignty, the essence of the concept of sovereignty was the autonomy of the sovereign, i.e. the power to make its own law. See Jean Bodin, Six Livres de la République, 1576. On Jean Bodin, see also Gérard Mairet, Le principe de souveraineté, Gallimard, 1997, and Simone Goyard-Fabre, Jean Bodin, Ellipses, 1999
Grotius himself did not advance the concept of equality of States. However, when he formulated the concept of the law of nations, *jus gentium*, as the law which has received its obligatory force from the will of all nations or of many, and which belongs to that society which is established by nations amongst themselves, the necessity of equality was already implied therein. Many other theorists of the seventeenth century, such as Suàrez, Gentilli, Hobbes, Pufendorf, etc. developed the doctrines of sovereignty and independence, by conceiving the world as a society composed of separate, independent States, contrasted with the world under the authority of Pope or Emperor. Even though they didn't formulate explicitly the doctrine of sovereign equality, it was implied in their concept of independence and territorial integrity of States.
See P. H. Kooijmans, The Doctrine of the equality of States, A.W. Sythhoff – Leyden, 1964

imperial to the horizontal interstate model.[327] However, before the end of the Second World War, there was a wide gap between the doctrine and the practice concerning sovereign equality. The application of the doctrine was limited to the relationship among the members of the club of selected western States. On a global scale, in particular during the age of colonialism and imperialism, the doctrine of sovereign equality was never applied to interstate relations.[328] After the Second World War, this gap between theory and practice has narrowed. In theory, the concept of equality of States has been relativized.[329] In practice, the principle has been more effectively applied under the Charter of the United Nations.

In the contemporary world, central concepts of international law, such as territorial integrity, non-intervention, self-defence or permanent sovereignty over natural resources all rely on the exclusive or dominant role of the State.[330] However, the concept of sovereignty itself is undergoing an evolution, due to challenges coming from several sides.[331]

First, the concept of sovereignty is evolving under the influence of non-State actors in international life. As ICJ declared; "Throughout the history, the development of international law has been influenced by the requirements of international life, and the progressive increase in the collective activities of States has already given rise to

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[327] See R. Faulk, The Interplay of Westphalia and Charter Conceptions of International Legal Order, in R. Faulk & C. Black (ed.), The Future of the International Legal Order, vol. 1 (1969), pp. 32-43
See also Andreas Osiander, Sovereignty, International Relations, and the Westphalen Myth, *IO* 55, 2, Spring 2001, pp. 251-287

[328] In the age of imperialism, it was a common practice for the imperial powers to impose unilateral extraterritorial jurisdiction on weak States. In addition, many States were under the suzerainty of other countries, e.g. Egypt under the suzerainty of the Sultan of Ottoman Turkey from 1840 to 1914.

[329] The doctrine of the absolute sovereignty and the doctrine of the absolute equality of States were established by the authors of natural law. Many positivists have contested these doctrines. In particular, Hans Kelsen, among others, is an opponent of the doctrine of the absolute equality of States. Stating that the dogma of absolute equality of States arises mainly from two fundamental hypotheses, namely, that of the unlimited sovereignty of the State and that of fundamental or natural rights, Kelsen admits neither of these hypotheses. For him, in the context of the hierarchy of norms, sovereignty of the State is the legal authority of the States under the authority of international law, and therefore means only that legal authority of States is solely restricted by international law and not by the national law of another State.
See Hans Kelsen, The Principle of Sovereign Equality of States as a Basis for International Organization, *Yale Law Journal*, vol. 53 (1944)
M. J. Glennon, Has International Law Failed the Elephant ? *AJIL*, vol. 84 (1990)

[330] See Martti Koskenniemi, The Future of Statehood, 32 *Harvard International Law Journal* (1991)

[331] See Benedict Kingsbury, Sovereignty and Inequality, *EJIL*, Vol. 9, 1998
See also Eli Lauterpacht, Sovereignty – Myth or reality? *International Affairs* vol.73, No.1(1997)

instances of action on the international plane by certain entities which are not States",[332] the exclusive status of States as the subjects of international law has been mitigated by the entry onto the scene of non-States actors, such as international organizations,[333] NGOs,[334] and individuals,[335] although the competence of these non-State actors under international law is limited to varying degrees.[336]

Second, "sovereignty is no longer sacrosanct",[337] by being eroded or challenged by universal values, such as human rights and the global environment. Although the principle of non-intervention, as a component of the concept of sovereignty, is consolidated in the Charter of the United Nations,[338] it is challenged by the cause of the protection of human rights, which is defined as one of the purposes of the Charter.[339]In some situations where a serious violation of fundamental human rights has occurred, the Security Council has formed United Nations missions to intervene in the internal affairs of a sovereign State for the protection of human rights or has authorized the use of

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[332] In the Advisory Opinion on the question of the reparation for injuries suffered in the service of the United Nations, ICJ Reports, 1949, p. 178

[333] In the Advisory Opinion on the question of the reparation for injuries suffered in the service of the United Nations, ICJ declared; "the attribution of international personality to the United Nations is indispensable."
ICJ Reports, 1949, p. 178
In practice, international organizations are allowed to become parties to many international conventions, although their legal capacity is limited, as in the 1982 Law of the Sea Convention (Article 1, para.2 (2)

[334] In some international regimes, NGOs are recognized as partners of the States. In some regimes, NGOs are even entrusted with the role of secretariat of international conventions. See infra. Chapter 5

[335] The international legal personality of individuals is primarily, but not exclusively, recognized in human rights law and international criminal law. In the advisory opinion concerning the Danzig Railway Officials case, PCIJ declared that there is nothing in international law to prevent individuals from acquiring directly rights under a treaty provided that this is the intention of the contracting parties. PCIJ Rep. Series B, N°11 (1925) In the Nuremberg Trial and Tokyo Trial, the Tribunal declared: "Crimes against international law are committed by men, not by abstract entities, and only by punishing individuals who commit such crimes can provisions of international law be enforced." Ed. 41 *AJIL*, 221 (1947). Article 25 of the Rome Statute of the International Criminal Court, stipulates individual criminal responsibility. There are many other treaties which recognize the international legal personality of individuals, to a limited extent.

[336] See Christopher Schreuer, The waning of the Sovereign state: Towards a New paradigm for International Law, *European Journal of International Law*, vol. 4, 1993, N° 4
Stephen Hobe, Global Challenges to Statehood: The Increasingly Important Role of Nongovernmental Organizations, *Indiana Journal of Global Legal Studies*, vol. 5, Fall 1997

[337] J. Chopra & T.G. Weisse, Sovereignty is No Longer Sacrosanct: Codifying Humanitarian Intervention (1992) 6 *Ethics & International Affairs*, pp.95-117

[338] The Charter of the United Nations, Article 2 (7)

[339] In the Preamble, the Charter of the United Nations reaffirms "faith in fundamental human rights, in the dignity and worth of the human person..." In Article 1 (3), "international cooperation...in promoting and encouraging respect for human rights..." is included in the purposes of the United Nations.

force.[340] Such humanitarian interventions, easily understandable from a humanitarian point of view but hardly reconcilable with the principle of non-intervention, have entailed many controversies.[341]

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[340] See the following resolutions of the Security Council;

Resolution 688 of 5 April 1991and subsequent resolutions concerning the intervention in Iraq to relieve the Iraqi civilian population in particular the Kurdish population from repression inflicted by the Iraqi authorities.

Resolution 767 of 27 July 1992 and subsequent resolutions concerning the intervention for the delivery of humanitarian assistance and the process of reconciliation and political settlement in Somalia.

Resolution 743 of 21 February 1992 and subsequent resolutions concerning the intervention by the United Nations Protection Force for the relief operation in Sarajevo and other parts of Bosnia and Herzegovina.

Resolution 867 of 23 September 1993 and subsequent resolutions concerning the establishment of the United Nations Mission in Haiti (UNMIH) and United Nations Police Monitors (UNPMS) to protect human rights by stabilizing the internal situation in Haiti.

[341] See Charles Zorgbibe, Le Droit d'ingérence, Presses Universitaires de France, 1994, Mario Bettati, Le droit d'ingérence, Odile Jacob, 1996, Michael J. Glennon, Sovereignty and Community after Haiti: Rethinking the collective use of force, *AJIL*, vol. 89 (1995); W.D. Verwey, Humanitarian Intervention under International Law, *Netherlands International Law Review*, vol. XXXII, 1985/3; Thomas M. Franck and Nigel S. Rodley, After Bangladesh: The Law of Humanitarian Intervention by Military Force, *AJIL*, Vol. 67 (1973)

For some authors, humanitarian intervention can be justified through a reinterpretation of the concept of sovereignty: "sovereignty today means the people's sovereignty rather than the sovereign's sovereignty." W. Michael Reisman, Sovereignty and human rights in contemporary international law, *AJIL*, vol. 84 (1990)

Others find a justification of humanitarian intervention in the relativity of the concepts of the terms employed in Article 2 (7) of the Charter, i.e. "matters which are essentially within the domestic jurisdiction of any state' and 'intervene'. See Mario Bettati, op.cit., pp.20-21 : « Tout dépend de ce qu'on entend par ' affaires qui relèvent essentiellement de la compétence nationale ' et par ' intervenir '. On comprendra que le gouvernement jaloux de leur souveraineté et militants de la non-ingérence adoptent une liste aussi large que possible de ces ' affaires ' et qu'ils considèrent comme ' intervention ' la moindre indiscrétion sur leurs comportements internes. On comprend, à l'inverse, que les défenseurs des droits de l'individu s'efforcent d'abord d'exclure de ces 'affaires ' tout ce qui concerne les libertés fondamentales et le sort réservé aux êtres humains vivant dans un périmètre étatique, puis de réduire la notion d' intervention au cas d'incursions violentes.

On the other side, there are some authors who are reluctant to recognize the legitimacy of humanitarian intervention. Some of them assert that a unilateral resort to force can be justified only in case of self-defense. See Oscar Schachter, In Defense of International Rules on the Use of Force, *University of Chicago Law Review*, 1986, p. 113

For Bernhard Graefrath, the machinery of the United Nations is not endowed with the mechanism of intervention as a reaction against serious violations of human rights and therefore the solution of these problems through armed intervention undermines the very foundation of the international legal order. See Bernhard Graefrath, Ingérence et droit international, *Les nouveaux cahiers* de l'Institut Universitaire d'études du Développement, Dérives humanitaires, 1994 , N° 1, pp. 17-32

In the case concerning Military and Paramilitary Activities in and against Nicaragua, ICJ has taken a negative position regarding the military intervention undertaken at the request of the opposition, by stating "The principle of non-intervention derives from customary international law. It would certainly lose its effectiveness as a principle of law if intervention were to be justified by a mere request for assistance made by an opposition group in another State...Indeed, it is difficult to see what would remain of the principle of non-intervention in international law if intervention, which is already allowable at the request of the government of a State, were also to be allowed at the request of the opposition. This would permit any State to intervene at any moment in the internal affairs of another State, whether at the request of the government

The protection of the global environment is also a universal value which may enter into conflict with the concept of spatial-territorial sovereignty. The responsibility of States to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction was recognized as a principle of customary international law.[342] It has been reiterated in universal instruments, although counterbalanced by the sovereign right of States to exploit their own resources pursuant to their own environmental policies.[343] In particular, concerning situations where activities conducted in a territory produce adverse effects on humanity as a whole, the concept of ecological intervention (Eco-intervention) has been proposed.[344] Some authors propose somewhat radical ideas, such as the creation of the Ecological Security Council,[345] or the Green Helmets,[346] etc. A prominent example of the idea of ecological intervention is the debate on the effects of exploitation of tropical rainforest on climate change.[347] In particular, there are pressures from many countries on the Brazilian government to preserve the Amazon as a public good.[348] Some authors present the rationale of the ecological intervention on the grounds that appropriation of the Amazon leaves the rest of the international community disadvantaged, and will not leave "enough and as good" for other peoples and future generations,[349] that the oxygen produced by the Amazonian forest should be declared common heritage of mankind,[350]or

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or at the request of its opposition." But, the military intervention in Nicaragua should be differentiated from humanitarian interventions undertaken on the basis of the Security Council's resolution.

[342] See Trail Smelter case, 3 *R.I.A.A.* 1905, the *Lac Lanoux* Case, 24 *ILR* 1957, the Nuclear Test cases, *ICJ Reports* 1974

[343] The 1972 Stockholm Declaration on the Human Environment, Principle 21, the 1992 Rio Declaration on Environment and Development, Principle 2

[344] See Laurence Boissons de Chazournes, Variations juridiques sur le thème de l'ingérence écologique, *Nouveaux cahiers* de l'Institut Universitaire d'études du développement, N° 3, 1995, pp. 53-59, Andrea Dall'Aglio, Ingérence écologique : un débat, *Nouveaux cahiers* N° 3, 1995, p. 169-191, M. Bachelet, L'ingérence écologique, Frison-Roche, Paris, 1995

[345] See P. Mische, National Sovereignty and Environmental Law, in S. Bilderbeek (ed.), Biodiversity in International law, OIS Press, 1992, Oxford, pp.105-114 and R. Wilson, A Comprehensive Approach to Global Environmental Problems, in S. Bilderbeek (ed.).

[346] See L. A. Malone, Green Helmets: A Conceptual Framework for Security Council Authority in Environmental Emergencies, (1996) 17 *Michigan Journal of International Law* pp.515-536.

[347] See José Goldemberg & Eunice Ribeiro Durham, Amazônia and National Sovereignty, *International Environmental Affairs*, vol. 2 N°1, Winter 1990

[348] See R.M. McClearly, The International Communities Claim to Rights in Brazilian Amazonia (1991) 39 *Political Studies* pp. 691-707

[349] See C.R. Beitz, Justice and International Relations, in Beitz C.R. *et al.*, (ed.) International Ethics, Princeton University Press, pp. 282-311

[350] See A.A. Cocca, The Common Heritage of Mankind: Doctrine and Principles of Space Law: An

that Brazil must realize that they are not conserving their forests, but are determining the future of mankind.[351] Against these claims, the Brazilian government defends its policy on the basis of the concept of sovereignty and the Principle of the Permanent Sovereignty over Natural Resources.[352]

If the concept of sovereignty is relativized, so is the concept of equality of States.

There is another type of the evolution of the principle of equality of States through its adaptation to contextual differences.

In the field of international economic relations, it is commonplace for States to institute preferential treatment in favour of disadvantaged States. The Generalized System of Preferences (GSP) applied to the LDCs is a typical example.[353] Preferential treatment mean unequal treatment, which can be justified for several reasons. Such a treatment is not considered as an impairment of the sovereignty of the beneficiary States, because it is not imposed on them but requested by them. Such a differentiated treatment can be considered to be more equitable and fair than a treatment on mechanical equal footing.

Since the 1970s, developing States have claimed a new principle embodying more equitable considerations for the economically disadvantaged States. After having adopted the United Nations Resolution on the Permanent Sovereignty over Natural Resources[354] in 1962, developing States, reinforced in number by newborn States, claimed in the 1970s a more equitable new order based on "welfare principles" rather than on free-market forces, with a view to narrowing the gulf between rich and poor countries. This claim was crystallized into the "Declaration on the Establishment of New International Economic Order (NIEO)", embracing the principles of equity, sovereign equality, common interest and cooperation among all States.[355]

Overview (1986) 29th Collections on the Law of Outer Space pp.17-24

[351] W. McGee & K. Zimmerman, The Deforestation of the Brazilian Amazon: Law, Politics and International Cooperation (1990) 21/3 *University of Miami Inter-American Law Review*, pp. 513-550

[352] The Brazilian Government has declared: "We are masters of our destiny and will not permit any interference in our territory.' See R. M. Mc Clearly, The International Communities Claim to Rights in Brazilian Amazonia (1991) 39 *Political Studies*, pp. 691-707

[353] Under GSP, each industrial country would admit some quantity of imports from less-developed countries either free of tariffs or at a lower rate than what other exporters pay. See Richard E. Caves & Ronald W. Jones, World Trade and Payments, Fourth Edition, Little, Brown and Company, 1985, p. 257

[354] UNGA Res. 1803 : UN Doc. A/5217 (1962)

[355] UNGA Res. 3201: UN Doc. A/9559 (1974)

In the field of environmental protection, the idea of the necessity of asymmetrical standards, first reflected in the Stockholm Declaration,[356] has evolved into the principle of common but differentiated responsibilities in some issue-areas. In the field of the law of the sea, the ideology of equitable international order is embodied in many provisions of the Convention stipulating preferential treatments of developing States and other disadvantaged States.

5.2 Principles of equality and equity in the 1982 UNCLOS

5.2.1 Application of the principle of equality of States

The principle of equality of States embodied in the Charter of the United Nations is introduced into the 1982 UNCLOS in different expressions.[357] Throughout the Convention, this principle is translated into the principle of non-discrimination that underlies the norms and rules governing navigation, the conservation of living resources of the high seas, the prevention of the marine environment, and the exploitation of mineral resources in the Area.

In respect of navigation, the coastal State is prohibited from discriminating in form or in fact against the ships of any State, in allowing the innocent passage in its territorial sea,[358] in suspending temporarily the innocent passage for the protection of its security,[359] and in levying charges on foreign ships passing through its territorial sea.[360] Similarly, States bordering straits are not allowed to discriminate in form or in fact among foreign ships in adopting laws and regulations relating to transit passage through straits.[361] In archipelagic waters, the archipelagic State is not allowed to discriminate in form or in fact among foreign ships, in suspending temporarily in specified areas of its

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[356] The 1972 Stockholm Declaration, Principle 23; "...it will be essential in all cases to consider... the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries."
[357] Preamble, ... "with due regard for the sovereignty of all States" "Believing...in conformity with the principles of justice and equal rights...of all peoples of the world..." Article 157, para.3; "The Authority is based on the principle of the sovereign equality of all its members."
[358] Article 24, para.1 (b)
[359] Article 25, para.3
[360] Article 26, para.2
[361] Article 42, para 2

archipelagic waters the innocent passage of foreign ships for the protection of its security.[362] Ships flying the flag of land-locked States are entitled to enjoy treatment equal to that accorded to other foreign ships in maritime ports.[363]

With respect to the conservation of living resources of the high seas, States concerned shall ensure that conservation measures and their implementation do not discriminate in form or in fact against the fishermen of any State.[364]

With regard to the protection and preservation of the marine environment, States, in exercising their rights and performing their duties, are required not to discriminate in form or in fact against vessels of any other State.[365] For the protection of ice-covered areas, coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone.[366]

In the field of the administration of ISBA, the 1982 UNCLOS provides in detail the principle of non-discrimination, in sharing financial and economic benefits derived from activities in the Area,[367] in using the Area for peaceful means.[368] In particular, ISBA is required to assure non-discriminatory policies, in carrying out its obligations in respect of activities in the Area,[369] in exercising its powers and functions.[370] In Annex III to the Convention concerning basic conditions of prospecting, exploration and exploitation of the mineral resources of the Area, the principle of non-discrimination is required in every aspect of activities in the Area.[371]

5.2.2 Adjustment of the principle of equality of States

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[362] Article 52, para 2
[363] Article 131
[364] Article 119, para.3
[365] Article 227
[366] Article 234
[367] Article 140, para 2
[368] Article 141
[369] Article 151, para 1 (c)
[370] Article 152
[371] Annex III, Article 6, para 5, Article 7, para 2, 5, Article 13, para 1 (d), 14, Article 17, para 1 (c),

Embracing the cause of just and equitable international economic order, the 1982 UNCLOS provides many rules intended to adjust the application of the principle of equality of States to some categories of States.

5.2.2.1 Incorporation of the cause of just and equitable international economic order

The 1982 UNCLOS expresses its aspiration for "the realization of a just and equitable international economic order, which takes into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or land-locked".[372] This principle, which reflects the spirit of the New International Economic Order, is embodied in many provisions of the Convention, including those concerning the protection of the marine environment and the exploitation and conservation of marine living resources.

5.2.2.2 Preferential treatments of developing States

Special consideration for developing States is most notably manifested in the regime of sea-bed activities. The concept of the common heritage of mankind itself is rooted in the ideology of NIEO, in that it is aimed at equitable benefit-sharing in favour of developing States.[373] This philosophical foundation permeates the whole mechanism of the sea-bed regime under the Convention, as manifested in the call for special consideration for developing countries in defining the powers and functions of ISBA,[374] in constituting the Council of ISBA,[375]in transferring technology,[376] in providing economic assistance,[377] etc.

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[372] Preamble

[373] In Article 140, para.2, and Article 160, para.2 (f)(i), the Convention requires the ISBA to provide for the equitable sharing of financial and other economic benefits derived from activities in the Area, taking into consideration the interests of developing countries.
See Kemal Baslar, The Concept of the Common Heritage of Mankind in International Law, Martinus Nijhoff Publishers, 1998
See also M. Schmidt, Common Heritage or Common Burden? Clarendon Press, Oxford, 1989

[374] Article 152, para2, Article 160, para.2 (f) (i)

[375] Article 161, para.1 The 1994 Agreement, Annex, Section 3

[376] The 1994 Agreement, Annex, Section 5,

[377] The 1994 Agreement, Annex, Section 7

With regard to the protection of the marine environment, the 1982 UNCLOS lays down a principle of preferential treatment of developing States; "Developing States shall, for the purpose of prevention, reduction and control of pollution of the marine environment or minimization of its effects, be granted preference by international organizations in: (a) the allocation of appropriate funds and technical assistance; and (b) the utilization of their specialized services."[378] The duty of scientific and technical assistance in the field of the protection and preservation of the marine environment is also a provision stipulating preferential treatment of developing States.[379]

The provisions on the development and transfer of marine technology focus also on the necessity of improving the level of marine technology in developing States by transferring marine technology from developed to developing States.[380]

5.2.2.3 Special treatments of land-locked and geographically disadvantaged States

In dealing with marine living resources in EEZ, the 1982 UNCLOS provides land-locked States (LLS) and geographically disadvantaged States (GDS) with the right to participate in the exploitation of an appropriate part of the surplus of the living resources of EEZ of the coastal States of the same subregion or region. This special treatment of LLS and GDS is, however, mitigated by several difficult conditions attached thereto:[381] (1) LLS and GDS may claim their right of access only to the surplus resources, which are derived from the determination of TAC by the coastal State in its EEZ,[382]and its own harvesting capacity;[383] (2) LLS and GDS can enjoy their right of access to the surplus resources only on the basis of bilateral, subregional or regional agreements;[384] (3) LLS and GDS are required to take into account the relevant economic and geographical circumstances of all the States concerned, especially the need to avoid effects detrimental to fishing communities or fishing industries of the coastal State.[385] These are conditions hard to

[378] Article 203
[379] Article 202
[380] Part XIV, Articles 266-274
[381] Article 69, 70
[382] Article 61, para.1
[383] Article 62, para.2
[384] Article 69, para.2, Article 70, para.3
[385] Article 61, para., Article 70, para.1

satisfy in the current state of the coastal seas characterized by the scarcity of marine resources.

In respect of marine scientific research, the Convention requires States and competent international organizations to inform the neighbouring LLS/GDS of proposed marine scientific research projects with a view to giving them the opportunity to participate in such projects.[386]

In the field of the development and transfer of marine technology also, the Convention requires States to give special consideration to developing States, including LLS and GDS in such a way as to accelerate the social and economic development of the developing States for the benefit of all parties concerned on an equitable basis.[387]

5.3 Post-UNCLOS evolution of equality of States and equity

The 1992 UNCED instruments have explicitly formulated the concept of common but differentiated responsibilities as a principle designed to promote equitable balance between developed and developing States.

The 1992 UNCED Declaration explicates the context of common but differentiated responsibilities: developed countries should bear heavier responsibilities than developing countries, considering the differences in their contributions to global environmental degradation as well as in their technological and financial capacity in pursuing sustainable development.[388] The responsibility to protect the global environment in the pursuit of sustainable development is declared to be common to all States. However, it is acknowledged that, compared with developing countries, developed countries have made more contributions to global environmental degradation by consuming more materials causing ozone depletion and greenhouse effects, and it is more equitable to apply higher standards of conduct to developed countries in the international efforts to solve these global environmental problems. On the other hand, considering

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[386] Article 254

[387] Article 266, para.2, Article 269 (a), Article 272

[388] Principle 7 "...In view of the different contributions to global environmental degradation, States have common but different responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command."

differences between developed and developing countries in their capacities of mobilizing technological and financial resources to protect the global environment, it is recognized that the application of differentiated standards of conduct to developed and developing countries is more equitable. As such, the principle of common but differentiated responsibilities is characterized by the elements of conditionality and solidarity.[389]

In the 1992 Framework Convention on Climate Change, the principle of common but differentiated responsibilities is more concretely elaborated. Differently from the UNCED Declaration, the Climate Change Convention is silent on the historical responsibility of developed countries, but it lays more emphasis on the differences in the capabilities and socio-economic conditions between developed and developing countries, by juxtaposing the term "respective capabilities and their social and economic conditions" to the principle of common but differentiated responsibilities.[390] The Climate Change Convention classifies the responsibilities into three categories: 1) the commitments undertaken by all Parties;[391] 2) the commitments undertaken by developed countries and countries that are undergoing the process of transition to a market economy (Annex I Parties);[392] 3) the commitments undertaken only by developed countries (Annex II Parties).[393] The commitments undertaken by all Parties as common responsibilities are based on the recognition of climate change as a 'common concern'. These are obligations to develop and publish national inventories of anthropogenic emissions and sinks of all greenhouse gases, to formulate and implement national and regional programmes to mitigate climate change, to promote scientific and technical cooperation, to promote sustainable management of sinks and reservoirs of all greenhouse gases, to cooperate in preparing for adaptation to the impacts of climate change, to integrate climate change considerations into social, economic and environmental policies and actions, to promote education, training and public awareness related to climate change, etc. The commitments undertaken by Annex I Parties are more onerous, such as the commitments to adopt national policies and measures to limit the anthropogenic emissions of greenhouse gases and to protect the greenhouse sinks and reservoirs with the aim of returning to their 1990

[389] Patricia Birnie & Alan Boyle, International Law & the Environment, op.cit., p. 102
[390] Preamble, and Article 3 (1)
[391] Article 4 (1)
[392] Article 4 (2)

levels these anthropogenic emissions of greenhouse gases by the end of the present decade, to implement such policies and measures jointly with other Parties and assist other parties in reaching the objectives set by the Convention, etc. The commitments of solidarity assistance undertaken by Annex II Parties are the obligations to provide new and additional financial resources to meet the agreed full incremental costs incurred by developing country parties in complying with their obligations under the Convention.

The 1997 Kyoto Protocol to the Framework Convention on Climate Change has specified the differentiated responsibilities in quantitative scales. In Annex B of the Protocol, different limits (expressed in terms of percentage of base year or period) to be achieved within the period 2008 to 2012 are laid down for each of the Parties listed in Annex I of the Convention, taking into account their circumstances and the differences in their respective ability to reduce emissions, access to clean technology, use of energy, etc. Since developing States are not listed in Annex B, no emission limits apply to them. Developing country Parties are required only to meet the commitments undertaken by all Parties under Article 4 (1) of the Convention.

The 1992 United Nations Convention on Biological Diversity does not employ the explicit term of 'common but differentiated responsibilities'. In content, it contains the elements of the principle. In its text, the rationale of the differentiated responsibilities is embedded in the acknowledgement of the fact that "the provision of new and additional financial resources and appropriate access to relevant technologies can be expected to make a substantial difference in the world's ability to address the loss of biological diversity", and the fact that "special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies".[394] In addition, every obligation to be undertaken by each Contracting Party is expected to be implemented 'as far as possible and as appropriate', implying differentiated standards of obligation.

5.4 Conclusion

[393] Article 4 (3)
[394] Preamble

As Thomas Franck asserts, "Fairness is an underlying issue almost everywhere in environmental law, not only in the creating of new norms but also in designing the new order's necessary penumbra of procedures as well as its means of implementation and enforcement."[395]In global environmental affairs, complex issues are intertwined. Such issues should be dealt with through cooperation among multiple actors. In such an issue-area, a strict application of the principle of equality of States may not be conducive to positive results. Therefore the concepts of equity, fairness and justice permeate widely international norms dealing with the global environment. Equality of States adjusted by special treatments and differentiated responsibilities is proportional equality, which recommends; "treat the equal equally, and the unequal unequally."[396]

The 1982 UNCLOS was negotiated during the years when the voice of developing States claiming a more equitable international order was particularly strong. It was necessary to reconcile the claims of developing States and the established principle of equality of States. Under the general principle of equality of States, the Convention lays down different provisions stipulating preferential treatment for developing States or other categories of States, such as land-locked States and geographically disadvantaged States. In this way, the Convention had already conceived the principle of common but differentiated responsibilities all but in name, before it was formulated in the 1992 UNCED.

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[395] Thomas M. Frank, General Course on Public International Law, *Recueil des Cours*, 1993, III, p.345

[396] For the concept of proportional equality, see P.H. Kooijmans, The Doctrine of the Legal equality of States, A.W. Sythoff-Leyden, 1964, pp. 223-238

Chapter 5

Substantive norms of the regime for the protection of the marine environment under the 1982 UNCLOS: *Rules*

1. Theory of rationality and international regimes

International regimes are those institutions which are intended to orient State behaviour towards a set of goals on the basis of normative injunctions. Behaviour based on such injunctions can be said to be rational. However, rationality is a highly polysemous and multidimensional concept.

In the first place, rational action is based on the expectations formed as means of attainment of a chosen end (instrumental rationality) and derived from a belief in certain values (axiological rationality). In the Max Weber's taxonomy of social action, rational action is classified into instrumentally rational (*zweckrational*) action and value-rational (*wertrational*) action, distinguished from non-rational actions, such as affectual and traditional actions.[1] In addition to these two aspects of rationality, sociologists and philosophers, such as Raymond Boudon[2] and Carl G. Hempel,[3] introduce the concept of cognitive rationality as another dimension of rationality.

1.1 Instrumental rationality

For Max Weber, instrumentally rational action is oriented through "expectations as to the behaviour of objects in the external situation and of other human individuals, making use of these expectations as 'conditions' or 'means' for the successful attainment of the actor's own rationally chosen ends."[4] Broadly speaking, an action will qualify as rational

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[1] See Max Weber, *Economie et Société*, translated from *Wirtschaft und Geselschaft* by Julien Freund, Pierre Kamnitzer, Pierre Bertrand, Eric de Dampierre, Jean Maillard et Jacques Chavy, Plon, 1971, pp. 55-57

See also René POIRIER, Rationalité juridique et rationalité scientifique, in Archives de philosophie du droit, Tome 23 Formes de rationalité en droit, Sirey 1978, pp.11-35 « Il ya a donc la Raison comme fin et la Raison comme moyen. »

[2] See Raymond Boudon, Le Juste et Le Vrai, Librairie Arthème Fayard, 1995

[3] See Carl G. Hempel, The Philosophy of Carl G. Hempel, edited by James H. Fetzer, Oxford University Press, 2001

[4] Max Weber, *Wirtschaft und Gesellschaft*, English translation by A. M. Henderson and Talcott Parsons as

if, on the basis of the given information, it offers optimal prospects of achieving its objectives.[5] In economic theory, rationality means simply a choice which, among all possible choices, best achieves the goals of the person making the choice.[6] In this sense, rationality is synonymous with optimisation, such as profit maximization, cost minimization, and other types of optimisation. In the rational choice models, "human goals and motivations are assumed to be given *a priori* in the form of utility function, which allows an individual to make consistent choices among all possible bundles of goods and services. Economic actors are also assumed always to choose, among the alternatives open to them, that one of the alternatives that yields the greatest utility."[7] Rationality here means only instrumental rationality which guides rational choice of means in achieving a *given* goal. This is partial rationality in that it does not deal with the choice of goals, which is inherently a matter of value judgement. Not only the rational choice models, but also other utilitarian and functionalist theories focus on the instrumental aspect of rationality.[8]

1.2 Axiological rationality

Whereas instrumental rationality is the rationality in achieving a given goal, axiological rationality is the rationality in determining the goals. For Max Weber, value-rational (*wertrational*) action is determined by a conscious belief in the value for its own sake of some ethical, aesthetic, religious, or other form of behaviour, independently of its

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'Max Weber, The Theory of Social and Economic Organization', the Free Press, 1964, pp.115-117
Weber's original terms '*zweckrational*' and '*wertrational*' are translated in some different ways.

The Cambridge Companion to WEBER translates them as 'instrumentally rational' and 'value-rational' respectively. Stephen Turner (ed.) The Cambridge Companion of WEBER, Cambridge University Press, 2000, p. 31

Raymond Boudon translates '*Zwerckrationalität*' and '*Wertrationalität*' into '*rationalité instrumentale*' et '*rationalité axiologique*', Raymond Boudon, *Le sens des valeurs*, Presses Universitaires de France, 1999, p. 154

[5] Carl G. Hempel, The Philosophy of Carl G. Hempel, op.cit., 2001, p.311

[6] Michael Parkin, Economics, Second edition, Addision-Wesley Publishing Company, 1994, p. 19

[7] See Herbert A. Simon, Models of Bounded Rationality, Volume 3 Empirically Grounded Economic Reason, The MIT Press, 1997, p. 277
The theory of subjective expected utility (SEU theory) underlying neo-classical economics postulates that choices are made: (1) among a given, fixed set of alternatives; (2) with (subjectively) known probability distributions of outcomes for each; and (3) in such a way as to maximize the expected value of a given utility functions. See Herbert A. Simon, ibid, p. 291

[8] See Raymond Boudon, Le sens des valeurs, Presses Universitaires de France, 1999, II De la rationalité

prospects of success. Examples of pure rational orientation to absolute values would be the action of persons who, regardless of possible cost to themselves, act to put into practice their convictions of what seems to them to be required by duty, honour, the pursuit of beauty, a religious call, personal loyalty, or the importance of some 'cause' no matter in what it consists...when action is oriented to absolute values, it always involves 'commands' or 'demands' to the fulfilment of which the actor feels obliged.[9] This simply means the conformity to the value system.[10] Normative values constitute core elements of axiological rationality, as Joseph Raz lays emphasis on the normativity as the central characteristic of rationality, by maintaining: "rationality is the ability to realize the normative significance of the normative features of the world, and the ability to respond accordingly."[11] John Rawls perceives goodness as rationality.[12]

1.3 Cognitive rationality

Raymond Boudon proposes the concept of cognitive rationality as the basis of axiological rationality and instrumental rationality.[13] In a cognitivist perspective, a rational action is a product of cognition, which is the representation of circumstances of action, of a rational choice of a course of action among several possible ones, a selection of means appropriate for the goals and objectives.[14] Raymond Boudon asserts that an actor achieves

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instrumentale à la rationalité axiologique, pp. 81-136

[9] See Max Weber, op.cit, pp.115-118. See also Elster, rationality, economy, and society, in Stephen Turner (ed.), The Cambridge Companion to Weber, op.cit.
Instrumentally rational (*zweckrational*) action is determined by expectations as to the behaviour of objects in the environment and of other human beings; these expectations are used as "condition" or "means" for the attainment of the actor's own rationally pursued and calculated ends. Value-rational (*wertrational*) action is determined by a conscious belief in the value for its own sake of some ethical, aesthetic, religious, or other form of behaviour, independently of its prospects of success. The Cambridge Companion, p. 31

See also Julien Freund, La rationalization du droit selon Max Weber, in Formes de rationalité en droit, Archives de philosophie du droit, tome 23, Sirey, 1978, pp.69-92

[10] See Raymond Boudon, Le Juste et le Vrai, op. cit., p. 279. « *Wertrational* est alors un simple synonyme de 'conforme à ces valeurs ' ». See also Raymond Boudon, Le sens des valeurs, op. cit., P. 155 « rationalité axiologique veut simplement dire «soumission à des valeurs', 'attitude de conformisme à l'égard de telle ou telle valeur'.

[11] Joseph Raz, Engaging Reason, On the Theory of Value and Action, Oxford University Press, 1999, p. 68

[12] See John Rawls, A theory of justice, Oxford University Press, 1993, Chapter VII. Goodness as rationality

[13] Raymond Boudon, op.cit., p. 273, « ...Il faut introduire pour les comprendre, à côté de la « rationalité instrumentale » caractéristique de l'utilitarisme, la « rationalité axiologique »...ce qu'on peut appeler la « rationalité cognitive ».

[14] Louis Ouéré, *La cognition comme action incarnée*, in Anni Borzeik, Alban Bouvier, Patrick Pharo, (ed.), *Sociologie et connaissance Nouvelles approches cognitives*, CNRS Editions, 1998, pp. 143-175

cognitive rationality by constructing, in more or less intuitive ways, a "theory" which permits him to cope with a situation of decision.[15] The actor will endorse this theory if he has the impression that it is based on good or strong reasons (*raisons fortes*). Human beings accept descriptive belief (X is true) or normative belief (Y is good) when they can theorize their beliefs on the basis of good reasons. Such beliefs may or may not be objectively correct.[16] According to the concept of cognitive rationality, it is not the reality itself, but the perceived reality that shapes human actions. Such a concept of cognitive rationality lies in line with the concept of "factual premise" of Herbert Simon.[17]

Carl G. Hempel underlines the information basis of rational decision and action, by maintaining: "to judge the rationality of a decision, we have to consider, not what empirical facts - particular facts as well as general laws - are actually relevant to the success or failure of the action decided upon, but what information concerning such facts is available to the decision-maker." [18]

As such, cognitive rationality constitutes the foundation of axiological rationality as well as instrumental rationality, by providing humans with logical coherence, in forming their normative beliefs as well as descriptive beliefs.[19] In the context of international politics, cognitive rationality is based on common knowledge, which concerns actors' beliefs about each other's rationality, strategies, preferences, and beliefs, as well as about states of the external world.[20] Shared knowledge is also a necessary

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« Dans cette perspective, l'action est vraiment le produit d'une cognition, c'est-à-dire d'une représentation des circonstances de l'action, d'un choix rationnel d'un cours d'action parmi plusieurs possibles, d'une sélection des moyens appropriés aux fins ou aux buts de l'agent, et d'une subdivision de l'action en actions partielles permettant de parvenir méthodiquement au but visé. »

[15] See Raymond Boudon, Le sens des valeurs, op.cit., p. 96 : «Souvent, l'acteur doit construire, sur un mode plus ou moins intuitif, une 'théorie' lui permettant de faire face à une situation de décision .»

[16] See Raymond Boudon, Le Juste et le Vrai, op.cit., p. 97-136

[17] Herbert A. Simon, Administrative Behavior, the Free Press, Fourth Edition, 1997, p. 69
"The term factual premise does not mean an empirically correct statement but a belief, that is, an assertion of fact. The assertion may or may not be supported by evidence, and such evidence as exists may be of greater or lesser validity. Human decision-making uses beliefs, which may or may not describe how the world really is. We call such beliefs, whether true or false, "factual premises".

[18] Carl G. Hempel, op.cit, p.312 Hempel asserts: " The total empirical information that is available for a given decision may be thought of as represented by a set of sentences, which I will call the *information basis* of the decision or of the corresponding action.

[19] A person's beliefs are his or her 'view' of the world, what they 'hold' to be true about it, what they 'accept' as true. See Richard Swinburne, Epistemic Justification, Oxford University Press, 2001, p. 32

[20] Alexander Wendt, Social Theory of International Politics, Cambridge University Press, 1999, p. 159
For Wendt, "these beliefs need not be true, just believed to be true. Knowledge of a proposition P is "common" to a group G if the members of G all believe that P, believe that the members of G believe that P, believe that the members of G believe that the members of G believe that P, and so on."

condition of regime formation.[21] Special cultural forms like norms, rules, institutions, conventions, ideologies, customs, and laws are all made of common knowledge.[22]

But knowledge is always limited. The theory of bounded rationality postulates that human rationality is bounded by cognitive limitations. For Herbert A. Simon, human beings *satisfice*, rather than maximize.[23] Under the constraint of cognitive limitations, humans seek a solution which is 'good enough' rather than the best one.[24]

1. 4 Unicity and relativity of rationality

The three dimensions of rationality are conceptually analysed elements of the same thing, i.e. rationality. Joseph Raz underlines the unicity of rationality in that the same capacity (capacity-rationality) is involved in determining the goals as well as in choosing the means to achieve the goals.[25] He argues; "The reasoning ability and other capacities which make people rational in forming beliefs about scientific matters, or about the weather, or anything else which can be said not to be in itself normative, are the same abilities which make people rational in the way they adopt and maintain goals. Therefore, there is only one kind of rationality."[26]Raymond Boudon also believes that instrumental rationality, cognitive rationality and axiological rationality form a system composed of indissociable elements.[27]

Furthermore, the distinction of axiological rationality from instrumental rationality is a relative one, perceived in the means-end hierarchy. In the relationship

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[21] Martin List and Volker Rittberger, Regime Theory and International Environmental Management, in Andrew Hurrell and Benedict Kingsbury (eds.), The International Politics of the Environment, Oxford University Press, 1992, p; 103
See also John G. Ruggie, International Responses to technology: Concepts and Trends', *IO*, 29 (1975), 557-83

[22] Alexander Wendt, op.cit., 1999, p. 160

[23] See Herbert Simon, Models of Bounded Rationality, Volume 3, p. 295 "A decision maker who chooses the best available alternative according to some criterion is said to optimize; one who chooses an alternative that meets or exceeds specified criteria, but that is not guaranteed to be either unique or in any sense the best, is said to *satisfice*."

[24] For Simon, the term 'bounded rationality' is used to designate rational choice that takes into account the cognitive limitations of the decision-maker – limitations of both knowledge and computational capacity. Herbert Simon, Models of Bounded Rationality, Volume 3, p. 291

[25] Capacity-rationality means "a capacity to see the normative significance of the way things are, to comprehend what reasons they constitute, and the significance of that fact for oneself." Joseph Raz, op. cit., p.69

[26] Joseph Raz, op. cit., p. 74

between means and ends, an end can become a means with regard to a higher end. Pierre Demeulenaere maintains that a means can be considered as an intermediary end, since a means is evaluated in relation to the targeted end on the one hand, and it is evaluated in itself as an intermediary end. [28] Similarly, Herbert Simon asserts; "In the process of decision those alternatives are chosen which are considered to be appropriate means for reaching desired ends. Ends themselves, however, are often merely instrumental to more final objectives. We are thus led to the conception of a series, or hierarchy, of ends. Rationality has to do with the construction of means-ends chains of this kind."[29] But the structure of the hierarchy of means and ends is not always neatly established, as Herbert Simon states; "It is also as true of organizational as of individual behavior that the means-end hierarchy is seldom an integrated, completely connected chain. Often the connections between organization activities and ultimate objectives is obscure, or these ultimate objectives are incompletely formulated, or there are internal conflicts and contradictions among the ultimate objectives, or among the means selected to attain them...Both organizations and individuals, then, fail to attain a complete integration of their behavior through consideration of these means-end relationships. Nevertheless, what remains of rationality in their behavior is precisely the incomplete, and sometimes inconsistent, hierarchy."[30]

The theory of rationality in general is applicable to legal rationality, because law is essentially a problem of decision-making, which requires rationality.[31]

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[27] Raymond Boudon, Le Juste et le Vrai, op. cit., p. 277

[28] Pierre Demeulenaere, Normativité et rationalité dans l'analyse sociologique de l'action, in Raymond Boudon, Pierre Demeulenaere, Riccardo Viale (ed.), L'explication des normes sociales, Presses Universitaires de France, 2001, p. 191
"Il est évident que les moyens font l'objet d'une double évaluation : d'une part, dans leur statut même de moyen au regard d'une fin visée ; d'autre part, les moyens représentent eux-mêmes, s'ils sont retenus dans l'action en tant qu'ils permettent d'atteindre une fin visée, des finalités intermédiaires qui doivent alors être évaluées pour elles-mêmes (il s'agit de savoir si ces moyens sont acceptables, s'ils ne sont pas trop coûteux, ou dangereux, ou immoraux, etc.)

[29] Herbert A. Simon, Administrative Behavior, op. cit. p. 73

[30] Ibid, pp. 74-75

[31] Chaïm Perelman, Ethique et Droit, Editions de l'Université de Bruxelles, 1990, Partie II Le Droit, Chapitre I La rationalité juridique. P. 448 « Le droit, tel qu'elle fonctionne effectivement, est essentiellement un problème de décision : le législateur doit décider quelles seront les lois obligatoires dans une communauté organisée, le juge doit décider de ce qui est le droit dans chaque situation soumise à son jugement. Mais ni le législateur ni le juge ne prennent des décisions purement arbitraires : l'exposé des motifs indique les raisons pour lesquelles une loi a été votée et, dans un système moderne, tout jugement

2. Rules of the 1982 UNCLOS and their rationality

The regime for the protection of the marine environment is composed of rules and procedures in which different types of rationality are embedded to orient actors toward rational behaviour. As indicated above, axiological rationality and instrumental rationality are relative concepts. Sometimes, it is difficult or arbitrary to distinguish axiological rationality and instrumental rationality embedded in the single rule. In particular, most legal rules for the protection of the marine environment are instrumental in that the prescribed actions are not ultimate goals, but such rules are themselves highly value-laden. This is true of the rules of the 1982 UNCLOS for the protection of the marine environment. In contrast, the rules for cognitive rationality are relatively distinct from the rules for axiological or instrumental rationality, although right cognition can be also regarded as an instrument to achieve an objective. In this section, the rules set out in the Convention are classified into two categories: 1) rules for axiological and instrumental rationality; 2) rules for cognitive rationality. In each category, the rules are grouped into sub-categories according to their subject-matter.

2.1 Rules for axiological and instrumental rationality

2.1.1 Rules for maritime zoning[32]

From the early stages of its development, the law of the sea has developed on the basis of the idea of dividing the ocean space into two categories of zones: 1) the marginal belt of the coastal sea over which the coastal State exercises certain rights; 2) the remaining open seas in which all States enjoy the freedom of navigation and fishing. This zonal approach was consolidated into the concepts of the territorial sea and the high seas, and further elaborated in the 1982 UNCLOS.

The 1982 UNCLOS divides the seas and oceans into several jurisdictional zones, *i.e.* the internal waters, archipelagic waters, the territorial sea, the contiguous zone, the

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doit être motivé. »

[32] For the concept of zonal approach, see above, Section I, 2

exclusive economic zone and the high seas. Accordingly, the sea-bed is also divided into the continental shelf under national jurisdiction and the Area beyond the limits of national jurisdiction. The Convention incorporates the rules of the customary international law and provides a set of new rules for the definition of the geographical scopes of these zones.[33]

The Convention provides other rules and criteria necessary for maritime zoning: the rules for the establishment of the system of straight baselines and those for the delimitation of the coastal zones between the States with opposite or adjacent coasts.[34] For the determination of the outer limits of the continental shelf beyond 200 nautical miles from the baselines, the Convention has instituted the Commission on the Limits of the Continental Shelf.[35]

The maritime zones determined in accordance with these rules constitute the jurisdictional basis on which Convention defines the rights and obligations of the coastal States and other States. This maritime zoning can be regarded as one of the instruments which serve higher ends, such as the establishment of "a legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment."[36] But, the rules for maritime zoning can be regarded as axiological rules in that each maritime zone is heavily charged with teleological or ideological values. The territorial sea is established by extending the sovereignty toward the coastal sea; the high seas are inseparably linked with the concept of the freedom of the seas; the regime of EEZ is established as a reflection of the aspiration of developing countries for economic development and the desire to gain greater control over the economic resources

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[33] Article 8, para.1 for internal waters;
Article 49, para.1 for the archipelagic waters;
Article 3 for the breadth of the territorial sea;
Article 33, para.2 for the contiguous zone;
Article 57 for the outer limits of the exclusive economic zone
Article 76 for the outer limits of the continental shelf;
Article 86 for the definition of the high seas
Article 1 for the definition of the Area.

[34] Article 15 for the delimitation of the territorial sea, Article 74 for the delimitation of EEZ, Article 83 for the delimitation of the continental shelf.

[35] Article 76, para.8 & Annex II

[36] Preamble

off their coasts;[37] the Area is established on the basis of the concept of the common heritage of mankind, which carries moral and political meaning in line with a socialist system of ownership;[38] the concept of continental shelf is based on the inherent right of the coastal State, as declared by ICJ.[39]

The rules set down in the Convention for the maritime zoning contribute to the stabilization of the jurisdictional basis in the sea. These rules, which are better elaborated than ever, are still incomplete, but may facilitate the settlement of the issues of delimitation of continental shelf and EEZ in many coastal seas throughout the world.

However, the legal status of each zone, expressed in terms of rights and obligations conferred on the coastal State and other States in respect thereof, change with the passage of time. In particular, the status of the high seas undergoes rapid evolution through the Convention and after.

2.1.2 The freedom of the high seas

Since Grotius, the freedom of the high seas had been consolidated as a rule of customary international law and was codified in the 1958 Geneva Convention on the High Seas as a cornerstone of the law of the sea. It was reincorporated into the 1982 UNCLOS, in slightly different terms.[40]

To counterbalance the freedom of the high seas, the Convention lays down a set of duties of States in the high seas in respect of the interests of other States, the safety at sea and the conservation of the living resources. All States have the duty to give due regard for the interests of other States in their exercise of the freedom of the high seas,

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[37] See R.R. Churchill and A.V. Lowe, The Law of the Sea, Manchester University Press, op. cit., p. 133

[38] See Kemal Balsar, The Concept of the Common Heritage of mankind in International law, Martinus Nijhoff Publishers, 1998, pp. 63-64 Balsar argues that the term common heritage will carry purely moral and political, rather than legal meaning.

[39] In the North Sea Continental Shelf cases, ICJ stated: "the rights of the coastal State in respect of the area of continental shelf that constitutes a natural prolongation of its land territory into and under the sea exist *ipso facto* and *ab initio*...In short there is here an inherent right." 1969 *ICJ Rep.* 3, at 23

[40] The freedom of the high seas articulated in the Convention includes; (a) freedom of navigation, (b) freedom of overflight, (c) freedom to lay submarine cables and pipelines, (d) freedom to construct artificial islands and other installations permitted under international law, (e) freedom of fishing, (f) freedom of scientific research (Article 87, para.1), while the freedom of the high seas provided for in the 1958 High Seas Convention includes, *inter alia*; (1) Freedom of navigation; (2) Freedom of fishing; (3) Freedom to lay submarine cables and pipelines; (4) Freedom to fly over the high seas (Article 2).

and due regard for the rights with respect to activities in the Area,[41] the duty to take such measures for their nationals as may be necessary for the conservation of the living resources of the high seas,[42] the duty to co-operate with each other in the conservation and management of living resources in the areas of the high seas,[43] and the duty to take measures which are designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield.[44] The flag State has the duty to take measures for ships flying its flag as are necessary to ensure safety at sea.[45]

Under the Convention, the conceptual basis of the freedom of the high seas is preserved. In a sense the content of the freedom is further reinforced compared with that under the 1958 Geneva Convention.[46] However, in reality, the freedom of the high seas has been reduced in many ways through the Convention and subsequent agreements, reflecting the desire of the coastal States to expand their seaward jurisdiction and the necessity of conserving marine living resources and protecting the marine environment.

First, the space of the high seas has been substantially reduced. By definition, the term 'high seas' designates the residual space.[47] As a result of the introduction of the EEZ regime, a substantial part of the high seas is converted into EEZ. If all coastal States proclaim 200 nautical miles of EEZ, the sum of EEZs amounts to 37,745,000 square nautical miles,[48] which represents some 36 % of the global ocean space.[49] These seas converted or convertible into EEZ are the areas where human activities such as fishing, navigation, overflight, exploitation of sea-bed resources, laying cables and pipelines and

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[41] Article 87, para.2
[42] Article 117
[43] Article 118
[44] Article 119, para.1
[45] Article 94
[46] Compared with the freedom of the high seas enumerated in the 1958 Geneva Convention on the High Seas, the 1982 Convention adds some new elements, i.e. freedom to construct artificial islands and other installations, and freedom of scientific research.
Of course, these new elements could be included in the category of "others" in the Geneva Convention.
[47] Article 1 of the 1958 Geneva Convention on the High Seas defines the high seas as "all parts of the sea that are not included in the territorial sea or in the internal waters of a State." In the 1982 UNCLOS, the seas under national jurisdiction has increased, and the high seas as " all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State."

[48] Limits in the Seas, No. 36, 4th revision (1981)
[49] The global ocean space is around 361 million sq. km. (105,251,000 sq. nautical miles) See The Ocean our Future, The Report of the Independent World Commission on the Oceans, Cambridge University Press, 1998, p. 164

scientific research are particularly intensive. Among these activities, the freedom of navigation and the freedom of laying cables and pipelines are preserved under the EEZ regime, but fishing and scientific research are brought under the jurisdiction and control of the coastal States. In addition, as a result of the redefinition of the continental shelf under the Convention, the sovereign rights of coastal States have been extended to the mineral resources therein and the sedentary species dependent thereupon, which were treated as *res nullius* before.

Second, the freedom of the high seas is reduced by the introduction of the concept of the common heritage of mankind. By the establishment of the deep sea-bed regime, the controversies over the freedom of mining in the sea-bed under the high seas are over.

Third, even in the remaining high seas, the freedom is substantially restricted for the sake of conservation of marine living resources. The Convention lays down several conditions on the freedom of fishing in the high seas:[50] Regarding straddling fish stocks and highly migratory species, the Convention calls for the coastal States and fishing States to cooperate for the conservation of these species in the seas adjacent to EEZ or throughout the region. This resulted in the adoption of the 1995 Agreement.[51] By virtue of this Agreement, fishing of straddling fish stocks and highly migratory fish stocks is regulated in the high seas. In addition, in the high seas surrounded by EEZs, such as the Bering Sea Doughnut Hole, the Sea of Okhotsk Peanut Hole, the North-East Atlantic Banana Hole, the Loophole of the Barents Sea, the fishing of straddling fish stocks in the high seas are regulated under regional or bilateral regimes.[52] For the conservation of marine mammals, the Convention allows coastal States and the competent international organizations to prohibit, limit or regulate the exploitation of marine mammals more

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[50] Article 116: "All States have the right for their nationals to engage in fishing on the high seas, but subject to: (a) their treaty obligations, (b) the rights and duties as well as the interests of coastal States provided for, *inter alia*, in article 63, paragraph 2, and articles 64 to 67, and (c) provisions for the conservation of living resources of the high seas.

[51] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

[52] See the following articles in Olav Schram Stokke (ed.) Governing High Seas Fisheries, Oxford University Press, 2001
David A. Balton, The Bering Sea Doughnut Hole Convention: Regional Solution, Global Implications;
Alex G. Oude Elferink, The Sea of Okhotsk Peanut Hole De facto Extension of Coastal State Control;
Robin R. Churchill, Managing Straddling Fish Stocks in the North-East Atlantic: A Multiplicity of Instruments and regime Linkages – but How Effective a Management?

strictly than other species, in EEZ as well as in the high seas.[53] In fact, the twelve large whale species are protected under the 1946 International Convention for the Regulation of Whaling,[54] and other marine mammals under some regional regimes.[55] In case of anadromous stocks, fisheries can only be conducted in waters landward of the outer limits of EEZs, except in cases such restriction would result in economic dislocation for a state other than the state of origin.[56] This means that fishing of these stocks is virtually banned in the high seas, except in special cases.[57] Some regional agreements have been concluded for the conservation of salmon and other anadromous stocks.[58] For the management of catadromous species, the Convention recognizes the responsibility of the coastal State in whose waters catadromous species spend the greater part of their life cycle, and harvesting of these species can be conducted only in waters landward of the outer limits of exclusive economic zones.[59] Therefore, fishing in the high seas for catadromous species is banned without exception.

The 1989 Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific regulates the high seas fishing by prohibiting a certain type of fishing gears.

Considering these regulations, among others, of the high seas fishing, it is not an

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Olav Schram Stokke, The Loophole of the Barents Sea Fisheries Regime

[53] Articles 65, 120

[54] The 1982 Amendment to the 1946 Whaling Convention has introduced the moratorium of commercial catches of the whale species.

[55] The following regional regimes have been created for the protection of the cetaceans and other marine mammals:

The cetaceans regime under the 1991 Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS).

The cetaceans regime under the 1996 Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS).

The cetaceans regime under the 1991 Action plan for the conservation of cetaceans in the Mediterranean Sea.

The regime under the 1990 Agreement on Cooperation in Research, Conservation and Management of Marine Mammals in the North Atlantic.

[56] Article 66, para.3 (a)

[57] According to Article 66, para.3 (a), fisheries of anadromous species in the high seas are allowed only in cases where the banning of such fishing in the high seas would result in economic dislocation for a State other than the State of origin. With respect to such fishing beyond the outer limits of the EEZ, States concerned shall maintain consultations with a view to achieving agreement on terms and conditions of such fishing giving due regard to the conservation requirements and the needs of the State of origin in respect of these stocks.

[58] The 1982 Reykjavik Convention for the Conservation of Salmon in the North Atlantic Ocean (NASCO), the 1992 Convention for the Conservation of Anadromous Stocks in the North Pacific.
See William T. Burke, The New International Law of Fisheries, UNCLOS 1982 and beyond, Oxford University Press, 1994, Chapter 4 anadromous species

[59] Article 67

exaggeration to ask: "What remains of the freedom of fishing in the high seas?"[60]

This trend of contraction of the freedom of the high seas is rooted in the axiological rationality, as was the establishment of the regime of the high seas. Originally the cause of the freedom of the high seas was justified by the necessity of the freedom of navigation and the freedom of fishing. Now that the protection of the marine environment has emerged as a new axiological objective, the concept of the freedom of the high seas should be changed. The 1982 UNCLOS has made an axiological compromise: on the one hand, it maintains the freedom of navigation and other means of maritime communications; on the other, it restricts the freedom of fishing and the freedom of activities causing marine pollution in the high seas.

2.1.3 Duty of cooperation

The duty of cooperation in its largest sense is inherent in all international regimes and agreements. It is always associated with the concept of good faith,[61] *i.e.* it means the duty to cooperate in good faith. When expressed in abstract terms, the duty of cooperation can be regarded as a principle. An all-purpose abstract duty of cooperation underlies all of other principles, in particular, the principle of good neighbourliness, the duty not to cause damage to others, etc. However, the duty of cooperation can be formulated in concrete requirement of certain type of actions, such as duty of prompt notification, duty of exchange of information, etc. These concrete duties can be regarded as instrumental rules, since they guide human actions toward a certain objective.

Any regime or any agreement, if not unilaterally imposed, is an instrument designed to induce the parties to concerted actions on the basis of the principles and rules set down therein. Many international instruments, in particular the Charter of the United Nations, [62] the 1972 Stockholm Declaration,[63] the 1992 Rio Declaration,[64] *inter alia,*

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[60] See Magali Le Hardy, Que reste-t-il de la liberté de la pêche en haute mer, Institut du droit économique de la mer, Editions Pedone, 2002

[61] See ILC Draft Articles on International Liability for injurious consequences arising out of acts not prohibited by international law, Art. 4: "States concerned shall cooperate in good faith and..."
In the *Nuclear Tests* case, ICJ declared; "one of the basic principles governing the creation and performance of legal obligations, whatever their source, is the principle of good faith." *ICJ reports* 1974, p.268

[62] Article 1: "The purposes of the United Nations are...To achieve international cooperation in solving

articulate, more or less concretely, the duty of cooperation. Even in the international agreements in which the duty of cooperation is not explicitly formulated, compliance with the agreement is in itself a kind of cooperation. Therefore, in games theories, the term "cooperate" and the term "comply" are synonymously and interchangeably used.

The 1982 UNCLOS emphasises the spirit of all-purpose cooperation.[65] In addition, it provides specific duties of cooperation among States concerned in their efforts for the protection of the marine environment from pollution and the conservation of marine resources.

<Duty of cooperation for the protection of the marine environment from pollution>
The 1982 UNCLOS calls for States to cooperate in formulating and elaborating international rules, standards and recommended practices and procedures for the protection and preservation of the marine environment.[66]

Prompt notification to a State concerned is also a means of cooperation. The duty to inform other States of known environmental hazards can be deduced from the judgment of ICJ, which recognised, in the *Corfu Channel*, the responsibility of Albania for having failed to notify imminent and foreseeable damage.[67] Early notification of imminent or actual environmental damage is an essential means of preventing, reducing and controlling the pollution of the marine environment.[68] The Convention provides the obligation of prompt notification as a guideline in case of imminent or actual environmental damage by pollution.[69] When States take any measures against foreign vessels for the protection of the marine environment, they are required to promptly notify

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international problems of an economic, social, cultural, or humanitarian character..."
[63] Principle 24
[64] Principle 27
[65] Preamble: "The States Parties to this Convention, prompted by the desire to settle, in a spirit of mutual understanding and cooperation, all issues relating to the law of the sea."
[66] Article 197
[67] See Malcolm N. Shaw, International Law, Third edition. Cambridge University Press, 1994, p.540
[68] ILC Draft Articles combines 'notification' and 'information'. Draft Articles on International Liability for injurious consequences arising out of acts not prohibited by international law, Articles 8
It is sure that notification is an act of providing information. But, the act of informing a concerned party of the risk of damage in an emergency situation is closer to the concept of cooperation than to the concept of exchange of general information. ILC Draft itself deals notification of an emergency in a separate article, i.e. Art. 17
[69] Article 198

the flag State and any other State concerned of the measures taken.[70]

The Convention requires the States in the area affected by pollution to jointly develop and promote contingency plans to eliminate the effects of pollution and preventing or minimizing the damage.[71] Contingency plans can be established by an individual State. But in the provision of the Convention, the emphasis is placed on the cooperation in establishing contingency plans.

In the *MOX plant* case (Ireland v. UK), ITLOS ordered provisional measures focusing on the duty of cooperation to prevent pollution of the marine environment which might result from the operation of the MOX plant.[72]

<Duty of cooperation for the conservation of marine living resources>

In the 1982 UNCLOS, the duties of cooperation in conserving marine living resources are formulated in the context of the problems of dealing with shared resources, reflecting the duty of cooperation articulated in the 1974 Charter of Economic Rights and Duties of States.[73]

For the conservation of living resources in EEZ, the coastal State and competent international organizations are required to cooperate.[74]

The species with a wide range of movement, such as straddling or transboundary stocks, marine mammals, anadromous and catadromous species, are shared resources and thus create the situations which necessitate close cooperation among States concerned. For these species, the Convention provides particular obligations of cooperation.[75]

Cooperation through prompt notification is also required in relation to the exercise of jurisdiction for the conservation of marine living resources. When the coastal State arrests or detains foreign vessels, in the exercise of its sovereign rights to explore, exploit, conserve and manage the living resources in its EEZ, it is obliged to

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[70] Article 231
[71] Article 199
[72] ITLOS ordered Ireland and the United Kingdom to cooperate and consult in order to exchange further information, to monitor risks and effects of the operation of the plant, and to devise measures to prevent marine pollution. ITLOS, the *MOX Plant case*, Order of 3 December 2001
[73] UNGA Res. 3281 XXIX, Article 3: "In the exploitation of natural resources shared by two or more countries each state must cooperate on the basis of a system of information and prior consultation in order to achieve optimum use of such resources without causing damage to the legitimate interests of others."
[74] Article 61, para.2
[75] Articles 63, 64, 65, 66, 67,

promptly notify the flag State, through appropriate channels, of the action taken and on any penalties subsequently imposed.[76]

In the *Southern Bluefin Tuna* case (Australia and NZ v. Japan), ITLOS required the cooperation between the parties to the dispute as well as other States engaged in fishing for the stock.[77]

2.1.4 Rules for the protection of the marine environment from pollution

2.1.4.1 Obligation of States to protect and preserve the marine environment

The 1982 UNCLOS postulates: "States have the obligation to protect and preserve the marine environment."[78] This is a reformulation of the obligation not to cause damage to the environment of other States or of areas beyond the limits of national jurisdiction, which has already been consolidated into a rule of customary international law. The obligation not to cause damage to the environment of "other States" had been recognised since the *Trail Smelter* arbitration.[79] The 1972 Stockholm Declaration has extended the spatial scope of this responsibility to "areas beyond the limits of national jurisdiction."[80] This enlarged responsibility has remained, however, in the language of 'soft law' instrument.[81] The 1982 UNCLOS consolidates this responsibility into a legally binding obligation: the Convention itself is a legally binding instrument and Article 192 is formulated in legally binding terms. However, compared with Principle 21 of the 1972 Stockholm Declaration, Article 192 of the Convention is limited in geographical scope. The "marine environment" in Article 192 is interpreted as the environment of all seas and oceans. But the spatial scope of this obligation is limited to the "marine" environment, excluding terrestrial and atmospheric environment.

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[76] Article 73, para.4

[77] In the *Southern Bluefin Tuna* case, ITLOS prescribed provisional measures, ordering the parties, *i.a.,* to resume negotiations with a view to reaching agreement on measures for the conservation and management of Southern Bluefin Tuna and to seek agreement with other states engaged in fishing for Southern Bluefin Tuna. ITLOS *Southern Bluefin Tuna* cases, order of 27 August 1999

[78] Article 192

[79] Trail Smelter Arbitration, 33 *AJIL* (1939), 35 *AJIL* (1941)

[80] Declaration of the UN Conference on the Human Environment, Stockholm, 1972, Principle 21

[81] The same obligation is reiterated in the 1992 Rio Declaration, in Principle 2

As in the 1972 Stockholm Declaration and the 1992 Rio Declaration, this provision of the Convention is balanced with the sovereign right of States to exploit their resources pursuant to their environmental policies, as provided in Article 193.

The general obligation under Article 192 is more concretely reformulated in Article 194, which requires States to take all measures necessary to prevent, reduce and control pollution of the marine environment from any source within the limit of their capacity. On the one hand, the general obligation under Article 192 seems further strengthened by Article 194, which requires States to take "all measures" that are necessary. On the other hand, the tone of obligation is moderated by the qualifying terms "using for this purpose the best practicable means at their disposal and in accordance with their capabilities."

2.1.4.2 The best practicable means

The 1982 UNCLOS sets down the obligation of States to take measures that are necessary to prevent, reduce and control pollution of the marine environment from any source, using "the best practicable means".[82]

The concept of "the best practicable means (BPM)" was first introduced in British law, *i.e.* the Alkali etc. Works Regulation Act 1906.[83] The concept of the best practicable means is similar to that of "the best practicable environmental option (BPEO)", which is defined as follows: "A 'bpeo' is the outcome of a systematic consultative decision making procedure which emphasises the protection and conservation of the environment across land, air and water. The 'bpeo' procedure establishes, for a given set of objectives, the option that provides the most benefit or least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term."[84] Since the terms 'most benefit' and 'least damage' remain subjective and abstract, this definition relies on the procedural rule as a means to achieve them, instead of providing substantive standards.

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[82] Article 194, para.1

[83] See David Hughes, Environmental Law, Butterworths, 1996, p. 470, Albert Mumma, Environmental Law: Meeting UK and EC Requirements, McGraw-Hill Book Company, 1995, p. 132

[84] Royal Commission on Environmental Pollution, 1988

Some other concepts which are similar to that of the best practicable means or BPEO have been elaborated in other international instruments. The 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes defines the "best available technology (BAT)" as "the latest stage of development of process, facilities or methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste."[85] This definition focuses on the technological feasibility in choosing a measure to take. When combined with economic feasibility, the criterion of the best available technology becomes "the best technology (or techniques) not entailing excessive costs (BATNEEC).[86] The term 'not entailing excessive costs' indicates the necessity of maintaining the balance between the economic costs of an environmental measure and its effectiveness in reducing environmental damage. As BAT changes with time in the light of changes in technological, economic and social factors, as well as changes in scientific knowledge and understanding,[87] BATNEEC is a contextual concept. It depends on the level of technological development and socioeconomic context. In this sense, these rules belong to the category of process standards.[88]

2.1.5 Rules for the conservation of marine living resources

2.1.5.1 Optimum utilization

The 1982 UNCLOS presents optimum utilization as the objective of the exploitation and conservation of living resources in EEZ.[89] Optimum utilization seems to give more weight to utilization than to conservation, but it does not require full utilization.[90] It is an expression of the necessity of balance between the two conflicting objectives, the

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[85] The 1992 Convention on the protection and use of transboundary watercourses and international lakes, Annex I

[86] See Albert Mumma, Environmental Law: Meeting UK and EC Requirements, McGraw-Hill Book Company, 1995, pp. 138-9

[87] The 1992 Convention on the protection and use of transboundary watercourses and international lakes, Annex I, para.2

[88] See Stuart Bell & Donald McGillivray, Environmental Law, 5th edition, Blackstone Press, 2001, p. 185

[89] Article 62
Article 64 places the same objective for highly migratory species, within and beyond EEZ.

[90] See Patricia Birnie & Alan Boyle, International Law & the Environment, op.cit., pp.660-661

exploitation and the conservation.

The objective of "optimum use" was already formulated in the 1974 Charter of Economic Rights and Duties of States, in dealing with shared resources.[91] The term "optimum" is highly subjective and abstract concept. Optimum utilization itself does not provide a quantitative criterion. It should be translated into some quantitative rules, such as maximum sustainable yield, or total allowable catch, etc. The rule of optimum utilization is an axiological rule in that it is presented as an objective. On the other hand, in the hierarchy of means and ends, it may be regarded as an instrument for a higher objective, such as sustainable development.

2.1.5.2 Maximum sustainable yield

The 1982 UNCLOS presents the maximum sustainable yield (MSY) as a basic guideline for the conservation of the marine living resources.[92] MSY is an instrumental rule serving the objective of optimum utilization.

In its EEZ, the coastal State is obligated to take measures designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield.[93] In the high seas also, States are required to take measures designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield.[94]

In concept, MSY is a model for rational action on the basis of quantitative analysis. In practice, the validity and effectiveness of this method is questionable. It is a purely biological model, lacking economic considerations. When combined with economic factors, it can be converted into maximum economic yield.[95] But the main shortcoming of MSY resides in the fact that it is a model based on a single species approach.[96] From a systemic viewpoint, the 'balance' among the components of an

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[91] UNGA Res. 3281 XXIX, Article 3: "In the exploitation of natural resources shared by two or more countries each state must cooperate…in order to achieve optimum use of such resources without causing damage to the legitimate interests of others."
[92] For the concept of MSY, see supra. Chapter 4, III. Sustainable development
[93] Article 61, para.3
[94] Article 119, para.1
[95] See supra. Chapter 4, 3. Sustainable development and the 1982 UNCLOS
[96] See supra. Chapter 4, 3. Sustainable development and the 1982 UNCLOS

ecosystem is more important than the 'maximization' of the yield of a given species.

2.1.5.3 Total Allowable Catch

The application of MSY presupposes a regulatory fishing on the basis of an output control system. An authority should determine the total quantity of harvest, which should be appropriately distributed in the form of quota. For this, the Convention requires the application of the method of total allowable catch (TAC). For the living resources in its EEZ, the coastal State is required to determine the allowable catch.[97] For the living resources of the high seas, States are supposed to determine the allowable catch.[98] Since no individual State is entitled to determine TAC in the high seas, it can only be determined in the context of regional or international regimes, in which a multilateral commission is generally empowered to determine TAC.[99] TAC is also a rule which is instrumental to the objective embedded in the rule of MSY, which in turn serves the objective of optimum utilization.

2.1.5.4 Consideration on dependent and associated species

The 1982 UNCLOS requires the coastal State, in taking conservation and management measures for the living resources of the EEZ, to "take into account the interdependence of stocks", and "take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened".[100] In parallel, with regard to the conservation measures for the living resources in the high seas, the 1982 UNCLOS calls upon States to "take into account the interdependence of stocks" and "take into consideration the effects on species

[97] Article 61
[98] Article 119 stipulates; "In determining the allowable catch...States shall take measures..."
[99] For example, under the 1994 Convention on the Conservation and Management of Pollock Resources Central Bering Sea, the Annual Conference of the Parties is empowered to determine the allowable harvest level for pollock in the Convention Area. Article IV.
The 1995 Agreement provides: "In fulfilling their obligation to cooperate through subregional or regional fisheries management organizations or arrangements, States shall... agree, as appropriate, on participatory rights such as allocations of allowable catch or levels of fishing effort. Article 10 (b)

associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened".[101]

These provisions require States to look beyond the target species. The consideration of the effects on species associated with and dependent upon harvested species constitutes an element of ecosystem approach, although it is not a complete ecosystem approach by itself.[102]Consideration on dependent and associated species is instrumental to the conservation of ecosystem, which is instrumental to the goal of sustainable development.

2.1.6 Rules for the distribution of jurisdiction

The 1982 UNCLOS provides a complex set of rules governing the distribution of jurisdiction for the protection of the marine environment. The persons who are entitled to exercise jurisdiction are classified into the flag State, the coastal State and the port State. The powers that these legal persons can exercise are classified into the legislation and enforcement. The persons on whom these States can exercise these powers (jurisdiction *ratione personae*) are generally classified into the category of the vessels flying their flag (or their nationals) and that of foreign vessels (or foreign nationals). The area in which a particular jurisdiction can be exercised (jurisdiction *ratione loci*) is divided into the maritime zones and the port. The subject-matter covered by the Convention in the issue-area of the marine environment is divided into two categories: the protection of the marine environment from pollution and the conservation of marine living resources.

2.1.6.1 Distribution of jurisdiction *ratione personae*

Conceptually, the traditional flag State jurisdiction on vessels in the sea is largely maintained in the Convention. Flag States are required to provide for the effective enforcement of international rules, standards, laws and regulations, irrespective of where

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[100] Article 61
[101] Article 119
[102] See supra. 2. Ecosystem approach and the 1982 UNCLOS

a violation occurs.[103]

However, as a result of the expansion of the coastal seas under national jurisdiction, the space in which a coastal State is entitled to exercise its jurisdiction *ratione loci* has been substantially extended at the expense of flag State jurisdiction. Under article 56, the coastal State has jurisdiction with regard to the protection and preservation of the marine environment in its EEZ. The coastal State has also the right to take reasonable measures for the prevention, reduction and control of pollution from pipelines,[104] and from or in connection with sea-bed activities in the areas under national jurisdiction. On the basis of the jurisdictional zones, the coastal State is entitled to exercise its prescriptive jurisdiction in respect of dumping within its territorial sea and EEZ or onto its continental shelf,[105] and pollution from ships within its territorial sea and EEZ.[106] In respect of pollution from vessels, the coastal State may exercise enforcement jurisdiction within its territorial sea and EEZ. When a vessel has violated, or there are clear grounds for believing that it has violated, within its territorial sea or EEZ, its laws and regulations for the prevention, reduction and control of pollution from vessels, the coastal State may institute proceedings, under physical inspection, or require the vessel to give relevant information.[107] In addition, the coastal State has the sovereign rights for the purposes of exploring and exploiting, conserving and managing the natural resources in its EEZ and continental shelf.[108]

The Convention provides also a set of rules for port State jurisdiction, which empower a port State to exercise the jurisdiction over foreign ships which are voluntarily present in its ports or its off-shore terminals in respect of violations of international rules and standards, committed outside its internal waters, territorial sea or EEZ.[109] Port State jurisdiction has developed as a complementary means of ensuring maritime safety and preventing marine pollution from vessels. Therefore, it has been introduced into international conventions dealing with maritime safety or marine pollution from

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[103] Article 217, para.1
[104] Article 79, para.2
[105] Article 210, para.5
[106] Article 211, para.4, 5
[107] Article 220
[108] Article 56, para.1
[109] For Hakapää, the basic idea of port State jurisdiction is "the exercise of enforcement authority over violations not physically affecting the port State". K. Hakapää, Marine Pollution in International Law.

vessels.[110] In addition, a number of non-binding regional Memoranda of Understanding on Port State Control,[111] in the wake of the 1982 Paris MOU, have elaborated detailed and harmonized guidelines for carrying out port State inspections.[112] Under the Convention, port States are required to exercise jurisdiction, but only in respect of discharges and seaworthiness.[113] Port State jurisdiction is complementary and secondary to flag State jurisdiction and coastal State jurisdiction in that the enforcement by the port State is dependent on the request by the damaged coastal State or flag State: 1) In the case of discharge violation in the internal waters, territorial sea or EEZ of another State, the port State shall not institute proceedings unless requested by the flag State or the State damaged or threatened by the discharge violation;[114] 2) When any State requests the port State to investigate a discharge violation which is believed to have occurred in, cause, or threatened damage to the internal waters, territorial sea or EEZ of the requesting State, the port State shall comply with the request as far as practicable, and the records of such investigation should be transmitted upon the request to the flag State or to the coastal State;[115] 3) Any proceedings instituted by the port State on the basis of such an investigation may be suspended at the request of the coastal State when the violation has occurred within the latter's internal waters, territorial sea or EEZ.[116]

2.1.6.2 Rules for concurrent jurisdictions

Flag States are entitled and required to exercise their jurisdiction for the prevention, reduction and control of pollution of the marine environment from vessels flying their flag, wherever the vessels navigate or anchor. Therefore, when a vessel is present in a

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Material Obligations and Jurisdiction, Helsinki Suomalainen Tiedeakatemia, 1981, p. 174

[110] For example, the 1966 International Convention on Load Lines, the 1969 International Convention on Tonnage Measurement of Ships, the 1974 International Convention for the Safety of Life at Sea, MARPOL 73/78, the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, the 1976 ILO Convention No. 147 "Merchant Shipping Convention", etc.

[111] At present there are seven regional MOU: the 1982 Paris MOU, the 1992 Vina del Mare (Chile) MOU, the 1993 Tokyo MOU, the 1996 Caribbean MOU, the 1997 Mediterranean MOU, the 1998 Indian Ocean MOU, the 1999 Abuja MOU

[112] http://www.parismou.org/ParisMOU.html

[113] Articles 218, 219

[114] Article 218, para.2

[115] Article 218, para.3, 4

[116] Article 218, para.4

port or a sea area under the jurisdiction of a State other than the flag State, the problem of concurrent jurisdiction arise: 1) concurrence of jurisdiction between the flag State and the coastal State; 2) concurrence of jurisdiction between the flag State and the port State.

In respect of an environmental damage caused by a vessel in a foreign EEZ, the jurisdiction of the flag State prevails over the jurisdiction of the coastal State. When a violation has occurred in EEZ causing an environmental damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or EEZ, the coastal State may institute proceedings, including detention of the vessel, in accordance with its laws.[117] However, the right of the flag State is safeguarded. If the flag State takes proceedings within six months of the date on which proceedings were first instituted by the coastal State, the latter should suspend the proceedings. In this sense, the flag State jurisdiction has priority over coastal State jurisdiction. But, this priority is not absolute because the proceedings instituted by the coastal State may not be suspended if they are related to a case of major damage to the coastal State.[118] Ambiguity remains on the question of the priority between flag State jurisdiction and coastal State jurisdiction, because there is no objective criterion to determine what is "major damage".

In the field of fishing in EEZ, the priority of coastal State jurisdiction over flag State jurisdiction is clear. The coastal State has the sovereign rights for the purposes of exploring, exploiting, conserving and managing the marine living resources in its EEZ, foreign vessels may fish there only on the basis of quota accorded by the coastal State. In this context, the Convention requires States to comply with the laws and regulations adopted by the coastal State.[119]

Between flag State jurisdiction and port State jurisdiction, the priority of the former is clear, because port State jurisdiction was conceived from the beginning as a complement to the existing jurisdiction of the flag and coastal States.[120] Under Article 218 of the Convention, the power of the port State for investigation and proceedings is secondary to that of the coastal State or the flag State.

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[117] Article 220, para.6
[118] Article 228, para.1
[119] Article 58, para3
[120] British Branch Committee on the Law of the Sea, "The Concept of Port State Jurisdiction", International Law Association Report 1974, pp.400-408

2.2 Rules for cognitive rationality

Cognitive rationality can be enhanced by relying on the best knowledge available to decision-makers, by sharing the knowledge base through exchange of information and by enriching the knowledge base through scientific research. The 1982 UNCLOS provides a set of rules designed to improve the quality of collective cognition in these ways.

2.2.1 The best scientific evidence

Under the 1982 UNCLOS, the coastal State is required to take into account the best scientific evidence available to it, in taking conservation and management measures in its EEZ.[121] In parallel, the Convention calls for States to take conservation measures for the living resources in the high seas on the best scientific evidence available to the State concerned in taking conservation measures.[122] In dealing with ice-covered areas, coastal States have the right to adopt and enforce laws and regulations based on the best available scientific evidence for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of their EEZ.[123]

While the best practicable means, BAT and BATNEEC are rules for the enhancement of instrumental rationality, the best available scientific evidence is a rule aimed at improving the quality of cognition. The best scientific evidence available is a fluid concept. It is a subjective judgment to determine what is the best among available scientific evidence. Furthermore, availability in scientific evidence varies greatly from State to State. When there is no objective criterion for decision-making, cognitive rationality can be improved through procedural rules, such as EIA, environmental monitoring, or exchange of information, transfer of technology, as provided for by the Convention.

2.2.2 EIA and environmental monitoring

[121] Article 61
[122] Article 119, para. 1 (a)

The 1982 UNCLOS requires States to observe, measure, evaluate and analyse, by recognized scientific methods, the risks or effects of pollution of the marine environment.[124] States are also obligated to take precautions against potential effects of planned activities.[125]

Environmental Impact Assessment,[126]defined as "an examination, analysis and assessment of planned activities with a view to ensuring environmentally sound and sustainable development", is a "necessary tool to improve the quality of information presented to decision makers so that environmentally sound decisions can be made paying careful attention to minimizing significant adverse impact."[127]

Since EIA is a national procedure for evaluating the likely impact of a proposed activity on the environment, common guidelines and principles are necessary to ensure a common ground of perception shared by all States concerned. The 1987 UNEP Goals and Principles of EIA and the 1991 Convention on EIA in a Transboundary Context have been adopted to this end. These instruments require not only the assessment in its narrow sense but also the proposal of alternatives and notification and consultation between States concerned. The essential requirements set down in these instruments are, among others, a description of a proposed activity, a description of the potentially affected environment, a description of alternatives, notification to and consultation with potentially affected States.[128] The degree of depth of environmental assessment will be proportional to the degree of significance of likely effects on the environment.[129] For example, the 1991 Protocol on Environmental Protection to the Antarctic Treaty (Madrid protocol) lays down the process of EIA in gradual steps, from Initial Environmental Evaluation to Comprehensive Environmental Evaluation, according to the significance of likely effects.[130]

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[123] Article 234
[124] Article 204
[125] Article 206
[126] The 1987 UNEP Goals and Principles of Environmental Impact Assessment, preamble.
[127] The 1991 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), preamble.
[128] The 1987 UNEP Goals and Principles, Principle 4, the 1991 Espoo Convention, Article 5 and Appendix II Content of the Environmental Impact Assessment Documentation
[129] UNEP Goals and Principles, Principle 5: "The environmental effects in an EIA should be assesses with a degree of detail commensurate with their likely environmental significance."
[130] The 1991 Protocol on Environmental Protection to the Antarctic Treaty. Annex I Environmental Impact Assessment. If an activity is determined, in the preliminary stage, as having less than a minor or

Although EIA is basically an *ex ante* procedure to be taken prior to the beginning of an activity,[131] the 1991 Convention on EIA lays down also the post-project analysis as an *ex post* procedure to be taken in particular situations, but not in all cases.[132]

Environmental monitoring is a continuous process (*ex ante* and *ex post*) of gathering information through surveillance of the effects of any activities. Monitoring provides constant feedback for decision-making, from long-term protection to rapid guidance in emergency situations.[133] As such, monitoring can be regarded as an element of EIA. However, the function of environmental monitoring may go beyond the scope of EIA in that monitoring is a continuous process and it means not only the surveillance of environmental phenomena but also the surveillance of compliance by different actors.[134]

2.2.3 Obligation to exchange information

Information sharing among regime members is a way of establishing a common basis for collective cognition. Without consensual knowledge, their actions may diverge, rather than converging around a common goal. The 1982 UNCLOS lays down the duty of States to exchange information in many fields.

To protect the marine environment from pollution, the Convention calls for States to co-operate, directly or through competent international organizations, for the purpose of promoting studies, undertaking programmes of scientific research and encouraging the exchange of information and data acquired about pollution of the marine environment.[135]

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transitory impact, the activity may proceed forthwith; if is has been determined that an activity will have more than a minor or transitory impact, an Initial Environmental Evaluation shall be conducted; If an Initial Environmental Evaluation indicates or if it is otherwise determined that a proposed activity is likely to have more than a minor or transitory impact, a Comprehensive Environmental Evaluation shall be prepared.

[131] See The UNEP goals and Principles, Goals: "1. To establish that before decisions ate taken by the competent authority or authorities to undertake or to authorize activities that are likely to significantly affect the environment, the environmental effects of those activities should be taken fully into account."
The Espoo Convention, preamble: "the need and importance to develop anticipatory policies..."
The Madrid Protocol, Article 8, para.2: "the assessment procedures set out in Annex I are applied in the planning processes leading to decisions about any activities..."

[132] The Convention on EIA in a Transboundary Context, particle 7: The concerned Parties, at the request of any such Party, shall determine whether, and if so to what extent, a post-project analysis shall be carried out...

[133] See Alexander Kiss & Dinah Shelton, Manual of European Environmental Law, Second edition, Cambridge University Press, 1993, p. 135

[134] See infra. Chapter 6, 3. Compliance System

[135] Articles 200, 204, 205

States are required to contribute and exchange available scientific information relevant to the conservation of fish stocks in EEZ.[136] The same obligation is set down for the conservation of fish stocks in the high seas.[137]

Concerning scientific research, the Convention lays down the duty of a State to provide other States with the information necessary to prevent and control damage to the health and safety of persons and to the marine environment,[138] and the duty to make available by publication and dissemination information on major programmes and their objectives as well as knowledge resulting from marine scientific research.[139]

The duty of transfer of marine science and marine technology can be also regarded as an obligation of information exchange.[140]

The duty of exchange of information is particularly emphasised in the ILC's Draft Articles. [141]

2.2.4 Obligation of due publicity

While the duty of information exchange is a rule of action between the actors concerned, the duty of due publicity is a duty to give information to the rest of the world. Under the 1982 UNCLOS, coastal States are entitled and obligated to adopt a variety of laws and regulations applicable to foreigners in respect of the safety at sea, the conservation of living resources, the protection of the marine environment, etc. To be complied with by foreigners, these laws and regulations should be properly communicated to those foreigners through due publicity.

The most basic duty of due publicity laid down on a coastal State is to clarify the geographical scope of the areas in which it exercises its jurisdiction. A coastal State is required to give due publicity to the charts or lists of geographical co-ordinates of its baselines, the outer limits of its territorial sea,[142] the charts or lists of geographical co-

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[136] Article 61, para.5
[137] Article 119, para.4
[138] Article 242, para.2
[139] Article 244
[140] Article 266
[141] ILC Draft Articles on International Liability for injurious consequences arising out of acts not prohibited by international law, Articles 8, 12, 13
[142] Article 16, para 2

ordinates of outer limits of the EEZ and the lines of delimitation thereof,[143]and the charts or lists of geographical co-ordinates of outer limits of the continental shelf and the lines of delimitation thereof.[144] An archipelagic State is obliged to give due publicity to the charts or lists of geographical co-ordinates of its archipelagic baselines.[145]

For the safety of navigation, the coastal State is required to give due publicity to all laws and regulations relating to the innocent passage in its territorial sea,[146] to sea lanes and traffic separation schemes in the territorial sea,[147] as well as any danger to navigation of which it has knowledge within its territorial sea.[148] States bordering international straits are required to give appropriate publicity to all sea lanes and traffic separation schemes,[149] and to any danger to navigation or overflight within or over the strait of which they have knowledge.[150] An archipelagic State is obligated to give due publicity to the sea lanes and traffic separation schemes established in the archipelagic waters.[151] A coastal State is required to give due notice of the construction of artificial islands, installations or structures, and to give appropriate publicity to the depth, position and dimensions of any installations or structures not entirely removed.[152]

When a State has established particular requirements for the prevention, reduction and control of pollution of the marine environment as a condition for the entry of foreign vessels into their ports or internal waters or for a call at their off-shore terminals, that State is required to communicate such requirements to the competent international organizations for the diffusion of the relevant information.[153]

States are required to publish reports of the results obtained when monitoring the risks or effects or pollution,[154] and to communicate the reports of the results of environmental assessment.[155]

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[143] Article 75, para 2
[144] Article 84, para 2
[145] Article 47, para 9
[146] Article 21, para 3
[147] Article 22, para 4
[148] Article 24, para 2
[149] Article 41, para 6
[150] Article 44
[151] Article 53, para 10
[152] Article 60, para 4
[153] Article 211, para 3
[154] Article 205
[155] Article 206

When a coastal State has established a specially protected area in its EEZ, the coastal State is obligated to publish the limits of any such area.[156]

2.2.5 Obligation to promote scientific research

Development of marine science and marine technology is essential in improving cognitive rationality as well as instrumental rationality for the protection of the marine environment from pollution and the conservation of the marine living resources. To this end, the 1982 UNCLOS dedicates one complete part to the subject-matter of Development and Transfer of Marine Technology. Part XIV of the Convention underlines the necessity and importance of development of marine science and marine technology. For this, it calls for States to cooperate, directly or through competent international organizations for the development and transfer marine science and marine technology.

2.3 Conclusion

Since the 1982 UNCLOS is a framework convention, it is not rich in technical rules for the protection of the marine environment. However, international rules developed and to be developed in other agreements may be incorporated into the regime under the 1982 UNCLOS through the mechanisms examined in Chapter 3.

[156] Article 211, para 6 (b)

Chapter 6

Procedural and behavioural aspects of the regime for the protection of the marine environment under the 1982 UNCLOS

1. Decision-making procedures

A regime is created, operated and transformed through decisions made by its members. Such decisions are collective choices based on the common will of its members. In order to facilitate decision-making, a set of pre-established procedures is necessary. Legitimacy of decisions based on procedural justice is crucial in generating convergent expectations and inducing thereby regime members to cooperate.[1] Institutionalization of procedures contributes to the enhancement of procedural rationality in the making, functioning and evolution of regimes, in particular in multilateral regimes.[2]

The decision-making procedures in the regime under the 1982 UNCLOS can be classified into three categories: 1) a set of decision-making procedures employed for the creation of the regime; 2) a set of decision-making procedures for the functioning of the regime; 3) a set of decision-making procedures for the transformation of the regime.

1.1 Decision-making procedures for the creation of the regime

The regime under the 1982 UNCLOS has been established by the adoption and entry into force of the text of the Convention.

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[1] See Thomas M. Franck, The Emerging Right to Democratic Governance, *AJIL*, 86 (1992)
For Franck, "In the international context, legitimacy is achieved if – or to the extent that – those addressed by a rule, or by a rule-making institution, perceive the rule or institution to have come into being and to be operating in accordance with generally accepted principles of right process." Franck proposes four indicators of legitimacy of rule-making: *pedigree, determinancy, coherence* and *adherence*.
See also Daniel Bodansky, The Legitimacy of International Governance: A Coming Challenge for International Environmental Law?, *AJIL*, 93 (1999)

[2] Pierre-Marie Dupuy, Droit international public, 3e édition, Dalloz, 1995, p. 288-9 Institutionalisation des procédures.

1.1.1 Procedures for the negotiation and adoption of the 1982 UNCLOS

Although convened by the Resolution of the General Assembly of the United Nations,[3] UNCLOS III was an independent body and adopted its own rules of procedure.[4] The procedures of the negotiation and elaboration of the text of the Convention were characterized by the practices of package deal combined with the procedures of decision-making by consensus. Package deal and consensus are distinct concepts; the former is a technique of negotiation, the latter is a method of making collective decisions at the end of negotiation. But both of them are rooted in the spirit of compromise, which is indispensable in hammering out agreements on numerous issues among numerous States.

From the preparatory stage of UNCLOS III, the idea of package deal was embedded in the United Nations General Assembly Resolution, which declared "the problems relating to the high seas, territorial waters, contiguous zones, the continental shelf, the superjacent waters, and the sea-bed and ocean floor beyond the limits of national jurisdiction are closely linked together."[5] In the universal conference dealing with virtually all the issues relating to the maritime affairs, it would have been practically impossible to devise formulae acceptable to all States in every issue, if all individual issues had been separately dealt with. The President of the Conference gave an explanation of the meaning of the package deal; "The very nature of the concept of a package deal must mean that no delegation's position on a particular issue would be

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[3] A/Res. 2750 c (XXV), 17 December 1970

[4] There have been many debates at different levels on the question whether the rules of procedure of the United Nations are automatically applicable to the conferences convened by the United Nations.
In 1980, the ILC, in its comments to the Secretary-General on the review of the multilateral treaty-making process, stated; "Each United Nations codification conference…approves its own rules of procedure." See Review of the Multilateral Treaty-Making Process, Report of the Secretary-General, Addendum 1, Observations of the International Law Commission, para.95, UN Doc. A/35/312/Add.2 (1980)
In 1985, the United Nations prepared draft standard rules of procedure applicable to all the conferences convened by the General Assembly of the United Nations. See Draft standard rules of procedure for United Nations conferences, Report of the Secretary-General, UN Doc. A/40/611 (1985) These standard rules of procedure are "so formulated that, if approved by the General Assembly, they will automatically govern all conferences hereafter convened by any organ of the United Nations, except to the extent otherwise specified by the convening organ." UN Doc. A/40/611 (1985), para. 9 This draft was not adopted.
The general practice of the international conferences is that "where a conference of plenipotentiaries is convened by the UN (or in the past by the League of Nations), the convening body prepares provisional rules of procedure. The conference, although usually adopting the provisional rules as its own provisional rules, does this as an independent act of the conference and not by virtue of it being convened by the UN." Robbie Sabel, Procedure at International Conferences, Cambridge University Press, 1997,

[5] GA Resolution 2574 (XXIV) (Dec. 15, 1969)

treated as irrevocable until at least all the elements of the 'package' as contemplated had formed the subject of agreement. Every delegation, therefore, had the right to reserve its position on any particular issue until it had received satisfaction on other issues which it considered to be of vital importance to it."[6] Thus, compromise is essential for package deal, in which each State calculates its overall interests until the last moment of negotiations, by making concessions in some issues and taking compensations in other issues.[7] In a package deal, "by bringing together a number of proposals, each fervently supported by some delegations but opposed by others, it may be possible to obtain a 'package', which contains attractive features for so many States that it will gain wide support, even though each State also finds some less acceptable elements in it."[8] In a series of issue-linkages, a general equilibrium of interests can be achieved through compromises among all the participants. In general, a solution worked out in such a deal can be completely satisfactory to no participant but it should be acceptable to every participant, as the President of the Conference stated; "...delegations have said that the Convention does not fully satisfy the interests and objectives of any State...It has successfully accommodated the competing interests of all nations."[9] In this process, unofficial intersessional meetings facilitated the negotiations.[10]

It should be noted that not all the provisions of the 1982 UNCLOS are the products of package deal. A majority of the provisions of the Convention are the result of the codification of the existing rules of customary international law.[11] In principle, there could be little room for a deal in the process of codification. In practice, however, as

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[6] Explanatory Memorandum by the President of the Conference, UN Doc. A/CONF.62/WP.10/Rev.1 (1979)

[7] The spirit of compromise through package deal which prevailed in UNCLOS III was clearly expressed in the speech by the U.S. Representative to the second session; "We are prepared to accept, and indeed we would welcome, general agreement on a 12-mile outer limit of the territorial sea and a 200-mile outer limit for the economic zone, provided it is part of an acceptable comprehensive package including a satisfactory regime within and beyond the economic zone and provision for unimpeded transit of straits used for international navigation." Speech by U.S. Representative John R. Stevenson to the Second Session of UNCLOS III, July 11, in 71 Department of States Bulletin, 232, 233 (1974)

[8] Henry G. Schermers and Niels M. Blokker, International Institutional Law, Martinus Nijhoff Publishers, 1995, p. 499

[9] Closing Statement by the President of Conference on the Law of the Sea. See Myron H. Nordquist and Choon-ho Park, (ed.), Reports of the United States Delegation to the Third United Nations Conference on the Law of the Sea, Occasional Paper No. 33, Law of the Sea Institute, University of Hawaii, 1983, p. 687

[10] See Judge Jennings, Law-Making and Package Deal, op. cit. p. 348

[11] See Hugo Caminos and Michael R. Molitor, Progressive Development of International Law and the Package Deal, *AJIL*, 1985

Judge Jennings has pointed out, even the firmly established principle of the freedom of the high seas has seen significant changes as a result of the bargaining process.[12]

In the global conference with the participation of some 150 States dealing with all the issues of the laws of the sea, conflicts of interest were inevitable from the outset; between developing States (assembled under the banner of 'Group of 77') and developed States, between coastal States and maritime powers, between coastal States and land-locked or geographically disadvantaged States. In the conference, developing States were overwhelming in number, but weak in real power. Considering this complexity of the negotiations, UNCLOS III decided to apply consensus rule by adopting the Gentleman's Agreement at its second session in 1974.[13] Consensus rule showed its merits as a procedure which was more consistent with the concept of sovereign equality and more conducive to a general acceptance compared with majority voting, and more flexible than unanimity rule. [14] Consensus rule revealed also its demerits, such as the tendency of blurring the expression of common will,[15] the protraction of negotiations inevitable to achieve the desired concurrence of views and to avoid express objections.[16]

In UNCLOS III, not all the decisions were made by consensus. Discussions of the conference were divided into three main committees,[17] and *ad hoc* negotiating groups. Consensus rule was systematically employed in the works of the committees. But the adoption of the final text of the Convention was made through a formal vote, in which 130 States voted in favour, 4 voted against, 17 abstained.[18] The lack of general

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[12] See Judge Jennings, Law-Making and Package Deal, in Mélanges Offerts à Paul Reuter, 1981, p. 623

[13] The so-called Gentleman's Agreement, appended to the Rules of Procedure adopted at Caracas in 1974, provides: "Bearing in mind the problems of ocean space are closely interrelated and need to be considered as a whole...the Conference should make every effort to reach agreement on substantive matters by way of consensus and there should be no voting on such matters until all efforts at consensus have been exhausted." UN Doc. A/CONF. 62/30 (1974)

[14] Henry G. Schermers and Niels M. Blikker state the advantages of consensus; "Like unanimity, it fully respects sovereignty, and in common with majority voting, it fully takes into account the interests of the majority of States. Finally, it acknowledges the differences in power and interests between States." Henry G. Schermers and Niels M. Blokker, op. cit. p. 785

[15] Henry G. Schermers and Niels M. Blikker point out the disadvantages of decisions be consensus; "the private character of negotiations, leaving no room for extensive public records which might facilitate the solution of future questions of interpretation; furthermore, negotiations are usually time-consuming and the content of decisions may be excessively watered down through almost endless compromises." Idem.

[16] For the disadvantage of consensus, see Henry G. Schermers and Niels M. Blokker, op.cit. p. 773

[17] Committee One dealt with the issue-area of Sea-bed, Committee Two with the maritime zoning such as, territorial sea, contiguous zone, the continental shelf, exclusive economic zone, the high seas, and the high seas fishing, Committee Three with the preservation of the marine environment and scientific research.

[18] UNCLOS III, Official Records, vol. XVI, pp. 152-67

acceptance in the process of the adoption of the final text revealed the deficiency inherent in the majority voting. Most of the States which voted against or abstained in this voting were industrial powers, which were outnumbered by developing States, but powerful enough to block the launch of the regime. The entry into force of the Convention was delayed until the claims of the outnumbered minorities were incorporated in the 1994 Agreement, which modified the Convention in respect of activities in the Area.[19]

1.1.2 Procedures for the entry into force of the 1982 UNCLOS

For the establishment of a regime based on a legal text, the adoption of the text is not the final step of the regime creation. For the regime to start up, the text should come into force by a definitive expression of consent by a required number of States.[20] The 1982 UNCLOS was open for signature for a specified period of time at specified places, from 10 December 1982 until 9 December 1984 at the Ministry of Foreign Affairs of Jamaica and also, from 1 July 1983 until 9 December 1984, at the United Nations Headquarters in New York.[21]

As means of the final expression of the consent to be bound, the Convention provides for ratification, accession and formal confirmation.[22] For the entry into force, the Convention requires ratification or accession by at least 60 States and the elapse of 12

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[19] Article 2 of the Implementing Agreement defines the relationship between the Convention and the Implementing Agreement. "1. The provisions of this Agreement and Part XI shall be interpreted and applied together as a single instrument. In the event of any inconsistency between this Agreement and part XI, the provisions of this Agreement shall prevail."
See supra. Chapter 3

[20] As the procedures for the final expression of consent, the Convention specifies the methods of ratification and accession for States, and formal confirmation for international organizations.

[21] Article 305

[22] Ratification is defined by the Vienna Convention on the Law of the Treaties as "the international act so named whereby a State establishes on the international plane its consent to be bound by a treaty". Article 2 (1) (b)
Accession is primarily the means for a State to become a party if, for whatever reason, it is unable to sign the treaty. This may be because…the treaty restricts signature to certain States, or because there is a deadline for signature and it has passed. See Anthony Aust, Modern Treaty Law and Practice, Cambridge University Press, 2000, p. 88

Formal confirmation is the means for an international organization to express its consent to be bound by the treaty. Article 3 of Annex IX to the Convention stipulates; "An international organization may deposit its instrument of formal confirmation or of accession if a majority of its member States deposit or have deposited their instruments of ratification or accession."

months after the date of deposit of the sixtieth instrument of ratification or accession.[23] For each State ratifying or acceding to the Convention after the deposit of the sixtieth instrument of ratification or accession, the Convention shall enter into force on the thirtieth day following the deposit of its instrument of ratification or accession.[24]

The rules for the entry into force of the 1982 UNCLOS are quite different from those employed in the process of its negotiation and adoption in many aspects. First, the process of the entry into force of a treaty is a particular type of collective choice. While the negotiation and adoption of a multilateral treaty are conducted through simultaneous participation of States in a conference, decisions to ratify or accede to a treaty are made individually by the signatories, but the effect of such serial decisions is produced *en bloc,* when individual decisions are accumulated to a predetermined number. Second, "When a treaty has entered into force, it is in force *only* for those States which have consented to be bound by it",[25] unless the treaty is consolidated into customary international law, and except to the extent it is applicable to non-parties in some particular cases. In this respect, the procedures for the entry into force of the Convention, like other multilateral treaties, can be regarded as a special type of unanimity rule. Third, in the procedures of decision-making by consensus employed in the process of the negotiation, except for the adoption of the final text, the expression of the will of each individual State can be either explicit or implicit. In such a process, silence is normally regarded as tacit consent. To the contrary, in the process of the entry into force of the Convention, only the consent expressed explicitly, in the form of instruments of ratification or accession, is counted. In this process, silence is regarded as non-acceptance.[26]

1.2 Decision-making procedures for the functioning of the regime

Decisions for the routine functioning of the regime are made in the meetings of the States Parties. When a dispute arises among States Parties in the course of the functioning, such a dispute should be settled to avoid disruption of the regime.

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[23] Article 308, para. 1
[24] Article 308. para. 2
[25] Anthony Aust, Modern Treaty Law and Practice, op.cit., p. 131

1.2.1 Procedures for the Meetings of the States Parties

For a regime to function efficiently, it should be equipped with some mechanisms designed to facilitate communication and exchange of views among regime members. For this, the 1982 UNCLOS requires the Secretary-General of the United Nations to "convene necessary meetings of States Parties".[27] After the entry into force of the Convention, a regular forum has been instituted in the name of "the Meeting of States Parties to the 1982 United Nations Convention on the Law of the Sea (SPLOS)". Since there is no formal secretariat for the Convention, the Secretary-General of the United Nations plays the role of secretariat. SPLOS deals with the matters concerning the institutions established by the Convention, such as the International Tribunal for the Law of the Sea and the Commission on the Limits of the Continental Shelf; the elections of their members as well as their budgetary and administrative matters. In addition, SPLOS serves as a forum for the exchange of information and discussions on matters related to the Convention.

SPLOS has adopted the "Rules of Procedures for Meetings of States Parties" on the model of the procedures employed in UNCLOS III. In the Rules of Procedures for SPLOS, the term "general agreement" is employed in place of "consensus",[28] but with the same meaning. [29] The meeting may proceed to a vote only after all efforts at achieving general agreement have been exhausted. In the event of a vote, decisions on questions of substance shall be taken by a two-thirds majority of the States Parties present and voting, provided that such majority includes a majority of the States Parties participating in the

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[26] In case a State manifests sufficient evidence of acquiescence to the application of the Convention in its practices, the Convention might be applicable to that State.

[27] Article 319, para 2. (e)

[28] The Convention defines consensus as "the absence of any formal objection". Article 161, para. 8. (e)

[29] The traditional consensus method established in the UNCLOS III is summarized in Article 312 of the Convention defining the procedures of amendment., "...The conference should make every effort to reach agreement by way of consensus and there should be no voting on them until all efforts at consensus have been exhausted." In the Rules of Procedures for meetings of States Parties, "general agreement" is defined; "Meeting may proceed to a vote only after all efforts at achieving general agreement have been exhausted." SPLOS/2/Rev.3 adopted on 26 July 1995

Meeting.[30] Decisions on questions of procedure shall be taken by a majority of the States Parties present and voting.[31]

1.2.2 Procedures for the settlement of disputes

Dispute settlement is a special type of decision-making. Decisions are made by a third party. The dispute settlement system, as a component of a regime, is designed to resolve a particular type of problem, i.e. disputes concerning the interpretation or application of the constituent treaty. Without an appropriate mechanism designed for dispute settlement, a regime may be disrupted or paralyzed. The dispute settlement system of a given regime reflects the nature of the regime. Since the 1982 UNCLOS covers a variety of issue-areas and contains many equivocal provisions as a result of the package deal and compromise, there is much room for diverging interpretations and applications, which may result in disputes. Reflecting these characteristics of the regime, the Convention provides a variety of dispute settlement mechanisms: bilateral procedures, such as exchange of views, consultation and negotiation; third party procedures, such as conciliation and procedures entailing binding decisions.[32]

1.3 Decision-making procedures for the transformation of the regime

A regime may evolve through the modification of regime injunctions or through the change in the composition of its members. The 1982 UNCLOS sets out a set of procedures for these two ways of regime change.

1.3.1 Procedures for the amendment of the 1982 UNCLOS

For a treaty to adapt to the changing environment, it should be endowed with a mechanism of amendment. The 1982 UNCLOS provides for two sets of procedures for

[30] Rules of Procedures of SPLOS, SPLOS/2/Rev.3, Rule 53
[31] Idem. Rule 54
[32] See infra. 3. Compliance System

amendment: 1) procedures for the amendment to the provisions other than those of Part XI; 2) procedures for the amendment to the provisions of Part XI.[33]

An amendment to the provisions other than those relating to activities in the Area is not a routine decision but a critical decision tantamount to partial legislation. It requires therefore a set of procedures similar to those applied in the process of the adoption of the Convention.

Since the International Sea-Bed Authority (ISBA) is created for the administration of activities in the Area, amendment to the provisions of Part XI and Annex VI is entrusted to ISBA.[34]

1.3.2 Procedures for the entry and withdrawal of regime members

A change in the composition of the regime members entails a change in the character of the regime. In a bilateral regime, the withdrawal of one of the members results in the complete collapse of the regime. In a global regime, the entry or withdrawal of a small number of members may not result in a drastic change in the nature of the regime, but the entry or withdrawal of a great number of members or of one or more key members may change the nature of the regime.[35]

The Convention provides the mechanisms for the entry into and withdrawal from the regime under the Convention. A State can be a member of the regime by becoming a State Party to the Convention by way of ratification or accession.[36] An international organization may become a member by means of official confirmation.[37]

A State may withdraw from the regime under the Convention by denouncing the Convention. A State Party may denounce the Convention by written notification to the Secretary-General of the United Nations, and the denunciation shall take effect one year after the date of receipt of the notification, unless the notification specifies a later date.[38]

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[33] See supra. Chapter 3
[34] Article 314
[35] In the case of the regime of the League of Nations, the non-participation of the United States of America was one of the main causes of the weakness of the regime.
[36] Article 306, 307
[37] At present, the European Community is the only international organization that became party to the Convention by means of official confirmation.
[38] Article 317

However, when the Convention is consolidated into customary international law, a State may not withdraw from the regime under the Convention. In this vein, the Convention stipulates that the denunciation shall not in any way affect the duty of any State Party to fulfil any obligation embodied in this Convention to which it would be subject under international law independently of this Convention.[39]

1.4 Evolution of the decision-making procedures in international forums

The doctrine of absolute sovereignty which dominated for most of the nineteenth century entailed the general application of the rule of unanimity in the vast majority of international conferences held during the period.[40] Unanimity rule was also the basic procedure for decision-making in the League of Nations.[41] In this period, the application of majority voting was considered acceptable for the adoption of agendas or certain other procedural matters. It was within the more technical public unions that majority rule came into general use, especially in those concerned with technical or scientific matters and involving non-diplomatic representation, such as UPU, ITU, the Metric Union, etc.[42]

The Charter of the United Nations marked a turning point in the development of decision-making procedures from the unanimity rule to the majority vote.[43] In the Charter, the majority vote became the rule, with some exceptions.[44] The problems of the majority voting emerged sharply in UNCTAD, where, as a result of decolonization, developing countries could adopt decisions by overwhelming vote, but the implementation of such decisions depended on the cooperation by the developed countries which were

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[39] Article 317, para. 3

[40] Louis Henkin ascertains that the principle of unanimity has been justified on the ground of the sovereign equality of states. See Louis Henkin, How Nations Behave? Columbia University Press, 1979, p. 33

[41] The Covenant of the League of Nations, Art. 5

[42] See Philippe Sands and Pierre Klein, Bowett's Law of International Institutions, Fifth Edition, Sweet & Maxwell, 2001, p. 263

[43] See Miguel Marin-Bosch, Votes in the UN General Assembly, Kluwer Law International, 1998
See also Louis B. Sohn, Voting Procedures in United Nations Conferences for the Codification of International Law, *AJIL*, vol. 69 (1975)

[44] In the General Assembly, decisions on important questions shall be made by a two-thirds majority of the members present and voting. Decisions on other matters shall be made by a majority of the members present and voting. (Art. 18) In the Security Council, decisions on procedural matters shall be made by an affirmative vote of nine members. Decisions on all other matters shall be made by an affirmative vote of nine members including the concurring votes of the permanent members. (Art. 27) In the ECOSOC and the

outnumbered in the voting.[45] As B. Buzan pointes out, the key problem in contemporary international decision-making is the divorce of power from voting majorities.[46]

As a reaction to these problems inherent in the majority vote, a tendency towards decision-making by consensus began to be preferred in a large number of international organizations in the 1960s.[47] Since then, increasing number of resolutions of the General Assembly have been taken by consensus.[48] As such, UNCLOS III was not the first to employ consensus rule but "the first formalization of consensus."[49] Before UNCLOS III, "nearly all prior use of consensus had been conducted informally, and has been based simply on the consent of the actors involved."[50]

The innovative element of the decision-making procedures employed in UNCLOS III resided in the new way of making consensus, termed "active consensus", in which "the most important element of this special form of decision-making by consensus was according the president and the three main committee chairmen the initiative in producing so-called informal negotiating texts, which effectively obliged interested States to take position to encourage or discourage the formation of consensus around them."[51]

Another novel aspect of the decision-making procedures of UNCLOS III was the combination of consensus rule with package deal. Before UNCLOS III, it was rare that a single conference dealt with such a variety of issues. In a negotiation dealing with a single issue or a small number of issues, there is little room to make a variety of packages. In UNCLOS III, the issues were so numerous that package deal was not only possible but also inevitable. In UNCLOS III, as in many other subsequent meetings, consensus was not an absolute rule. It was backed up by the majority voting procedure. After the

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Trusteeship Council, all decisions shall be made by a majority of the members present and voting. (Art. 67, 89)

[45] See Philippe Sands and Pierre Klein, op.cit, p. 265

[46] B. Buzon, Negotiating by consensus: Developments in Technique at the United Nations Conference on the Law of the Sea, 75 *AJIL* (1981), p. 326

[47] See C. Wilfred Jenks, Unanimity, The Veto, Weighted Voting, Special and Simple Majorities and Consensus as Modes of Decision in International Organizations, in Cambridge Essays in International law, Essays in Honour of Lord McNair 48 (1965), K. Zemanek, Majority Rule and Consensus Technique in Law-making Diplomacy, in R. St. J. MacDonald and D. M. Johnston (ed.), The Structure and Process of International Law: Essays in Legal Philosophy, Doctrine and Theory, 1983, pp. 857-887

[48] M. Morin-Bosch, How nations vote in the General Assembly of the United Nations, *International Organization*, 41, (1987), pp. 705-724

[49] Robbie Sabel, Procedure at International Conferences, Cambridge University Press, 1997, p.307

[50] Barry Buzon, op.cit., p. 328

[51] Henry G. Schermers and Niels M. Blikker, op. cit., p. 779

exhaustion of efforts to reach consensus, the Conference could proceed to a vote. This approach of 'qualified consensus' exercised important psychological pressure on delegations toward mutual compromise, as B. Buzon comments; "It was necessary to have voting rules in order to both to give the weak some leverage and to guard against the tendency of consensus procedures to drift into paralysis because of a lack of pressure to come to decisions."[52] In fact, as the representative of Norway stated, "delegations taking part in substantive negotiations on matters of great national interest would be more inclined to seek mutual accommodation of interests if they were aware that the alternative to general agreement was a Conference decision by way of a vote." [53]

After UNCLOS III, consensus rule is widely applied to the adoption of international instruments, in particular soft-law instruments and binding treaties dealing with environmental issues. The 1992 UNCED was a typical forum where many international instruments were adopted by universal consensus. In parallel with this development, a variety of voting methods, such as simple majority, two-thirds majority, qualified majority, weighted majority, etc. continue to be employed in many international organizations, according to the characteristics of the organizations and the subjects.

The evolution of decision-making procedures in international society is closely linked with that of the concept of sovereignty. As long as the sovereign equality remains one of the fundamental principles of international law, it will be difficult to apply the majority voting at the global level to decision-making on matters sensitively related to the concept of sovereignty. No State is flexible in compromising its sovereignty. In most cases, the majority voting will be limited to decision-making on procedural and technical matters, except in international economic organizations.[54]

Another element of the evolution in decision-making procedures is the trend of imposition of procedural obligations to realize substantive norms. Jean de Munck underlines the growing importance of proceduralization of norms (*procéduralisation de*

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[52] Barry Buzon, op. cit. p. 331

[53] Official Records of the Third Law of the Sea Conference, Vol. I, p. 21, Summary Records of the 8th Meeting of the Plenary, para.11, UN Doc. A/CONF. 62 (1973)

[54] See Stephen Zamora, Voting in international economic organizations, *AJIL*, vol. 74 (1980)

la norme) in contemporary societies.[55] Procedural rationality may generate substantive rationality.[56] The phenomenon of proceduralization of norms can be found in situations where some substantive norms are widely welcomed but the concept of which remains so abstract and uncertain that they are not appropriate to guide concrete actions. Sustainable development is an example of such norms. Due to the uncertainty of its meaning and the lack of operational standards, it is difficult to apply the concept of sustainable development to real situations as a legal obligation. However, certain procedural rules may be required in the cause of sustainable development, as Patricia Birnie and Alan Boyle asserts; "...although international law may not require development to be sustainable, it does require development decisions to be the outcome of a process which promotes sustainable development."[57] Precautionary principle is also a norm difficult to apply directly to human actions. But it may lay procedural obligations, such as EIA, environmental monitoring, scientific research, in order to reduce uncertainty to an acceptable degree. The main rationale of procedural obligations set down in international environmental agreements is the fact that they serve as a vehicle for the resolution of conflicts between States proposing the conduct of activities and those likely to be affected.[58]

2. Convergence of expectations

2.1 Convergence of expectations in the making of the regime

2.1.1 Convergence of expectations through the universal participation

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[55] Jean de Munck , *Normes et procédures : les coordonnées d'un débat*, in Jean de Munck & Marie Verhoeven (ed.), *Les mutations du rapport à la norme, Un changement dans la modernité* ? De Boeck Université, 1997,

[56] See Niklas Luhmann, La légitimation par la procédure, traduit par Lukas K. Sosoe et Stéphane Bouchard de *Legitimation durch Verfahren*, Les Presses de l'Université Laval, 2001

[57] Patricia Birnie & Alan Boyle, International Law and the Environment, 2nd edition, chapter 3.

[58] See Phoebe N. Okowa, Procedural obligations in international environmental agreements, *BYIL*, 1996, pp. 275-336

The regime under the 1982 UNCLOS has been created through negotiation. From the beginning, the universal character of the regime was manifested by "the participation by more than 150 countries representing all regions of the world, all legal and political systems, all degrees of socio-economic development."[59] The number of States participating in UNCLOS III increased in the course of the Conference due to the proliferation of newborn States in the tide of decolonization which began in the 1960s and lasted until the 1970s. In the voting for the adoption of the Convention, 130 States voted in favour, 4 voted against, and 17 abstained.[60] This means that in its final session, the Conference was attended by 151 States, the quasi-totality of the independent States of the world of the time.[61]

Through this universal participation, every State was given the opportunity to propose and defend its ideas in the Conference. In theory, every State had the right to accept or refuse the positions of other States, although in reality its ability to do so was more or less limited according to its bargaining power in the Conference. In this way, the Convention was elaborated through negotiation, without being imposed either by any hegemonic powers or by any majority of States. The fact that the text of the Convention was elaborated through universal participation means that the Convention is a set of self-made and self-governing rules for every State. This is an important factor in fostering the convergence of expectations of States around the Convention. Only those States which have become independent after the conclusion of UNCLOS III find themselves faced with the Convention presented to them as a *fait accompli*, which is to be accepted *en bloc* or not.

2.1.2 Convergence of expectations through the package deal and consensus rule

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[59] See Division for Ocean Affairs and the Law of the Sea, United Nations, "20 Years of the United Nations Convention on the Law of the Sea 1982-2002"
www.un.org:Depts/los/convention_agreements/convention_20 years.htm

[60] UNCLOS III, Official Records, vol. XVI. Pp. 152-167

[61] In 1982, there were 157 members States of the United Nations. See United Nations, Growth in United Nations Membership 1945-2000, www.un.org/Overview/growth.htm
Besides these UN members, there were a few non-member States, such as the Republic of Korea, the Democratic People's Republic of Korea, Switzerland, etc. This means that there were some 160 States in the world at the moment of the adoption of the Convention.

Universal participation itself does not guarantee a successful fusion of the will of all States. If the will of the majority of States is imposed on the minority by means of voting, the will of all States cannot be merged. In the process of the elaboration of the 1982 UNCLOS, the convergence of the will of all participating States was reinforced by the practices of package deal and consensus rule. Except in the final session, no vote was taken. Compromises among the States in the making of a regime constitute a good foundation for the convergence of expectations of the States in the functioning of the regime. Through the process of package deal and consensus rule, diverging ideas were integrated into a consistent set of norms.

2.2 Convergence of expectations through the text of the 1982 UNCLOS

2.2.1 Uniform application of the 1982 UNCLOS

For the sake of uniform application, the 1982 UNCLOS stipulates; "No reservations or exceptions may be made to this Convention unless expressly permitted by other articles of this Convention."[62] And there is no article which permits expressly a reservation or exception.

In UNCLOS III, package deal in procedure engendered a package of provisions in substance. The provisions of the Convention are closely inter-related and form an integrated package.[63] Since this integrated package was made through a series of compromises, it is consistent that no reservations or exceptions are allowed. If a State makes a reservation[64] to any of the provisions contained in the integrated package, it means that the reserving State intends to exclude or modify the legal effect of certain provisions in their application to that State. If a reservation is made in a substantial matter, it is tantamount to a request of an additional concession from other participants. If such

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[62] Article 310 of the Convention

[63] Closing Statement by the President of Conference on the Law of the Sea, in Myron H. Nordquist & Choon-ho Park (ed.), Reports of the United Nations Delegation to the Third United Nations Conference on the Law of the Sea, The Law of the Sea Institute, University of Hawaii, Occasional Paper, No.33. p. 687

[64] Reservation is defined as "a unilateral statement, however phrased or named, made by a State, when signing, ratifying, accepting, approving or acceding to a treaty, whereby it purports to exclude or to modify the legal effect of certain provisions of the treaty in their application to that State." Vienna Convention on the Law of Treaties, Article 2 (1) (d)

reservations are allowed in a multilateral treaty, the application of the treaty will be complicated, since the relations among States Parties will be split into several categories; the relations between the reserving States and the objecting States, the relations between the reserving States and the States which have accepted the reservations, and the relations between the States which have made no reservations.[65] The objecting States may or not consider the reserving State as a party to the treaty. Even in the case where the reserving State is considered a party, the content of the set of applicable provisions will differ according to the different categories of relations among States parties. In such a case, the integrity and uniformity of the treaty would be undermined.

In the case of the 1982 UNCLOS, reservations or exceptions are prohibited to avoid these problems. In this sense, the President of UNCLOS III stated; "...the provisions of the Convention are closely inter-related and form an integral package. Thus it is not possible for a state to pick what it likes and to disregard what it does not like. It was also said that rights and obligations go hand in hand, and it is not permissible to claim rights under the Convention without being willing to shoulder the corresponding obligations."[66] Similar opinions have been expressed by many delegations, as stated in the Reports of the U. S. delegation; "Since the Convention is an overall 'package deal' reflecting different priorities of different States, to permit reservations would inevitably permit one State to eliminate the 'quid' of another State's 'quo'. Thus there was general agreement in the Conference that in principle reservations could not be permitted."[67]

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[65] The International Court of Justice provided a guideline on the applicability of a treaty to which a reservation is made: (1) If a reservation has been objected to by one or more parties, but not by others, the reserving state will be a party, provided the reservation is compatible with the object and purpose. (2) If a party objects to a reservation because it considers it incompatible with the object and purpose, that party may consider the reserving state as not a party. (3) If a party accepts a reservation as being compatible with the object and purpose, it may consider the reserving state as a party. *ICJ Reports*, 1951, p. 15

In a similar vein, the Vienna Convention on the Law of Treaties, (a) acceptance by another contracting State of a reservation constitutes the reserving State a party to the treaty in relation to that other State of or when the treaty is in force for those States; (b) an objection by another contracting State to a reservation does not preclude the entry into force of the treaty as between the objecting and reserving States unless a contrary intention is definitely expressed by the objecting State, (c) an act expressing a State's consent to be bound by the treaty and containing a reservation is effective as soon as at least one other contracting State has accepted the reservation. Vienna Convention on the Law of Treaties, Article 20 (4)

[66] Closing Statement by the President of Conference on the Law of the Sea. ibid. p. 687

[67] Myron H. Nordquist and Choon-ho Park, (ed.), Reports of the United States Delegation to the Third United Nations Conference on the Law of the Sea, op.cit., p.449

Luke T. Lee asserts; "the decision not to accept adherence with reservations also suggests a purpose to achieve a universal regime applicable to all states."[68]

In addition, consensus procedure is hardly compatible with reservations, as Eric Suy writes; "if a text is adopted by consensus, statements expressing fundamental reservations would be contrary to the very idea of the non-objection procedure which implies a positive attitude of the participants towards the substance."[69] In the case of the 1982 UNCLOS, the consensus procedure was systematically applied in the negotiating committees, except in the final session, where the Convention was adopted by vote. Therefore, the Convention cannot be said to have been adopted through a no-objection procedure. But in general, it can be said that the text of the Convention has been elaborated by consensus.

The mechanism for the uniform application of the Convention thus constructed may enhance the convergence of expectations, since every State has good reason to expect that the Convention will apply to all States Parties without exception.

2.2.2 Universalism embedded in the 1982 UNCLOS

2.2.2.1 Openness of the 1982 UNCLOS to all States

The universalism of the 1982 UNCLOS is embedded in the provisions stipulating the procedures of becoming parties thereto. The Convention is open to all States of the world without requiring any specific qualification.[70] Every State can become party to the Convention by depositing the instruments of ratification or accession. Every State is thus free to decide whether or not to become party to the Convention.[71] Furthermore, the

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[68] Luke T. Lee, The Law of the Sea Convention and Third States, *AJIL,* 1983, Vol. 77, p. 548

[69] Eric Suy, Consensus, in R. Bernhardt, Encyclopedia of Public International Law, 1992, vol. 1, p. 759

[70] Article 305, 1 (a)
This is a point which differentiates the regime under the Convention from the regime under the Charter of the United Nations, although both are universal regimes today. Differently from the Convention, the Charter lays down certain conditions for membership. For non-original members to become its members, they are required to satisfy the conditions laid down in Article 4, para.1 of the Charter and they should be accepted by the decision of the General Assembly upon the recommendation of the Security Council.

[71] In this aspect, the Convention differs from the Charter of the United Nations, under which non-original members can only apply to become members and it is the Organization which decides whether or not to accept the application. See Article 4 of the Charter.

Convention is also open to certain categories of entities which have not obtained the status of sovereign States[72] and to international organizations to the extent that these are entitled to represent their members as specified in Annex IX,[73] although the Convention differentiates these entities and international organizations from sovereign States Parties in its application.[74]

2.2.2.2 Provisions formulated for universal applicability

The universalism of the 1982 UNCLOS is manifested in many provisions which provide for the rights or obligations of "all States", "every State" or "States", whether they are States Parties or not. For example, under Article 116 "All States" have the right for their nationals to engage in fishing on the high seas... and under Article 3 "Every State" has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles...There are many other provisions addressed to "all States"[75] or "Every State."[76] Many provisions, in particular those which lay down obligations relating to the protection and preservation of the marine environment, are addressed to 'States', without any qualifying or limiting epithets. For example, Article 192 stipulates; "States have the obligation to protect and preserve the marine environment." In such provisions, "States" can be understood to mean "all States". [77]

At first glance, these provisions appear to be contradictory to the customary rule of *pacta tertiis nec nocent nec prosunt*,[78] which is incorporated in the 1969 Vienna

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[72] Article 305, 1 (b), (c), (d), (e)

[73] Article 305 1 (f), Annex IX For an international organization to become party to the Convention, it should obtain a status to represent all its members

[74] To these categories of parties, the Convention applies *mutates mutandis*. See Articles 1, 2 (2)

[75] There are provisions addressed to 'all States' in the preamble, Articles 17, 58, 79, 86, 87, 100, 108, 109, 112, 116, 117, 238, 256, 257, 260, 274.

[76] Provisions addressed to 'Every State' are contained in Articles 3, 90, 91, 94, 98, 99, 105, 113, 114, 115, 211

[77] The following Articles contain such provisions: Articles 58, 65, 79, 118, 119, 138, 192, 193, 194, 195, 196, 197, 199, 200, 201, 202, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 217, 219, 220, 222, 223, 225, 226, 227, 231, 232, 235, 237, 239, 242, 243, 244, 248, 249, 251, 252, 253, 254, 255, 263, 266, 267, 268, 269, 271, 272, 273, 274, 275, 276, 303

[78] The rule of *pacta tertiis* which dates back to Roman Law has been reaffirmed by Court practices. In Upper Silesia case the PCIJ stated: 3A treaty only creates law as between the States which are parties to it; in case of doubt no rights can be deduced from it in favor of third States." 1926 PCIJ ser. A, No. 7 at 29. In Free Zones of Upper Savoy and the District of Gex case, the PCIJ stated: "Article 435 of the Treaty of Versailles is not binding upon Switzerland, who is not a party to the Treaty, except to the extent to which

Convention on the Law of Treaties: "A treaty does not create either obligations or rights for a third State without its consent."[79] But, these provisions addressed to all States can be regarded as justifiable exceptions to the rule of *pacta tertiis*.

First, treaty provisions resulting from the codification of pre-existing rules of customary international law have binding force on non-parties to the treaty. As the International Law Commission stated; "A principle or rule of customary international law may be embodied in a bipartite or multipartite agreement so as to have, within the stated limits, conventional force for the States parties to the agreement so long as the agreement is in force; yet it would continue to be binding as a principle or rule of customary international law for other States",[80] such treaty provisions may form a double regime, conventional for parties to the treaty, and customary to non-parties.[81] In fact, many of the provisions of the Convention addressed to 'all States', 'every State' or 'States' are the results of the codification of the pre-existing customary international rules.

Second, the *stipulation pour autrui* can be another exception to the principle of *pacta tertiis*.[82] The doctrine of *stipulation pour autrui,* developed through court and State practices,[83] is incorporated into the 1969 Vienna Convention, which provides; "A right arises for a third State from a provision of a treaty if the parties to the treaty intend the

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that country accepted it." 1932 PCIJ series. A/B, No. 46 at 141. In North Sea Continental Shelf case, the ICJ held that "...not having become a party to the convention it could not claim any rights under it until the professed willingness and acceptance had been manifested in the prescribed form."

[79] Article 34

[80] ILC Report 1950, Yearbook International Law Commission, 364, 368.

[81] The term "double regime" means that a treaty is governed by the Convention for one party or parties, and by the rules of customary law for the other party or parties. See E. W. Vierdag, The Law Governing Treaty Relations between Parties to the Vienna Convention on the Law of Treaties and States not Party to the Convention, *AJIL*, 1982, Vol. 76

[82] In the Free Zones of Upper Savoy and the District of Gex case, the PCIJ stated: "It cannot be lightly presumed that stipulations favourable to a third State have been adopted with the object of creating an actual right in its favour. There is however nothing to prevent the will of sovereign States from having this object and this effect. The question of the existence of a right acquired under an instrument drawn between other states is therefore one to be decided in each particular case: it must be ascertained whether the states which have stipulated in favour of a third state meant to create for that state an actual right which the latter has accepted as such." 1932 PCIJ series A/B, No. 46 pp.147-48. The *stipulation pour autrui* appears most often in the regime of passage of international straits: Article 1 of the 1888 Constantinople Convention on the Suez Canal, stipulating "the Suez Maritime Canal shall always be free and open in time of war as in time of peace, to every vessel of commerce or of war without distinction of flag"; In the Wimbledon case, the PCIJ held that "the effect of article 380 of the Treaty of Versailles 1919 maintaining that the Kiel Canal was to be open to all the ships of all countries at peace with Germany; intended to provide under treaty guarantee easier access to the Baltic for the benefit of all nations of the world." 1923 PCIJ Series A, no. 1, p. 99. Under the Law of the Sea Convention also, the provisions on innocent passage and transit passage are formulated in such a way as to be applicable to all ships of all States.

provision to accord that right either to the third State, or to a group of States to which it belongs, or to all States, and the third State assents thereto. Its assent shall be presumed so long as the contrary is not indicated, unless the treaty otherwise provides."[84] The Convention contains many such provisions that stipulate rights intended to be enjoyed by all States.[85]

The 1982 UNCLOS contains also many obligations addressed to all States, including non-parties. The 1969 Vienna Convention on the Law of Treaties lays down much more stringent conditions for the establishment of obligations of non-parties than those for the stipulation of rights of non-parties: "An obligation arises for a third State from a provision of a treaty if the parties to the treaty intend the provision to be the means of establishing the obligation and the third State expressly accepts that obligation in writing." In the case of the 1982 UNCLOS, there are few cases where the States have expressly accepted the obligation laid down in the Convention without becoming parties.[86]

2.2.3 Stringent conditions for amendment

Any amendment to the 1982 UNCLOS can be adopted by consensus, with the possibility of voting as the last resort.[87] On the basis of this provision, each State Party may expect

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[83] See Edouardo Jiménez de Aréchaga, Treaty Stipulations in favor of third States, *AJIL*, vol. 50 (1956)

[84] Article 36, para.1

[85] For example, Article 3 stipulates: "Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles…", Article 17 stipulates: "…ships of all States, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.", and so on. The United States, the USSR, and many other States, have proclaimed the 200 mile-EEZ without becoming, or before becoming, party to the Convention on the ground that the EEZ regime had been established as customary international law.

[86] The United States has expressed its intention to accept and act in accordance with the balance of interests as reflected in the Convention. In 1983, the President of the United States, which was not party to the Convention, made a statement, in writing, "First, the United States is prepared to accept and act in accordance with the balance of interests relating to traditional uses of the oceans – such as navigation and overflight. In this respect, the United States will recognize the rights of other states in the waters off their coasts, as reflected in the Convention, so long as the rights and freedoms of the United States and others under international law are recognized by such coastal states. Second, the United States will exercise and assert its navigation and overflight rights and freedoms on a worldwide basis in a manner that is consistent with the balance of interests reflected in the Convention. The United States will not, however, acquiesce in unilateral acts of other states designed to restrict the rights and freedoms of the international community in navigation and overflight and other related high seas uses." Statement by the president, March 10, 1983, 19 Weekly Comp. Pres. Doc. 383

[87] Articles 312, 313

that the integrity of the Convention will be maintained until all, or virtually all, States Parties agree to amend it. These stringent conditions for amendments constitute a safeguard for the integrity, stability and continuity of the Convention. Such an assurance may foster the convergence of expectations.

2.3 Convergence of expectations through State practices

2.3.1 World-wide adherence

The most important act of a State in its relations to the 1982 UNCLOS is to become a party. By becoming a party to the Convention, a State consents to be bound by the entire set of norms laid down in the Convention. The Convention was enthusiastically welcomed by international society, as the President of the Conference stated; "Never in the annals of international law has a Convention been signed by 119 countries on the very first day on which it is opened for signature."[88] This initial enthusiasm was bound to cool down soon, as manifested by the delay of its entry into force for a dozen of years. This was the proof that the 'integrated package' had not been really integrated with regard to the deep sea-bed regime. A new impetus was given to the Convention in 1994 by the conclusion of the Implementing Agreement, through which a supplementary compromise was made by incorporating the claims of the industrial States around the deep sea-bed regime. From then on, the number of States ratifying or acceding to the Convention has increased notably. After having entered into force in 1994, the Convention has now an absolute majority of the States of the world as its parties.[89] Considering the fact that the overwhelming majority of the States of the world are parties to the Convention and few States remain persistent-objectors, the Convention can be considered to have acquired a quasi-universal acceptance. Such a world-wide adherence constitutes a good foundation for the convergence of expectations among the States of the world. Since the absolute

[88] Closing Statement by the President of Conference on the Law of the Sea, in Myron H. Nordquist & Choon-ho Park (ed.), Reports of the United Nations Delegation to the Third United Nations Conference on the Law of the Seas, op.cit., No.33. p. 686

[89] As at 9 December 2002, the number of Parties to the Convention is 142. See Status of the United Nations Convention on the Law of the Sea and related Agreements as at 9 December 2002, Division for Ocean Affairs and the Law of the Sea, www.un.org/Depts/los/los94st.htm

majority of States of the world have given consent to be bound by the Convention, each State has good reason to expect that other States intend to act in accordance with the Convention. Such expectations may converge in a global scale.[90]

2.3.2 Political declarations on the 1982 UNCLOS in universal forums

The convergence of expectations around the 1982 UNCLOS has also been manifested in many political declarations adopted in global forums, in particular the General Assembly of the United Nations. For example, from 1991 on, the General Assembly has adopted each year resolutions or decisions under the title of "Oceans and the Law of the Sea". Some of them have dealt with specific issues, such as large-scale pelagic drift-net fishing,[91] straddling fish stocks and highly migratory fish stocks,[92] Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982,[93] the relationship between the United Nations and the International Seabed Authority,[94]the cooperation and relationship between the United Nations and the International Tribunal for the Law of the Sea,[95] results of the review by the Commission on Sustainable Development,[96] fisheries by-catch and discards and their impact on the sustainable use of the world's living resources,[97]unauthorized fishing in zones of national jurisdiction and its impact on the living marine resources of the world's oceans and seas.[98]Others are reiterations of general opinions of international society on the law of the sea, such as "the fundamental importance of the United Nations Convention on the Law of the Sea for the maintenance and strengthening of international peace and security",

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[90] See Bernard H. Oxman, The Rule of Law and the United Nations Convention on the Law of the Sea, *EJIL*, Vol. 7, 1996, N°3 "Global ratification would unite the nations of the world in the most comprehensive and far-reaching treaty for protection of the global environment yet achieved, establishing a clear and inexorable link between the rule of law in international affairs and the preoccupation of people everywhere to ensure that their children inherit a safe and healthy home."

[91] A/RES/46/215 (1991), Decision: 48/445 (1993), Decision: 47/443 (1992), Decision: 48/445 (1993), Decision: 49/436 (1994), A/RES/50/25 (1995), A/RES/51/36 (1996), A/RES/52/29 (1997), A/RES/53/33 (1998), A/RES/55/8 (2000), A/RES/57/142 (2002)

[92] A/RES/47/192 (1992), A/RES/48/194 (1993), A/RES/49/121 (1994), A/RES/50/24 (1995), A/RES/51/35 (1996), A/RES/52/28 (1997), A/RES/54/32 (1999), A/RES/56/13 (2001), A/RES/57/143

[93] A/RES/48/263 (1994)

[94] A/RES/52/27 (1997)

[95] A/RES/52/251 (1998)

[96] A/RES/54/33 (1999)

[97] A/RES/49/118(1994)

"the universal character of the United Nations Convention on the Law of the Sea", "the importance of the effective implementation of the Convention", "the strategic importance of the Convention as a framework for national, regional and global action in the marine sector".[99] These resolutions and decisions, as manifestations of converging expectations, have a particular importance, considering that they are adopted by consensus or by virtual unanimity[100]in the universal forum in which not only Parties to the 1982 UNCLOS but also non-Parties have participated.

Converging expectations of the international society around the 1982 UNCLOS have been expressed in other universal forums such as the 1992 UNCED, as evidenced in the Agenda 21, Chapter 17, in which the 1982 UNCLOS was reaffirmed as the legal basis for action programmes in all fields of the Protection of the Oceans.[101]

Such a repetition of political declarations of a global character may consolidate the legitimacy of the Convention as the basic legal framework, and thereby form legitimate expectations. Such legitimate expectations reinforce global convergence of expectations that the Convention will function as the basic legal framework in the issue-area of maritime affairs.

2.3.3 References to the 1982 UNCLOS made by other treaties

Many regional or global treaties refer to the 1982 UNCLOS and regard it more or less explicitly as the basic legal framework governing international relations in maritime issues.

Even before the Convention was still in the process of negotiation, many treaties expressed the beforehand confirmation of their consistency with the Convention. For example, the 1976 Convention for the Protection of the Mediterranean Sea against Pollution declared; "Nothing in this Convention shall prejudice the codification and development of the law of the sea by the United Nations Conference on the Law of the

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[98] A/RES/49/116 (1994)
[99] UNGA resolutions: A/RES/49/28(1994), A/RES/50/23(1995), A/RES/51/34(1996), A/RES/52/26(1997), A/RES/53/32(1998), A/RES/54/31, A/RES/55/7(2000), A/RES/56/12(2001), A/RES/57/141 (2002)
[100] Some resolutions, such as A/RES/52/26, A/RES/53/32, A/RES/54/31, A/RES/56/12, A/RES/56/13, are adopted by vote, in which only one or two States voted against.
[101] Agenda 21, Chapter 17, para 17.22, 17.49, 17.77, 17.78, 17.87, 17.99

Sea convened pursuant to resolution 2750 C (XXV) of the General Assembly of the United Nations."[102] This example was followed in identical terms by the Protocol Concerning Mediterranean Specially Protected Area adopted in 1982 and the 1981 Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region.[103] The 1978 Protocol Amending the International Convention for the High Seas Fisheries of the North Pacific Ocean expressed its concern on consistency with the Convention, by stipulating; "This Convention shall be subject to review by the Contracting Parties upon the conclusion of a multilateral treaty resulting from the Third United Nations Conference on the Law of the Sea."[104]The 1982 Convention for the Conservation of Salmon in the North Atlantic Ocean declared that its parties should "take into account international law, the provisions on anadromous stocks of fish in the Draft Convention of the Third United Nations Conference on the Law of the Sea and other developments in international fora relating to anadromous stocks."[105]

After the adoption of the 1982 UNCLOS, many regional and global instruments have made reference to the Convention in different terms. The Parties to the 1990 Agreement on Cooperation in Research, Conservation, and Management of marine Mammals in the North Atlantic expressed "their common concerns for the rational management, conservation and optimum utilization of the living resources of the sea in accordance with generally accepted principles of international law as reflected in the 1982 United Nations Convention on the Law of the Sea..."[106] The 1992 Convention for the Protection of the Marine Environment of the North East Atlantic recalled "the relevant provisions of customary international law reflected in Part XII of the United Nations Law of the Sea Convention and, in particular, Article 197 on global and regional cooperation for the protection and preservation of the marine environment."[107] The 1994

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[102] Convention for the Protection of the Mediterranean Sea against Pollution, open for signature in 1976, entered into force in 1978, Article 3, para.2

[103] Convention for co-operation in the protection and development of the marine and coastal environment of the West and Central African Region, Article 3, para.3

[104] Protocol Amending The International Convention for the High Seas Fisheries of the North Pacific Ocean (1978), Article XII, para.2

[105] Preamble

[106] Agreement on Cooperation in Research, Conservation and Management of Marine Mammals in the North Atlantic adopted in 1990, Preamble

[107] The 1992 Convention for the Protection of the Marine Environment of the North East Atlantic, Preamble

Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas recognized that "all States have the right for their nationals to engage in fishing on the high seas, subject to the relevant rules of international law, as reflected in the United Nations Convention on the Law of the Sea" and "under international law as reflected in the United Nations Convention on the Law of the Sea, all States have the duty to take, or to cooperate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas."[108]

Many other international instruments have expressed their consistency with the Convention in more or less concrete terms, such as "being aware of the provisions of the United Nations Convention",[109] "mindful of the relevant rules of international law, including the provisions of the United Nations Convention on the Law of the Sea",[110] "noting the adoption of the United Nations Convention on the law of the Sea",[111] "in accordance with international law as expressed in the United Nations Convention on the Law of the Sea",[112] "having regard to the relevant provisions of the 1982 United Nations Convention on the Law of the Sea",[113] "defines Relevant provisions of international law as those recognized in the United Nations Convention on the Law of the Sea and other international instruments currently in force,"[114] "principles drawn from relevant existing agreements such as the United Nations Convention on the Law of the Sea (Part XII)."[115]

In different terms, but in common conviction, these treaties recognize the 1982 UNCLOS as the basic legal basis on which they are adopted or with which they are

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[108] The 1994 FAO Agreement to promote compliance with international conservation and management measures by fishing vessels on the high seas, Preamble

[109] The 1990 Protocol to the Kuwait Regional Convention for the Protection of the Marine Environment Against Pollution from Land-Based Sources, Preamble

[110] The 1989 Convention for the prohibition of fishing with long driftnets in the South Pacific, Preamble

[111] The 1994 Convention on the Conservation and Management of Pollock Resources Central Bering Sea and Convention for the Conservation of Southern Bluefin Tuna "note the adoption of the United Nations Convention on the Law of the Sea in 1982", in their Preambles.

[112] The 1992 Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region, Preamble

[113] The 1999 Agreement Between The Government of Iceland, the Government of Norway and the Government of the Russia Federation Concerning Certain Aspects of Cooperation in the Area of Fisheries, Preamble

[114] The 2000 Framework agreement for the conservation of living marine resources on the high seas of the South Pacific (The Galapagos Agreement), Article 1, para.1.14

[115] Montreal guidelines for the protection of the marine environment against pollution from land-based sources, Introduction.

consistent. Such attitudes show that expectations of international society on the issues relating to the law of the sea are converging around the Convention.

2.3.4 Expectations converged in the Meetings of the States Parties

The 1982 UNCLOS provides that the Secretary-General of the United Nations "shall convene necessary meetings of States Parties in accordance with this Convention".[116] The first Meeting of States Parties (SPLOS) was convened in New York on 21 and 22 November 1994, immediately following the entry into force of the Convention. Since then, annual and *ad hoc* meetings of SPLOS have been held.

SPLOS may serve as a forum to facilitate the convergence of expectations among States Parties around the Convention. "The Meetings have dealt primarily with elections of the members of the International Tribunal for the Law of the Sea and of the members of the Commission on the Limits of the Continental Shelf as well as with budgetary and administrative matters of the Tribunal."[117]Orderly functioning of such institutions may contribute to the reinforcement of the conviction of States Parties that the Convention is successfully governing international relations in the given issue-area. Agenda items of SPLOS are not confined to matters concerning the functioning of these institutions. A variety of opinions can be exchanged on a variety of issues relating to the Convention.[118] Such opinions may converge or diverge. States Parties may consolidate convergence of opinions or attenuate divergence of opinions through debates in the meetings.

2.3.5 Incorporation of the 1982 UNCLOS in domestic legislation

When becoming a party to the 1982 UNCLOS, each State takes necessary measures according to its internal procedures so as to apply the Convention to its nationals. Many

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[116] Article 319, para.2 (e)

[117] United Nations, Division for Ocean Affairs and the Law of the Sea, Meetings of States Parties to the 1982 United Nations Convention on the Law of the Sea

[118] See United Nations, Division for Ocean Affairs and the Law of the Sea, Press Release SEA/1587, 15 May 1998; "The meeting is also scheduled to discuss the future role of the States parties in the review of issues related to oceans and the law of the sea. At present, the only global forum where those issues are addressed in a comprehensive manner is the General Assembly of the United Nations. The States parties, at

States incorporate the rules and standards of the Convention into their national legislation, explicitly referring to the Convention or implicitly complying with the relevant rules and standards laid down in the Convention.[119] For example, after the entry into force of the Convention, sea areas under national jurisdiction are standardized. Before the entry into force of the Convention, the practices of States in determining the breadth of their territorial sea were divergent. Today, the breadth of the territorial sea is virtually standardized as 12 miles. Before the entry into force of the Convention, there were divergent practices of the EEZ regime. Today, many States have proclaimed EEZ in accordance with the provisions of the Convention.[120] The Convention requires States to adopt laws and regulations or take other measures to prevent, reduce and control pollution of the marine environment from different sources.[121] In adopting such national laws and regulations, States are required to "take into account internationally agreed rules, standards and recommended practices and procedures",[122] to ensure that such laws, regulations and measures "shall be no less effective than international rules, standards and recommended practices and procedures",[123] "shall be no less effective than the global rules and standards",[124] or "shall have at least the same effect as that of generally accepted international rules and standards".[125] By virtue of these provisions, each State may expect other States to adopt laws, regulations and measures, which will be at least as effective as international standards.

2.4 Convergence of expectations through the dispute settlement system

2.4.1 Possibility of divergent interpretations

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their last meeting, expressed the desire to maintain this issue on their agenda, thus providing them with the opportunity to undertake a regular review of matters relating to oceans and the law of the sea."

[119] See Jonas Ebbesson, Compatibility of International and National Environmental Law, Kluwer Law International, 1996

[120] For example, see Exclusive Economic Zone Act of the Republic of Korea, 1996, Law on the Exclusive Economic Zone and Continental Shelf of Japan, 1996

[121] Articles 207 to 212

[122] Articles 207, 212

[123] Articles 208, 209

[124] Article 210

[125] Article 211

States Parties to a treaty behave in accordance with the treaty by internalising principles and rules of the treaty. Principles and rules of the treaty can be internalised into the mindset of the States Parties by being interpreted, explicitly or implicitly. Therefore, for a treaty to orient States Parties to behave in the direction envisioned by the treaty, its text has to be interpreted by States Parties in a convergent way. Thus, the convergence of interpretations of the treaty is a prerequisite to the convergence of expectations around the treaty. If not, different members may deduce different rules and standards from the same treaty. Diverging interpretations may result in diverging applications, which in turn may result in disputes.

However, it is difficult to expect all States Parties to interpret the treaty in a uniform way, since the formulation of the treaty texts is not always unequivocal, and each State tends to interpret the text in the light of its national interest. In most cases, the problems arising from diverging interpretations remain dormant until the conflicting interpretations result in conflicting actions in reality.

In some cases, diverging interpretations are revealed when States Parties make interpretive declarations. The 1982 UNCLOS, while prohibiting reservations and exceptions, does not preclude States Parties from making declarations and statements with a view, *inter alia*, to the harmonization of its laws and regulations with the provisions of the Convention, provided that such declarations or statements do not purport to exclude or modify the legal effect of the provisions of the Convention in their application.[126]To date, some fifty States have made such declarations and statements.[127] Many of them are reiterations of the principles set out in the Convention, notifications of their decision on the choice of forums for dispute settlement, or reconfirmations of their position on particular regimes of international straits, which seem generally compatible with the Convention. However, some declarations reveal diverging or conflicting interpretations among States Parties. In particular, a diametric contrast is manifested between the positions of the two groups of States on the issues relating to the innocent passage in territorial seas, military exercises in EEZ of a foreign State and the principles for the delimitation of EEZ and the continental shelf.

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[126] Article 310

[127] United Nations, Division for Ocean Affairs and the law of the Sea, Declarations and statements, date of most recent addition: 06 February 2002

On the issue of innocent passage, some States, such as Algeria, China, Croatia, Egypt, Malaysia, Malta, Oman, Saudi Arabia, Yemen, Yugoslavia, have declared that the Convention does not prohibit the coastal State from requiring prior notification or authorization for the innocent passage of warships through its territorial seas.[128] For some others, such as Germany, Italy, the Netherlands, the United Kingdom, the Convention does not authorize the coastal State to require prior notification or authorization for the innocent passage through its territorial seas.[129]

On the issue of military exercises or manoeuvres in EEZ, some States, such as Bangladesh, Brazil, India, Malaysia, Pakistan, Uruguay, have declared that the Convention does not authorize a State to carry out military exercises or manoeuvres in EEZ of other States, whereas some others, such as Germany, Italy, the Netherlands, the United Kingdom, have claimed that the Convention does not prohibit a State from carrying out military exercises or manoeuvres in EEZ of other States.[130]

The issue of the delimitation of EEZ and the continental shelf is also a cause of divergent interpretations. The Convention stipulates that the delimitation of EEZ and the continental shelf shall be effected by agreement on the basis of international law, without specifying whether the median/equidistant line or the equitable principle shall be applied.[131] Some States have given unilateral interpretations to Articles 74 and 83 concerning the delimitation of EEZ and the continental shelf. For example, Malaysia, Malta, and Yemen have declared that the delimitation of EEZ and the continental shelf shall be done by the median line, whereas for China such delimitation shall be done on the basis of international law and in accordance with the principle of equitability.

These diverging interpretations may not immediately entail disputes, but they remain potential causes of disputes.[132] A dispute settlement system can contribute to the convergence of expectations by settling the problems which arise from divergent interpretations.

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[128] Idem.
[129] Idem.
[130] Idem.
[131] Articles 74, 83
[132] For example, when a State (like Germany) which interprets that the Convention does not authorize the coastal State to prohibit military exercises or manoeuvres by other States in the EEZ conducts a military exercise in the EEZ of a State (like Brazil) which interprets that the Convention does not authorize such military exercises in the EEZ of other States, the divergence of interpretations may result in a dispute.

2.4.2 Convergence of interpretations through the dispute settlement system

The role of the dispute settlement system in settling disputes concerning the interpretation or application of a treaty is passive but decisive. An international court can provide only *ex post* interpretations in relation to the disputes brought to the court or in answer to a request by an international organization.

Though piecemeal by nature, judicial interpretations made by international courts endowed with authority can be a safeguard against diverging interpretations. Each State may expect that the dispute settlement system may provide authoritative interpretations when necessary, even though States Parties have interpreted divergently. In addition, principles and rules articulated or implied in court decisions form jurisprudence, which can shed light on subsequent interpretations by State or private actors, and thereby contribute to the convergence of interpretations. By enhancing the convergence of interpretations, the dispute settlement system may foster the convergence of expectations among regime members. If all States have confidence in the dispute settlement system, each State will have the conviction that it can rely on the judicial settlement as a final resort for correct interpretations, and thereby have the expectation that the same rules will apply to all States Parties. Such a conviction may foster intersubjective expectations.[133]

The Convention provides a variety of dispute settlement procedures which may foster the convergence of expectations by assuring converging interpretations.

2.5 Evolution of the mechanisms of convergence of expectations

UNCLOS III was an important milestone in the history of making international treaties in that it was the first conference inspired by universalism, as manifested in the universal participation and the process of moulding consensus through the concept of package deal.

UNCLOS III realized a new achievement in the process of progressive development of international law and the codification which international society has pursued since the end of the Second World War under the auspices of the United

[133] See supra. P. 69, a paragraph quoted from John Rawls.

Nations.[134]In accordance with Resolution 174 (II) of the General Assembly of the United Nations, the International Law Commission was created for the promotion of the progressive development of international law and its codification.[135] On the basis of the contribution made by ILC, many international treaties have been adopted as the result of the codification of customary international rules or the progressive development of international law. The process of UNCLOS III was quite different from other processes of the codification of international law. Before UNCLOS III, drafts of the treaties codifying customary international law had been prepared by the legal experts of ILC before they were presented to the diplomatic conference held under the auspices of the United Nations, as in the cases of the 1958 Geneva Conventions on the Law of the Sea, the 1961 Vienna Convention on Diplomatic Relations, the 1963 Vienna Convention on Consular Relations and the 1969 Vienna Convention on the Law of Treaties, among others.[136] In the case of the 1982 UNCLOS, the diplomatic conference was involved directly in drafting the text without relying on the draft proposal elaborated by legal experts. This approach was inevitable because there were too many issues at stake around which the interests and positions of States were divergent or conflicting. In such a situation political considerations were indispensable in parallel with legal reasoning. On the other hand, the rules of customary international law in the law of the sea had already been elaborated comprehensively, if not completely, in the texts of the 1958 Geneva Conventions on the law of the sea. UNCLOS III could start on the basis of the texts of the 1958 Geneva Conventions, which would be partly incorporated into the new Convention and partly modified or rejected.

How then can the codification of the rules of customary international law contribute to a convergence of expectations around the rules? The merits of codified rules can be understood in the light of cognitive rationality and a stability of rules. Common perception and shared understanding of the rules constitute the starting point for common

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[134] The idea of codification of international law was already proposed in the last quarter of the eighteenth century by Jeremy Bentham. In 1924, the League of Nations adopted the Resolution for the Committee of Experts for the Progressive Codification of International Law. This Committee had few results. See www.un.org/law/ilc/index.htm

[135] Besides these organs established by the intergovernmental organizations, the International Law Association founded in 1873, and the Institute of International Law founded in 1873, and some other private law associations established at the national or regional level contributed to the progress of international law and its codification.

expectations. In this sense, codification of customary rules may facilitate a common cognition thereof and thereby contribute to the convergence of expectations. In many cases, customary international rules have been too difficult to identify without the intervention of international courts. Henkin asserts; "It was never easy to prove customary law among 'civilized nations'; it will be far more difficult to show that some new practice is generally accepted, or even acquiesced in, among 150-odd states", and "As concerns customary law in particular, there is often uncertainty and little confidence as to what it is."[137] Once codified, rules can be more easily recognizable. Interpretation of a treaty may differ from State to State, but at least they have the same text. By enhancing common cognition of the rules, codification of customary international law may reinforce convergence of expectations.

In general, codified rules are more stable than customary rules. Treaties evolve also in many ways.[138] But they are subject to more constraints than customary rules are, because they are crystallized in written texts.

Another important element which contributes to enhancing convergence of expectations of international society around the 1982 UNCLOS is the continued expression of the animus of international society, as shown in different universal political declarations which affirm and reaffirm the importance and significance of the Convention in the law of the sea.[139] Such political declarations, having no binding force, might be considered as rhetoric, but such rhetoric is not meaningless, as Henkin asserts; "We may be cynical about the rhetoric of nations and their proclamations of respect for law...Rhetoric, moreover, is often employed in the hope that it will be believed; this can only be if, to an extent at least, it is consistent with the nation's behaviour."[140] The rituals of international society reiterating political declarations may consolidate the Weberian concept of "belief in the existence of a legitimate order".[141]

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[136] See www.un.org/law/ilc/index.htm
[137] Louis Henkin, How nations behave? Columbia University Press, Second edition, 1979, p.123 and 23
[138] See supra. Chapter 3
[139] See supra. paragraph 3.2
[140] Louis Henkin, op. cit. p. 45

3. Compliance system

3.1 Concepts

3.1.1 Compliance, implementation and governance

Converging expectations and compliance are distinct but closely linked concepts. They are distinct in that expectation is a mental antecedent of an action, while compliance is an action.[142] They are closely linked because convergence of expectations around a set of norms is an inter-subjectively perceived *animus obligandi*, which creates a favourable condition to induce actors to comply with the norms. As such, in independent individual behaviour, antecedence of expectation to action is evident. But in interdependent actions, where the best choice for each player depends on what he expects the other to do, knowing that the other is similarly guided,[143] there is reciprocal feedback between expectation and action. When player *A* expects what player *B* will do, *A*'s expectation relies on his information on *B*'s action, and vice versa.[144] Such proposition holds true in bilateral games, but is particularly valid in repeated games among multiple players, as those in multilateral regimes.[145] This is also relevant to the cooperation between developed States and developing States in fulfilling their common but differentiated responsibilities, as Patricia Birnie and Alan Boyle assert; "if they (developed States) want

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[141] Max Weber, The Theory of Social and Economic Organization, translated by A. M. Henderson and Talcott Parsons, The Free Press, 1964, p. 124 See also supra. Chapter 2, para.2.5

[142] On the concept of mental antecedent, see Bede Rundle, Mind in Action, Clarendon Press Oxford, 1997, Chapter I Mental Antecedents of Action; "Indeed, for the functionalist, the very concept of a mental state is nothing other than the concept of a state which is apt for the production of certain sorts of behaviour."

[143] See Thomas C. Schelling, The Strategy of Conflict, Harvard University Press, 1960, fifteenth printing, 1995, in particular Chapter 4 Toward a theory of interdependent decision.

[144] See Glenn H. Snyder & Paul Diesing, Conflict among Nations, Princeton University Press, 1977.

[145] See Jürgen Habermas, Between Facts and Norms, translated by William Rehg from Faktizitaät und Geltung, Polity Press, 1997, pp.17-18. "Every social interaction that comes about without the exercise of manifest violence can be understood as solution to the problem of how the action plans of several actors can be coordinated with each other in such a way that one party's actions "link up" with those of others. An ongoing connection of this sort reduces the possibilities of clashes among the doubly contingent decisions of participants to the point where intentions and actions can form more or less conflict-free networks, thus allowing behavior patterns and social order in general to emerge."

developing States to participate actively in securing the goals of each agreement they must honour the expectation that the necessary resources will be provided.[146]

In such a way, convergence of expectations and compliance are inseparably connected. Therefore, it would be better to extend the definition of regimes by adding the concept of compliance:

> "An international regime is *an international institution founded on* a set of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge *and in compliance with which actors behave* in a given area of international relations."[147]

In its narrow concept, compliance can be defined as "an actor's behaviour that conforms to a treaty's explicit rules." [148] For regime theorists, compliance is more broadly understood as the behaviour which conforms not only to specific treaty provisions, but also to a treaty's broad principles, implicit norms, informal agreements.[149] This broader concept of compliance is more meaningful in the issue-areas of environmental protection where many regimes have been built on the basis of non-binding instruments.[150]

The choice between compliance and non-compliance of a State depends on its *animus* and capacity.[151] Generally, if not always, compliance entails costs, such as financial and technological resources, administrative costs, manpower, political energy, etc. On the other hand, a State may expect various advantages from compliance, such as national reputation and shared benefits from the maintenance of world order and the rational management of common goods, etc. In making a choice, each State will evaluate

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[146] Patricia Birnie & Alan Boyle, International Law and the Environment, Oxford University Press, second edition, 2002, p.103

[147] Italic letters are added to the definition of regimes proposed by Stephen Krasner. See supra. p.60 & p.75

[148] Ronald B. Michel, Compliance Theory: an Overview, in James Cameron, Jacob Werksman & Peter Roderick (ed.), Improving Compliance with International Environmental Law, Earthscan, 1996, p. 5
See also R. Fisher, Improving Compliance with International Law, University Press of Virginia, 1981, p. 20

[149] See Chayes A. and Chayes A. On Compliance, *IO*, vol. 47, 2, Spring 1993, Charles Lipson, Why are some international agreements informal ? *IO*, 45, 4, Autumn 1991

[150] On the subject of compliance with non-binding norms, see Dinah Shelton, Commitment and Compliance, Oxford University Press, 1999, Part II Perspectives on compliance with non-binding norms.

[151] See Peter M. Haas, Compliance Theories Choosing to Comply: Theorizing from International Relations and Comparative Politics, in Dinah Shelton (ed.), Commitment and Compliance, op.cit, 1999

these expected costs and benefits in the light of its motivations. [152] Compliance theories propose a variety of ways of classifying the sources of compliance: some classify them into 'compliance as independent self-interest' and 'compliance as interdependent self-interest',[153] others identify domestic sources of compliance and international sources,[154] and so on. Whatever their criteria, these taxonomies can provide only partial explanations in that they focus on the *animus* of States, without paying sufficient attention to the other aspect of behaviour; the capacity to comply. Even though a State is determined to comply with a given international norm, that *animus* is not enough to lead the State to compliance, unless it is backed by real capacity. In reality, wilful violation is the exception, not the rule, because most States enter into agreements intending to comply.[155] The most common factors that restrain States from complying are financial and technological resources as well as administrative capacity. That is why international environmental regimes are paying more and more attention to financial mechanisms and capacity-building.

Non-compliance[156] also entails costs and advantages. The principal cost is usually individual responses of an affected State such as protest and varying degrees of retaliation, or communal responses such as social opprobrium and international sanctions,

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[152] See Max Gounelle, La motivation des actes juridiques en droit international public, Editions A. Pédone, 1979. For Gounelle, « Tout acte juridique, et donc tout acte juridique international, a nécessairement une motivation matérielle. » p. 28
See also Louis Henkin, How Nations behave? Columbia University Press, Second edition, 1979

[153] Ronald B. Mitchell, Compliance Theory: an Overview, pp. 6-11

[154] Peter M. Haas, Compliance Theories, in Dinah Shelton, Commitment and Compliance, Oxford University Press, 1999 As domestic sources, Haas presents technical and political factors which intervene in the choice to comply, and as international sources, he presents realist views which argue that compliance depends on threats of sanctions for non-compliance levied by a powerful state, and functional institutionalist views which draw attention to the fact that a State's choice also can be influenced by international institutions.

[155] See Antonia Handler Chayes, Abraham Chayes and Ronald B. Mitchell, Active Compliance Management in Environmental Treaties, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995,

[156] For the concept of non-compliance in comparison with breach, see Shabtai Rosenne, Developments in the Law of Treaties 1945-1986, 1989, p. 94 For Rosenne, while "breach" would signify an ascertained violation of a binding treaty obligation and give rise to international responsibility, non-compliance would be a political matter: whether it exists and what countermeasures (short of suspension of rights) might seem appropriate would be determined through a treaty-specific political process.
See also Martti Koskenniemi, Breach of Treaty or Non-compliance? Reflections on the enforcement of the Montreal Protocol, *YIEL*, 1992, vol. 31
For Patricia Birnie and Alan Boyle, "when used in a treaty context it is not entirely clear that 'non-compliance differs in any material sense from 'breach' or 'non-application', in that breach of a treaty is a

etc.[157] The most common type of benefits from non-compliance in the field of environmental protection is the advantage of free-riding and externalization of costs. In many cases, benefits from non-compliance are more tangible and immediate, while the costs of non-compliance are relatively more abstract and remote. Therefore, the shorter the time frame in which the calculation is made, the more the benefits of non-compliance tend to outweigh the costs, as caricatured by the tragedy of the commons.

Implementation is a set of measures taken to ensure compliance. For Dinah Shelton; "Implementation of international norms refers to incorporating them in domestic law through legislation, judicial decision, executive decree, or other process. Compliance includes implementation, but is broader, concerned with factual matching of state behaviour and international norms."[158] This is a narrow concept of implementation because it means only domestic implementation. In reality, not only domestic laws and policies but also international agreements and institutions may serve as tools of implementation. International society may take implementing measures by adopting agreements which provide for more action-oriented concrete rules, such as criteria and standards, commonly taken in the form of implementing agreements and protocols. In addition, international regimes may establish mechanisms of international control and supervision.[159] As such, implementation can be understood as regulatory actions taken by governments or other institutions to induce and control real actors by means of legislation and enforcement,[160] while compliance refers to all kinds of actions taken in accordance

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wrongful act entailing a duty to afford reparation." See Patricia Birnie and Alan Boyle, International Law & the Environment, op.cit., p.194, 207

[157] See Louis Henkin, op. cit., p. 54

[158] Dinah Shelton, Law, Non-Law and the Problems of 'Soft Law', in Dinah Shelton (ed.), Commitment and Compliance, Oxford University Press, 1999, p. 5

For Brown Weiss E. and Jacobson H.K, compliance refers to whether countries in fact adhere to the provisions of the accord and to the implementing measures that they have instituted. See Brown Weiss, E., and Jacobson H.K., Engaging Countries: Strengthening Compliance with Environmental Accords, 1998

Rüdiger Wolfrum uses also the term compliance to mean giving full effect to commitments, and implementation to mean the adoption of appropriate laws. 272 *Recueil des cours* (1998), p. 29

[159] For example, the Commission on Sustainable Development is an institution created to 'keep under review the implementation of Agenda 21. UNGA Res. 47/191, para.4(c). Another example is the vessel monitoring systems established in some international fishery regimes.

[160] ILC employs the term 'implementation' in this sense. In the context of the Draft Articles on Prevention of transboundary harm from hazardous activities, adopted by ILC in 2001, 'Implementation' means the measures to be taken by States. Under Article 5 entitled 'Implementation', "States concerned shall take the necessary legislative, administrative or other action including the establishment of suitable monitoring mechanisms to implement the provisions of the present articles." In this article, two-level structure is implied, i.e. the State as regulator on the one hand, and operators to be regulated on the other.

with relevant norms.[161] However, 'implementation' and 'compliance' are often used interchangeably, in legal literature as well as in legal instruments.[162]

In today's anarchical international society, characterized by the absence of authority empowered to enforce international norms, many international regimes rely on mechanisms of international governance to ensure or enhance compliance with regime norms. Whereas compliance refers to a certain pattern of behaviour of individual actors, governance is a system-wide mechanism aimed at ensuring compliance without necessarily resorting to a formal authority. In this line, global governance can be defined as "the sum of the many ways of individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest."[163] Regime theorists propose similar definitions. For James N. Rosenau, "governance refers to activities backed by shared goals that may or may not derive from legal and formally prescribed responsibilities and that do not necessarily rely on police powers to overcome defiance and attain compliance. Governance, in other words, is a more encompassing phenomenon than government. It embraces governmental institutions, but it also subsumes informal, non-governmental mechanisms whereby those persons and

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This is clearly explained in the Commentary of ILC; "To say that States must take the necessary measures does not mean that they must themselves get involved in operational issues relating to the activities to which article 1 applies. Where these activities are conducted by private persons or enterprises, the obligation of the State is limited to establishing the appropriate regulatory framework and applying it in accordance with these articles." See ILC Report, 2001, Chapter V International Liability for injurious consequences arising out of acts not prohibited by international law (Prevention of transboundary harm from hazardous activities). P.399

For the implementation of the obligations under the Convention for the protection and preservation of the marine environment, the Convention requires States to legislation and enforcement. See Part XII, Section 5, Section 6.

[161] See Philippe Sands, Compliance with International Environmental Obligations: Existing International Legal Arrangements, in James Cameron James Cameron, Jacob Werksman & Peter Roderick (ed.), Improving Compliance with International Environmental Law, Earthscan, 1996, pp. 52-53

[162] For example, in the regime under the Montreal Protocol, the organ which is entrusted with a set of steps in the non-compliance procedure is entitled 'Implementation Committee' instead of 'Non-compliance Committee'.

[163] The Report of the Commission on Global Governance, Our Common Neighbourhood, Oxford University Press, 1995, pp. 2-4

See also, Stephen J. Toope, Emerging patterns of Governance and International law, in Michael Byers (ed.), The Role of Law in International Politics, Oxford University Press, 2000, pp.94-108

organizations within its purview move ahead, satisfy their needs, and fulfil their wants."[164] For Oran Young, the concept of governance system is assimilated to that of a regime; "Governance system is an institution that specializes in making collective choices on matters of common concern to the members of a distinct social group. Although the distinction is not a sharp one, a regime is a governance system intended to deal with a more limited set of issues or a single issue area."[165] Thus, international governance is linked to power.[166]

3.1.2 Compliance system

Each regime provides a compliance system designed to elicit compliance and deter non-compliance with regime injunctions by strengthening *animus obligandi* and by assisting its members in building their capacity to comply. Compliance system can be defined as "the subset of the treaty rules and procedures that influence the compliance level of a given rule."[167] It can be classified into three categories: a primary rule system; a compliance information system; and a non-compliance response system.[168]

Primary rule systems are traditional methods of ensuring compliance with legal rules on the basis of coercive orders. For Hart, under primary rules, human beings are required to do or abstain from certain actions, whether they wish to or not.[169] Primary rule systems can be effective in domestic legal systems, where legal norms are backed by

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[164] See James N. Rosenau, Governance, Order, and Change in World Politics, in James N. Rosenau and Ernest-Otto Czempiel (eds.), Governance without Government, Cambridge University Press, 1992, p.4 See also Ernest-Otto Czempiel, Governance and Democratization, in James N. Rosenau and Ernest-Otto Czempiel (eds.), Governance without Government. Cambridge University Press, 1992, p. 250 "I understand "governance" to mean the capacity to get things done without the legal competence to command that they be done. Where governments…can distribute values authoritatively, governance can distribute them in a way which is not authoritative but equally effective. Governments exercise rule, governance uses power. From this point of view the international system is a system of governance."

[165] Oran R. Young, International Governance: Protecting the Environment in a Stateless Society, Cornell University Press, 1994, p. 26 For Young, "It follows that all regimes are governance systems and all governance systems are social institutions but not vice versa."

[166] See Elizabeth Zoller, Institutional Aspects of International Governance, *Indiana Journal of Global Legal Studies*, vol. 3, Fall 1995. For Zoller, "Governance means setting priorities and using power to attain them" See also Daniel Bodansky, The legitimacy of international governance: A Coming challenge for international environmental Law? *AJIL*, vol. 93 (1999)

[167] Oran Young, Compliance and Public Authority: A Theory with International Applications, Johns Hopkins University Press, 1979, p. 3

[168] See Ronald B. Mitchell, op. cit. pp.16-24

[169] H.L.A. Hart, The Concept of Law, Second edition, Oxford University Press, 1961, p. 81

threats of sanctions. In international society, however, the effectiveness of primary rule systems are much more limited due to the lack of an authority entitled to take coercive measures against non-compliers, especially in the context of international regimes based on non-binding hortative norms. Common measures employed in the compliance system are liability rules, judicial dispute settlement, termination or suspension of the operation of a treaty as a consequence of its breach,[170] collective economic or military sanctions, [171] etc.

Compliance information systems are designed to enhance compliance by maximizing transparency, which can be realized by means of self-reporting, monitoring,[172] access to information,[173]dissemination of information, fact-finding and research.[174] Transparency can be an effective means of inducing compliance, as Oran Young argues; "the effectiveness of international institutions varies directly with the ease of monitoring or verifying compliance with their principal behavioral prescriptions... There are, in other words, many situations in which those contemplating violations will refrain from breaking the rules if they expect their non-compliant behavior to be exposed, even if they know that the probability that their violations will be met with sanctions is low."[175] Information systems foster coordination by facilitating the convergence of inter-subjective expectations, [176] and help 'good faith non-compliers' by elucidating the causes of involuntary defection and by finding out effective means of capacity-building.

Non-compliance response system consists of the actors, rules, and processes governing the formal and informal responses undertaken to induce those identified as in

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[170] The 1969 Vienna Convention on the Law Treaties, Article 60

[171] Charter of the United Nations, Chapter VII Action with respect to threats to the peace, breaches of peace, and acts of aggression

[172] On the effect of reporting and monitoring mechanisms on compliance, see Kamen Sachariev, Promoting Compliance with International Environmental Legal Standards: Reflections on Monitoring and Reporting Mechanisms, in *YIEL*, vol. 2 (1991), pp. 31-52

[173] See Le Droit à l'information en matière d'environnement dans les pays de l'Union Européenne, par L'Association Eurpéenne de Droit de l'Environnement, Presses Universitaires de Limoges, 1997
See Convention on access to information, public participation in decision-making and access to justice in environmental matters, done at Aarhus, Denmark, on 25 June 1998 (Aarhus Convention)

[174] See Patricia Birnie and Alan Boyle, International Law and the Environment, op.cit., pp. 205-206

[175] Oran R. Young, The effectiveness of international institutions: hard cases and critical variables, in James N. Rosenau and Ernest-Otto Chempiel (eds.), Governance without Government, Cambridge University Press, 1992, pp. 176-177

[176] See Antonia Handler Chayes, Abraham Chayes and Ronald B. Mitchell, op. cit. p.81. See also game theory models showing how players can coordinate their action simply by correctly expecting their

non-compliance to comply.[177]Non-compliance response system or non-compliance procedures are composed of mechanisms of fact-finding, compliance-inducement and varying degrees of sanctions. For 'good faith non-compliers', international regimes may provide financial assistance, education, technology transfer, joint funding mechanisms, etc. For intentional non-compliers, international regimes may resort to different mechanisms of public, diplomatic and legal pressures, which can be exercised through the conference of the parties, the participation of NGOs, etc. The basic rationale underlying non-compliance systems is the conviction that "persuasion instead of enforcement is the appropriate cure of the malady of non-compliance and States cannot be coerced into implementation but must be assisted thereto."[178]

3.2 Compliance system under the 1982 UNCLOS

3.2.1 Dispute settlement system under the 1982 UNCLOS

The 1982 UNCLOS has made an important progress in the development of compliance system by establishing the dispute settlement system characterized by a variety of procedures and the introduction of compulsory procedures. During UNCLOS III, the Informal Working Group on the Settlement of Disputes arising from the Law of the Sea Convention envisaged the creation of a flexible dispute settlement system which might give parties to a dispute maximum freedom to choose the means of settlement suitable to the nature of each case.[179] As a result, the Convention provides a set of dispute settlement procedures ranging from diplomatic means to compulsory procedures entailing binding decisions.

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partners' reactions. The prisoners' dilemma is a typical case where the players fail to achieve the optimal outcome because each player has no means of mutual communication.

[177] Ronald B. Mitchell, Compliance Theory: an Overview, op. cit. p. 17

[178] Martti Koskenniemi, New Institutions and procedures for Implementation Control and reaction, in Jacob Werksman (ed.), Greening International Institutions, Earthscan, 1996, p. 237

[179] See A.O. Adede, Settlement of Disputes Arising under the Law of the Sea Convention, *AJIL*, vol. 69, 1975

3.2.1.1 Diplomatic means of dispute settlement[180]

The first principle of the settlement of disputes arising between States Parties concerning the interpretation or application of the 1982 UNCLOS is the obligation to settle disputes by peaceful means.[181] The Convention encourages States Parties to choose any of the peaceful means of dispute settlement,[182]and gives priority to diplomatic means.[183]

The Convention obligates the parties to a dispute to proceed to an exchange of views regarding its settlement by negotiation or other peaceful means, or on the manner of implementing the settlement.[184] Exchange of views is an effective means of settling disputes, as Connie Peck states; "Reduced Communication Increases Misperceptions",[185] and many game theory models show that communication between players may facilitate the avoidance of conflicts.

As means of non-judicial third-party settlement, the Convention provides for conciliation procedures.[186] For some categories of disputes concerning the exercise of the coastal State's discretionary power in EEZ (or continental shelf) and certain types of disputes excluded from compulsory procedures entailing binding decisions by way of optional exceptions, the Convention requires compulsory submission to conciliation.[187]

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[180] Diplomatic means of dispute settlement refers to negotiation, mediation, inquiry and conciliation, in which the parties retain control of the dispute and a proposed settlement is not binding upon the parties. See J.G. Merrils, International Dispute Settlement, second edition, Cambridge University Press, 1996, p. 80

[181] Article 279. This provision is derived from Article 2, paragraph 3 of the Charter of the United Nations.

[182] Articles 280, 281

The Convention does not specify other types of diplomatic means, such as good offices, mediation, inquiry. These can be included in the category of 'any peaceful means of dispute settlement at their own choice'.

[183] Article 286

[184] Article 283

[185] Connie Peck, The United Nations as a Dispute Settlement System, Kluwer Law International, 1996, p. 31

For Connie Peck, "Lack of communication makes it more difficult to understand the other's motivations and exacerbates each other's fear of the other. It is interesting to note that one of the first responses to conflict is to reduce one's contact with the other side."

[186] Article 284, Annex V

[187] Article 297, para.2 (b) provides for a procedure of compulsory conciliation in relation to a dispute arising from marine scientific research in the exclusive economic zone or on the continental shelf under Articles 246 and 253.

Article 297, para.3 (b) provides lays down a procedure of compulsory conciliation in relation to a dispute concerning the fulfillment of the obligation of a coastal State to take proper conservation and management measures to maintain the living resources in EEZ and the exercise of the right of a coastal State to determine the allowable catch and its capacity to harvest living resources, and to allocate the whole or part of the surplus.

3.2.1.2 Compulsory procedures entailing binding decisions

As legal means of third-party settlement, the 1982 UNCLOS provides a complex system of compulsory procedures entailing binding decisions: (a) the International Tribunal for the Law of the Sea; (b) the International Court of Justice; (c) an arbitral tribunal; (d) a special arbitral tribunal.[188]Among these, a State is free to choose one or more, and modify the choice on three month's notice. This variety of procedures and flexibility of choice reflect the different positions of the delegations participating in the negotiation of the Convention,[189] integrated finally into the package of these four procedures established by elaborating the Montreux formula.[190] Aside from these, with respect to some categories of disputes arising from activities in the Area, the Sea-Bed Disputes Chamber of ITLOS has compulsory jurisdiction.[191]

However, the applicability of these compulsory procedures is restricted by a range of automatic or optional exceptions. Certain types of disputes are automatically excluded from compulsory procedures entailing binding decisions: disputes arising out of the exercise of the rights of the coastal State with respect to the marine scientific research in its EEZ or on its continental shelf and disputes relating to the sovereign rights of the

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Article 298, para.1 (a) (i) provides also a compulsory submission to conciliation for the disputes concerning sea boundary delimitations and those involving historic bays or titles in certain conditions; In case a party or parties to such a dispute has opted out the compulsory procedures entailing binding decisions on the matter, a party may request the submission to conciliation where no agreement is reached in negotiations between the parties within a reasonable period of time.

Annex V, Section 2 establishes the procedure of conciliation submitted pursuant to the provisions of the Convention on compulsory conciliation.

[188] Article 287, para.1

[189] See Myron H. Nordquist, Shabtai Rosenne, Louis B. Sohn, United Nations Convention on the Law of the Sea 1982, A Commentary, Volume V, Martinus Nijhoff Publishers, 1989, pp. 41-45

A group of States argued for conferring jurisdiction over law of the sea disputes on the International Court of Justice for the sake of the uniformity of international jurisprudence. Other States proposed the creation of a special Law of the Sea Tribunal, which would be less conservative than ICJ, better qualified in the law of the sea, more equitably representative of various legal systems and the different regions of the world. A third group of States opposed the establishment of such tribunal and preferred arbitration, which is a more flexible procedure. Still another group of States advocated a more functional approach which would establish special procedures for each main category of disputes.

[190] The informal working group on the settlement of disputes arranged a private meeting of some interested delegations at Montreux in 1975, which proposed a formula presenting three possible choices – arbitral tribunal, special law of the sea tribunal and ICJ. A fourth choice, special arbitration, was added in the subsequent session held in 1976. See the Commentary, op. cit.

[191] Article 187

coastal State with respect to the living resources in its EEZ.[192] With regard to certain categories of disputes concerning maritime boundary delimitations or military activities, and disputes in respect of which the Security Council of the United Nations is exercising the functions assigned to it by the UN Charter, a State may declare that it does not accept any one or more of the compulsory procedures entailing binding decisions, and this declaration can be withdrawn or modified.[193] The introduction of these exceptions was inevitable due to the reluctance of States to submit politically sensitive issues to compulsory procedures entailing binding decisions.[194] Without these exceptions, many States would hesitate to ratify the Convention.[195] With these exceptions, which have no functional basis, the overall integrity of the Convention is diminished.[196] It is noteworthy that disputes concerning the protection of the marine environment, together with disputes concerning the freedom of navigation, are unequivocally subject to compulsory procedures; [197] they are included neither in the category of automatic exceptions nor in that of optional exceptions.

Each of the four forums has some particular aspects. ITLOS and ICJ have common aspects as international judicial bodies, but they differ in their jurisdiction *ratione materiae* and *rationae personae*. The two judicial bodies have largely overlapping jurisdiction *ratione materiae*, but that of ITLOS is limited to the disputes concerning the interpretation and application of the Convention and the matters specifically provided for in any other agreement which confers jurisdiction on it,[198] while ICJ has jurisdiction in all legal disputes between States.[199] With respect to some subject-

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[192] Article 297
These provisions have been formulated with a view to balancing the interests of the coastal States and those of the States with major navigational interests, as well as those of the landlocked and geographically disadvantaged States. See Myron H. Nordquist, Shabtai Rosenne, Louis B. Sohn, op. cit. p. 105
[193] Article 298
[194] See Myron H. Nordquist, Shabtai Rosenne, Louis B. Sohn, op. cit., p. 88
[195] Since the beginning of the negotiations of the provisions concerning the settlement of disputes, various States qualified their willingness to accept such provisions by reservations with respect to certain categories of disputes. See Myron H. Nordquist, Shabtai Rosenne, Louis B. Sohn, op. cit., pp.38-39
[196] See Alan Boyle, Dispute Settlement and the Law of the Sea Convention: Problems of fragmentation and jurisdiction, *ICLQ*, volume 46, 1997, see also Alan Boyle, Problems of Compulsory Jurisdiction and the Settlement of Disputes Relating to Straddling Fish Stocks, *The International Journal of Marine and Coastal Law*, Volume 14, Number 1, March 1999
[197] Article 297, para 1
[198] Annex VI. Statute of the International Tribunal for the law of the Sea, Article 22
[199] Statute of the International Court of Justice, Article 36

matters, such as provisional measures and the prompt release of vessels, the Convention has given preference to ITLOS over ICJ.[200]

As for the jurisdiction *ratione personae*, ITLOS has broader competence than that of ICJ. Whereas only States may be parties in cases before ICJ, ITLOS is open to non-State entities also, to the extent specified in Article 305.[201] In addition, with respect to some categories of disputes arising from sea-bed activities, not only the States Parties but also the International Sea-bed Authority, the Enterprise, state enterprises and natural or juridical persons may have *locus standi* before the Sea-Bed Disputes Chamber of ITLOS.[202]

Arbitral Tribunal and Special Arbitral Tribunal, constituted in accordance with Annex VII and Annex VIII respectively, have common aspects as arbitral procedures. But they are different in terms of their jurisdiction; the jurisdiction *ratione materiae* of the latter is limited to technical disputes concerning the interpretation or application of the articles of the Convention relating to (1) fisheries, (2) protection and preservation of the marine environment, (3) marine scientific research, or (4) navigation, including pollution from vessels and by dumping,[203]while the former may have jurisdiction on any disputes concerning the interpretation and application of the Convention.

The compulsory procedures entailing binding decisions under the Convention are contrasted with the optional clause of the ICJ Statue and the Optional Protocol to the 1958 Geneva Conventions, where consensual jurisdiction is the rule, and compulsory jurisdiction is the exception.[204] Considering the fact that the Convention contains many equivocal provisions as a result of inevitable compromises in the process of package deal and consensus rule, the introduction of compulsory procedures entailing binding decisions was necessary to maintain the integrity of the Convention, as Alan Boyle asserts; "In this context, binding compulsory dispute settlement becomes the cement which should hold the whole structure together and guarantee its continued acceptability

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[200] See Articles 290, 292. See also Tullio Treves, The Law of the Sea Tribunal: Its Status and Scope of Jurisdiction after November 16, 1994, ZAÖRV, 1995

[201] For example, the European Community, which is a party to the Convention, may have *locus standi* before ITLOS, but not before ICJ.

[202] Article 187 and Annex VI, Article 37. See also Tullio Treves, op. cit.

[203] Annex VIII

[204] The Statute of the International Court of Justice, Article 36, para.2, and Optional Protocol of Signature concerning the Compulsory Settlement of Disputes, 1958

and endurance for all parties. Without such provision the Convention would inevitably be interpreted and applied differently by different States, even when acting entirely in good faith."[205]

Judicial proliferation by the creation of new international judicial bodies, such as ITLOS, has raised the question of the unity of international jurisprudence. In the negotiations on the dispute settlement system under the Convention, some States argued for conferring jurisdiction over law of the sea disputes on ICJ, emphasizing the need for uniformity of international jurisprudence and the danger of having too many tribunals which might render conflicting decisions.[206] Some members of ICJ, such as Judge Shigeru Oda and Judge Gilbert Guillaume have expressed their worry about the possibility of impairment of the unity of international law by the creation of a specialized tribunal.[207] For President Schwebel of ICJ, "differing outcomes or even the same outcome with differing reasoning may affect the uniformity, even the coherence, of international law." Other authors express rather positive views on the multiplicity of forums. Jonathan Charney, without denying the possibility of uneven development in the jurisprudence of public international law, believes that the growth in number of international forums necessarily will serve the objective of the peaceful settlement of international disputes.[208] Alan Boyle, recognizing the possibility of problems of consistency and continuity in the jurisprudence from the proliferation of tribunals, maintains that other forms of fragmentation - different procedures for different categories of disputes ("salami-slicing" of disputes) - may be more problematic.[209] Shabtai Rosenne argues that there is no evidence to support an eventual impairment of the unity of jurisprudence by the creation of ITLOS.[210] Carl-August Fleischhauer envisions a division of labour between ITLOS and ICJ.[211] Both lines of thought are speculative arguments rather than evidential ones.

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[205] Alan Boyle, op. cit.
[206] See Myron H. Nordquist, Shabtai Rosenne, Louis B. Sohn, op. cit., p. 41
[207] See Shigeru Oda, The ICJ Viewed from the Bench, The Hague Academy, *Recueil des Cours*, 244:12 (1993-VII), and Dispute Settlement Prospects in the Law of the Sea, *ICLQ*, vol. 44 (1995),
Gilbert Guillaume, The Future of International Judicial Institutions, *ICLQ*, vol. 44 (1995)
[208] Jonathan I. Charney, The Implications of expanding international dispute settlement systems: The 1982 Convention on the Law of the Sea, *AJIL*, vol. 90 (1996)
[209] Alan Boyle, op. cit.
[210] Shabtai Rosenne, Establishing the International Tribunal for the Law of the Sea, *AJIL*, vol. 89 (1995)
[211] Carl-August Fleischhauer, The Relationship between the International Court of Justice and the Newly Created International Tribunal for the Law of the Sea in Hamburg, *Max Planck Yearbook of United Nations Law*, 1 (1997), p. 327-33

Although it is natural to consider that the unity of jurisprudence can be better maintained when adjudications are monopolized by a single judicial body, it is too early to see to what extent jurisprudence of different tribunals will diverge or converge. Considering the fact that different judicial bodies will make decisions on the basis of the same relevant corpus of international law, the divergence of jurisprudence will be contained within certain limits, although the boundaries of the corpus of international law are not static.[212] On the other hand, one may question why the unity of jurisprudence is the sole criterion in evaluating a dispute settlement system? Is there no other criterion that might be as important as the unity of jurisprudence, for example, the efficiency in settling disputes?

3.2.1.3 Achievements of the dispute settlement system under the 1982 UNCLOS

After the establishment, in 1996, of the dispute settlement system under the 1982 UNCLOS, several cases concerning the law of the sea have been brought to ITLOS or arbitral tribunal constituted under the Convention. Except for some prompt release cases, the disputes submitted to ITLOS for provisional measures or merits are related to the lacunae or ambiguous provisions of the Convention.

In the Saiga case (Saint Vincent and the Grenadines v. Guinea),[213] the main legal question, besides some auxiliary questions, was whether the coastal State was entitled to apply its customs laws to its EEZ.[214] ITLOS found that Guinea, by applying its customs

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[212] For Robert Jennings, "Of course the Court cannot 'make' new law in the sense that a legislature can make law. It is, however, a process of judicial reasoning well recognized by courts and lawyers throughout the world." Judge Sir Robert Jennings, The Role of the International Court of Justice in the Development of International Environment Protection Law, *RECIEL*, vol.1 (1992), number 3

For the authors who regard international law as a continuing process of authoritative decisions, the task of the judge is not merely finding the appropriate rule but the choice between conflicting legal claims which have varying degrees of legal merit. In such a view, the degree of divergence between different judicial bodies can be expected to be relatively higher. See Rosalyn Higgins, Policy Considerations and the International Judicial Process, *ICLQ*, vol. 17, Part 1, January 1968

See also Hersch Lauterpacht, Development of International Law by the International Court, Grotius Publications, 1983, p. 398-399

[213] The oiltanker Saiga, flying the flag of Saint Vincent and the Grenadines, supplied gas oil to three fishing vessels in the Guinean EEZ (at a point approximately 22 nautical miles from Guinea's island Alcatraz). The Guinean patrol boasts, applying the Guinean customs laws establishing the customs radius up to 250 nautical miles from the coast of Guinea, arrested and detained the vessel and its Master. The master was charged in the Guinean court for having violated the Guinean customs laws. ITLOS, Proceedings and Judgments, Case No. 1 (Prompt Release) (1997)

[214] The main charge against the Saiga in the Guinean court was that it violated the Guinean law establishing the customs radius up to 250 nautical miles from the coast of Guinea, thus including Guinea's EEZ. The

law to a customs radius, including its EEZ, acted in a manner contrary to the 1982 UNCLOS. The Convention leaves some ambiguity with regard to the residual rights in EEZ. Guinea might have enacted the customs law, interpreting this ambiguity in its favour. ITLOS made clear that, except Article 33, paragraph 1 and Article 60, paragraph 2, the Convention does not empower a coastal State to apply its customs laws in respect of any other parts of the exclusive economic zone.

In the Southern Bluefin Tuna Cases (Australia and NZ v. Japan) concerning the 1993 Convention for the Conservation of Southern Bluefin Tuna, ITLOS decided on the provisional measures, and the merits were submitted to the arbitral tribunal constituted under Annex VII to the 1982 UNCLOS.[215] In the provisional measure cases, Australia and New Zealand, invoking the precautionary principle, requested the Tribunal to prescribe that Japan immediately cease its unilateral experimental fishing for the Southern Bluefin Tuna. ITLOS prescribed a series of provisional measures: It ordered the Parties to prevent aggravation or extension of the dispute, to prevent prejudice to the decision on the merits, to keep catches to levels last agreed, to refrain from conducting an experimental fishing programme, to resume negotiations, and to seek agreement with others engaged in fishing for Southern Bluefin Tuna. In deciding these provisional measures, ITLOS did not explicitly state its position on the precautionary principle, but the concept of the principle is embedded in the prescriptions and the reasons given by the Tribunal.[216] On the other hand, the arbitral tribunal constituted under Annex VII of the 1982 UNCLOS found that it had no jurisdiction over disputes concerning the 1993 Convention for the Conservation of Southern Bluefin Tuna, which provides its own

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Accordingly, the arrest and detention of the Saiga, the prosecution and conviction of its Master, the confiscation of the cargo and the seizure of the ship were contrary to the Convention.
There were some auxiliary legal questions, such as offshore bunkering, hot pursuit, use of force, compliance with the judgment on prompt release, reparation, financial security. ITLOS, Proceedings and Judgments, Case No.2 (Provisional measures and merits) (1998, 1999)

[215] The dispute concerning Southern Bluefin Tuna arose in the context of the regional regime under the 1993 Convention for the Conservation of Southern Bluefin Tuna, to which Australia, New Zealand and Japan are parties. The Commission for the Conservation of Southern Bluefin Tuna established under the Convention decides a TAC and its distribution among the member States. Starting in 1995, Japan has proposed an increase in the TAC, but no agreement was reached. The Commission since 1998 has agreed no change of the TAC. In 1998, Japan undertook what it describes as experimental fishing. In their requests of provisional measures, Australia and New Zealand claim this to be essentially for Japanese commercial purposes, with minimal scientific gain, thereby increasing the risk of the Southern Bluefin Tuna stock. ITLOS, Proceedings and Judgments, Cases No. 3-4 (Provisional measures) (1999)

[216] See supra. Chapter 4

dispute settlement procedures. This arbitral award has left room for controversies in respect of the jurisdiction of the dispute settlement system established under the 1982 UNCLOS and the dispute settlement system set down in each regional or bilateral instrument which have the overlapping issue-areas with the Convention.[217]

The dispute concerning the conservation and sustainable exploitation of swordfish stocks in the South-Eastern Pacific Ocean (Chile vs. EC) arose from the ambiguity of the provisions of the 1982 UNCLOS on the highly migratory species. Chile requested ITLOS to decide whether the European Community complied with its obligations under the 1982 UNCLOS to ensure conservation of swordfish, by allowing vessels flying the flag of any of its member States to undertake fishing activities for the swordfish stocks in the high seas adjacent to Chile's EEZ. The European Community requested ITLOS to decide whether Chile's unilateral conservation measures relating to the swordfish stocks on the high seas and the Galapagos Agreement were compatible with the provisions of the 1982 UNCLOS.[218] Before the Tribunal decided, the parties to the dispute had reached a provisional arrangement concerning the dispute and requested that the proceedings be suspended.[219]

In the MOX plant case (Ireland v. UK) concerning the risks of marine pollution of the Irish Sea from intended or accidental discharges of radioactive materials and wastes from the MOX plant, ITLOS dealt with the provisional measures, and the merits were submitted to the arbitral tribunal constituted under Annex VII of the 1982 UNCLOS.[220] Ireland invoked the precautionary principle, but ITLOS, without clearly expressing its position on the application of the precautionary principle, prescribed mutual cooperation and consultation.[221]

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[217] See Alan Boyle, The Southern Bluefin Tuna Arbitration, *ICLQ*, Vol. 50, April 2001

[218] ITLOS, Proceedings and Judgments, Case No.7 (2000-2001)
On the problems concerning the Galapagos Agreement, see supra. Chapter 3

[219] See ITLOS Order 2000/3, 2001/1, ITLOS/Press 43, 45, M.A. Orellana, The Swordfish Dispute between the EU and Chile at the ITLOS and the WTO. *Nordic Journal of International Law*, 2002, vol.71 N°1, pp.55-81

[220] See supra. Chapter 4

[221] The tribunal prescribed that Ireland and the United Kingdom to cooperate and shall enter into consultation in order to (a) exchange further information with regard to possible consequences for the Irish Sea arising out of the commissioning of the MOX plant; (b) monitor risks or the effects of the operation of the MOX plant for the Irish Sea; (c) devise, as appropriate, measures to prevent pollution of the marine environment which might result from the operation of the MOX plant.
See ITLOS, The MOX Plant Case, Order, 3 December 2001, see also supra. Chapter 4

As such, disputes arise when real issues encounter the equivocal provisions of the 1982 UNCLOS or the new principles which emerge after the conclusion of the Convention. The ambiguity or incompleteness of the treaty text is the very *raison d'être* of the dispute settlement system. However obscure or imperfect a treaty text might be, the court can decide on a case by applying the categories of norms enumerated in Article 38 of the ICJ Statue, when requested to do so by the parties to the dispute over which the court has jurisdiction.[222] However, in many cases, the essence of the dispute arising from fishing activities or marine pollution is a problem of cognizance of the fact in question rather than a legal question. For example, in the Southern Bluefin Tuna case, the points were whether the experimental fishing undertaken by Japan (a few hundreds tones of Southern Bluefin Tuna as stated by Japan) was purely experimental fishing or commercial fishing and whether such fishing could have any material effect on the Southern Bluefin Tuna stock. It is not a legal interpretation but a scientific judgment that can give right answers to these questions. Similarly, in the MOX case, the point is not whether the precautionary principle is an established legal rule but whether and to what extent the operation of the MOX plant would pollute the Irish Sea by discharges of radioactive materials and wastes, and whether the measures taken by the United Kingdom are sufficient. In so far as the precautionary principle remains abstract, the task of determining a threshold to apply it to a specific situation is dependent more on scientific and socio-economic evaluations than a pure legal reasoning.

Another aspect of the nature of a dispute arising from the issues of fisheries or marine pollution is that the interest at stake is relatively limited and divisible. This aspect makes easier to reach an out of court agreement between the parties to a dispute.

Considering these characteristics of the disputes arising in the issue-area of the marine environment and the flexibility and variety of the dispute settlement procedures set out in the 1982 UNCLOS, there can be ample possibility and desirability of non-judicial settlement by agreement between the parties to a dispute, backed by the judicial procedures as the last resort.

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[222] Article 4 of the *Code Civil* of France stipulates;
« Le juge qui refusera de juger, sous prétexte du silence, de l'obscurité ou de l'insuffisance de la loi, pourra être poursuivi comme coupable de déni de justice. »

3.2.2 Meeting of States Parties

After the entry into force of the 1982 UNCLOS, the Meeting of States Parties to the 1982 United Nations Convention on the Law of the Sea (SPLOS)" is convened on an annual and *ad hoc* basis at the headquarters of the United Nations.[223] The function of the Meeting of States Parties is not defined in the Convention. Considering that the Secretary-General is entrusted with the duty to report to all States on issues of a general nature that have arisen with respect to the Convention, we may understand SPLOS to have the competence to deal with questions relating to the implementation of the Convention and the compliance therewith. The main tasks of SPLOS are the budgetary and administrative matters relating to the institutions established under the Convention; the International Tribunal for the Law of the Sea, the International Seabed Authority, and the Commission on the Limits of the Continental Shelf.[224] Because of the ambiguity of the mandate of SPLOS, in particular the ambiguity of the division of labour between SPLOS and the General Assembly of the United Nations,[225] the discussion on the 'Role of the Meeting of States Parties with respect to the implementation of the United Nations Convention of the Law of the Sea' began in the tenth Meeting of States Parties. Some delegations maintained that the role of SPLOS should not be confined to dealing with only budgetary and other administrative matters and certain issues pertaining to the implementation of the Convention could be discussed by the Meeting of States Parties. Other delegations expressed the view that an expansion of the mandate of the meeting of States parties beyond budgetary and administrative matters was not provided for in the Convention.[226]

If SPLOS makes decisions on the matters relating to the functioning of the institutions established under the Convention, such as the election of their members, the determination of their budgets, such tasks are basic elements of the implementation of the Convention. Besides these routines tasks, SPLOS has initiated the creation of the three

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[223] See supra. 1. Decision-making procedures

[224] See Reports of the Meeting of States Parties, SPLOS/60 (2000), SPLOS/73 (2001), etc.

[225] The General Assembly serves as a forum for general discussion on the law of the sea. In particular, it has created an open-ended informal consultative process in order to facilitate the annual review by the General Assembly. A/RES/54/33, 18 January 2000.

[226] See Report of the tenth Meeting of States Parties, SPLOS/60, 22 June 2000. In view of the divergent views expressed, the meeting agreed to include in the agenda of the eleventh Meeting of States Parties an item entitled "matters related to article 319 of the United Nations Convention on the Law of the Sea.

trust funds, approved by the General Assembly of the United Nations.[227] SPLOS has also decided to invite an NGO to participate in the meeting as an observer.[228] These are examples of the decisions made by SPLOS in its effort to enhance the implementation of the Convention by improving the capacity-building of developing countries and encouraging public participation.

3.2.3 Information system

The 1982 UNCLOS provides several provisions requiring States to collect, exchange and disseminate information on the conservation of marine living resources and the prevention of pollution, as well as to monitor and assess the risks and effects of pollution of the marine environment.[229]

3.2.4 Development and transfer of marine technology

The 1982 UNCLOS calls for States to cooperate in promoting the development and transfer of marine technology. In particular, States are required to promote the acquisition, evaluation and dissemination of marine technological knowledge and facilitate access to such information and data, the development of the necessary technological infrastructure to facilitate the transfer of marine technology, and the development of human resources.[230] Also, the Convention requires States to provide scientific and technical

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[227] See SPLOS/60, paras.47, 57, 60, UNGA Resolution A/RES55/7, paras.9, 18, 20
The three trust funds are (a) a voluntary trust fund to assist States in the settlement of disputes through ITLOS; (b) a voluntary trust fund to provide training for technical and administrative staff and technical and scientific advice as well as personnel to assist developing countries to prepare submissions and submit information under Article 76 and annex II to the Convention; (c) a voluntary trust fund for the purpose of defraying the costs of participation of the members of the Commission on the Limits of the Continental Shelf from developing States in the meeting of the Commission.

[228] Rule 18, paragraph 4 of the Rules of procedure for Meetings of States Parties (SPLOS/2/Rev.3/Add.1)
The Seamen's Church Institute has drawn attention to the problems faced by seafarers.

[229] Articles 61, para.5, 119, para. 2, 200, 201, 204, 205, 244
See *supra.* Chapter 4
See also FAO Fisheries Circular No. 953 FIDI/C953 Legal Aspects of the Collection of Fisheries Data

[230] Part XIV

assistance to developing States.[231] These provisions can be understood as the 'capacity-building clauses'.[232]

3.3 Post-UNCLOS evolution of compliance systems

3.3.1 Development of information system

As the 1998 UN/ECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters declares; "in the field of the environment, improved access to information and public participation in decision-making enhance the quality and the implementation of decisions...",[233] the development of information system is essential for the furtherance of the effectiveness of regimes by enhancing cognitive rationality. For this reason, virtually all of international regimes are endowed with information systems.[234] These systems are oriented in two directions: (a) developing and sharing knowledge on natural phenomena in the relevant issue-areas; (b) monitoring activities of regime members or other actors with a view to verifying compliance.[235] The first category of information systems is introduced in many international environmental regimes in the form of the right of access to information or the obligation to exchange information, as laid down, for example, in the ILC Draft Articles.[236] But the second category of information systems is politically sensitive and is not yet widely accepted in international environmental regimes. Some fisheries regimes adopt strong methods of monitoring activities of real actors, such as boarding and inspection by observers,[237]and Vessel Monitoring System (VMS) through satellite

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[231] Article 202
[232] On the concept of capacity-building, see infra. para.3.3.4
[233] Preamble.
[234] See supra. Chapter 3
[235] See Patrick Széll, The Development of Multilateral Mechanisms for Monitoring Compliance, in Winfried Lang (ed.), op. cit.
[236] ILC, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, adopted by ILC at its fifty-third session (2001), Articles 12, 13
[237] Some examples of the instruments laying down the observation by boarding and inspection are: the 1995 Fish Stocks Agreement (Articles 21, 22), the 1980 Convention on the Conservation of Antarctic Marine Living Resources (Article XXIV), the 1994 Convention on the Conservation and Management of Pollock Resources Central Bering Sea (Article XI)

position-fixing transmitters.[238] In regimes equipped with non-compliance system, the second category of information system is incorporated into the non-compliance system. In regimes without a non-compliance system, the information system is built as an independent mechanism. The importance of the information system is more and more frequently emphasized in international environmental norms, for example, the core element of the 'Draft articles on Prevention of transboundary harm from hazardous activities' resides in procedural norms designed to improve the information system, such as risk assessment, notification, exchange of information, information to the public.[239] In order to facilitate the exchange of information, some new procedures have been developed, such as information clearing house or PIC procedure. For example, the 1995 Washington Declaration on Protection of the Marine Environment from Land-Based Activities calls upon States to establish a clearing-house mechanism to provide decision makers in all States with direct access to relevant sources of information, practical experience and scientific and technical expertise and to facilitate effective scientific, technical and financial cooperation as well as capacity-building.[240] The 1989 Amended London Guidelines for the Exchange of Information on Chemicals in International Trade has introduced the Prior Informed Consent (PIC) procedure to help control imports of unwanted chemicals that have been banned or severely restricted.[241]

3.3.2 Development of public participation

As declared in the 1992 UNCED Declaration, Principle 10, environmental issues can be best handled with public participation. Responding to this principle, the Aarhus Convention provides general guidelines on public participation to be ensured in three fields: 1) public participation in decisions on specific activities; 2) public participation concerning plans, programmes and policies relating to the environment; 3) public

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[238] For example, the 1994 Convention on the Conservation and Management of Pollock Resources Central Bering Sea (Article XI)
[239] ICL, op.cit.
[240] Para. 13 (b)
[241] The PIC procedure is implemented jointly by FAO and UNEP through the FAP/UNEP Joint Programme for the Operation of PIC. The aim of PIC procedure is to promote a shared responsibility between exporting and importing countries in protecting human health and the environment from the harmful effects of certain hazardous chemicals being traded internationally. See UNEP, PIC home page.

participation during the preparation of executive regulations and/or generally applicable legally binding normative instruments.[242] In each of these fields, the required methods focus on providing right information to the public and ensuring the public's right to express its opinion. To promote effective public participation, the public authority is required to inform the public concerned of the subject of decisions to be made in a sufficiently early stage of the process so that the public may have a sufficient time-frame for effective participation. The public should be given the opportunity to comment, directly or through representative consultative bodies.

In the contemporary world, the most influential entities among non-State actors involved in public participation in the global environmental issues are non-governmental organizations, whose activities are rapidly being reinforced at national, regional and international level.[243] The Charter of the United Nations has already recognized the necessity of the cooperation of the United Nations system with NGOs. [244] But the Charter has envisioned only consultation with NGOs, instead of participation of NGOs.[245] In general, NGOs are not allowed to participate directly in intergovernmental regimes. But in democratic societies, there are many means by which they can be indirectly involved in the making and functioning of many intergovernmental regimes. They may orient the position of individual governments through their domestic activities. They may provide State actors with relevant ideas and knowledge, or mobilize public opinion, at national, regional or global level.[246] The most remarkable success story of non-State actors in the

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[242] Articles 6, 7, 8

[243] For the history of the development of NGOs, see Karsten Nowrot, Legal Consequences of Globalization: The Status of Non-Governmental Organizations Under International Law, *Indiana Journal of Global Legal Studies*, vol. 6 (1999)

[244] UN Charter, Particle 71; "The Economic and Social Council may make suitable arrangements for consultation with non-governmental organizations which are concerned with matters within its competence..."

[245] This provision of the Charter is regarded as a compromise among those who advocate NGO participation in the United Nations' work and those who oppose such participation. See Stephen Hobe, Global Challenge to Statehood: The Increasingly Important Role of Nongovernmental Organizations, *Indiana Journal of Global Legal Studies*, vol. 5 Fall 1997, pp. 191-210

[246] For example, IUCN has taken initiatives or participated in the preparation of conclusion of many international conventions, such as the 1971 Convention on Wetlands of International Importance (Ramsar Convention), the 1973 CITES, the 1992 Convention on Biological Diversity, etc.

international arena was the contribution of a wide range of NGOs to the 1972 UNCHE and the1992 UNCED.[247]

Activities of NGOs are not limited to the field of regime creation. They participate in the functioning of international regimes.[248] In particular, in the 1992 UNCED, NGOs have succeeded in formalizing their role in the implementation of the agreements concluded in the UNCED. The 1992 UNCED Declaration lay down a principle on public participation which relates mainly to the activities of NGOs.[249] Agenda 21 recognizes NGOs as partners of States in the implementation,[250] and calls for States to promote communication and cooperation with NGOs.[251]In the Convention on Climate Change, it is declared; "All Parties...shall...(i) promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations."[252] In the regime under the Convention on Biological Diversity, NGOs can be admitted as observers at meetings of the Conference of the Parties.[253] In the Meeting of States Parties to the 1982 UNCLOS also, an NGO is invited to participate as an observer.[254]

The most effective means to which NGOs may resort in their effort to promote compliance with international environmental norms is their participation in the compliance information system.[255] Compared with government actors, NGOs may be freer and more transparent, although their resources are more limited, in collecting, disseminating relevant information and knowledge. NGOs may play an important role in

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[247] See Wolfgang E. Burhenne, The Role of NGOs, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995, Hilary French, The Role of non-State Actors, in Jacob Werksman (ed.), Greening International Institutions, Earthscan, 1996

[248] With respect of the role of non-State actors in the making of international regimes, see supra, chapter 2

[249] Principle 10

[250] Agenda, Chapter 27, para. 27.1 "Formal and informal organizations, as well as grassroots movements, should be recognized as partners in the implementation of Agenda 21"

[251] Agenda, Chapter 27, Para.27.4 states; "to ensure that the full potential contribution of non-governmental organizations is realized, the fullest communication and cooperation between international organizations, national and local governments and non-governmental organizations should be promoted."

[252] Article 4, para 1. (i)

[253] Article 23, para.5. Qualified NGOs can be admitted at the meetings of the Conference of the parties unless at least one third of the Parties present object.

[254] In accordance with the Rule 18, paragraph 4 of the Rules of procedure for Meetings of States Parties (SPLOS/2/Rev.3/Add.1), the Seamen's Church Institute has reported to SPLOS on the problems concerning seafarers.

[255] See Céline Chamot, La participation des ONG au système de contrôle de la Convention de Berne, in Sandrine Maljean-Dubois (dir.), l'effectivité du droit européen de l'environnement : Contrôle de la mise en œuvre et sanction du non-respect, La documentation française, 2000, pp. 67-83

reinforcing non-compliance procedures by engaging in fact-finding, monitoring and thereby providing information on suspected non-compliers.[256] Some NGOs are officially entrusted with the role of provisional secretariat of international conventions, or the role of assisting the secretariat.[257] NGOs may also contribute to the enhancement of compliance by means of administrative and judicial proceedings in national courts.[258]

In spite of the important contribution made or expected to be made by NGOs in the creation and functioning of international environmental regimes, many questions arise in relation to the nature of their role. In legal aspect, the legal personality of NGOs and the sources of the legitimacy of their role in intergovernmental regimes are ambiguous and diverse.[259] There is a large spectrum of the roles played by NGOs in and around international regimes. In the issue-areas characterized by highly political sensitivity, such as Nuclear Safety, etc, NGOs are excluded. In the context of the relationship with ECOSOC, NGOs have consultative status.[260] In other regimes, NGOs are accorded with varying degrees of participation, ranging from observer or advisory status to the status of provisional secretariat.[261] In practical aspect, it would be difficult to decide what roles will be given to which ones among the myriad of NGOs.[262]

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[256] See Cyrill De Klemm, Les ONG et les Experts scientifiques, in Claude Imperiali (ed.), L'effectivité du droit international de l'environnement, Economica, 1998
Greenpeace is active in monitoring compliance with international norms concerning ocean dumping, whaling, etc. See www.greenpeace.org. TRAFFIC monitors wildlife trade in the context of the regime under CITES. See www.traffic.org.

[257] In the 1971 Convention on Wetlands of International Importance (Ramsar Convention), IUCN is entrusted with the role of secretariat. Article 8 stipulates; "The International Union for the Conservation of Nature and Natural Resources shall perform the continuing bureau duties under this Convention until such time as another organization or government is appointed by a majority of two-thirds of all Contracting Parties. In the 1973 Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the secretariat can be assisted by NGOs. Actually, TRAFFIC plays the role of surveillance of trade of wild flora and fauna. TRAFFIC is the joint wildlife trade monitoring programme of WWF and IUCN. See www.traffic.org.

[258] Principle 10 of the 1992 Rio Declaration provides; "...Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided." See also James Cameron, Compliance, Citizens and NGOs, in James Cameron, Jacob Werksman & Peter Roderick (ed.), Improving Compliance with International Environmental Law, Earthscan, 1996

[259] See Hilary French, The Role of non-State Actors, in Jacob Werksman (ed.), Greening International Institutions, Earthscan, 1996

[260] ECOSOC Resolution 1296, adopted to implement Article 71 of the UN Charter, establishes the characteristics of the relationship between ECOSOC and NGOs, and the roles of three categories of NGOs.

[261] See Stephen Hobe, Global Challenges to Statehood: The Increasingly Important Role of Nongovernmental Organizations, *Indiana Journal of Global Legal Studies*, vol. 5 Fall 1997

[262] For the growth of NGOs in number, size and scope, see Thomas Princen, Matthias Finger, and Jack Manno, Nongovernmental Organizations in World Environmental Politics, *International Environmental Affairs*, vol. 7 N°1, Winter 1995

3.3.3 Development of financial mechanisms and resources

In many cases, States fail to comply with environmental obligations for lack of financial resources, in spite of their *animus obligandi* and *bona fide* efforts. In such cases, the effectiveness of regimes can be enhanced by providing some financial mechanisms designed to assist regime members in complying with regime norms. Many trust funds have been created to cover the costs of administering and implementing a specific regime, including the costs of the maintenance of the secretariat, the meeting costs, the costs of participation by developing States. Since the creation of the regime under the Montreal Protocol, the problem of funding the "incremental costs incurred by developing States for their compliance with their obligations under the regime" arises as a bigger issue in building international environmental regimes.

Thousands of trust funds have been created for specified purposes, such as the World Wildlife Fund (WWF), the World Heritage Fund (WHF), the Ozone Projects Trust Fund (OTF), the Rain Forest Trust Fund (RFT), UNEP Convention Funds, and many others.[263] In parallel with these trust funds for specified purposes, the Global Environmental Facility (GEF) has been developed with more general purposes.[264] GEF was first established in 1991 in the World Bank as a pilot programme in order to assist in the protection of the global environment and promote thereby environmentally sound and sustainable economic development.[265] Reflecting the result of the debates in the 1992 UNCED, GEF was restructured on the basis of the Instrument Establishing the Global Environmental Facility,[266] adopted in 1994 in accordance with the principles of universality,[267] transparency and democracy. Composed of the Assembly, the Council, the

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[263] See Peter H. Sand, Trusts for the Earth: New International Financial Mechanisms for Sustainable Development, in Winfried Lang (ed.), op. cit. pp.167-188

[264] See Helen Sjöberg, The Global Environmental Facility, in Jacob Werksman (ed.), Greening International Institutions, Earthscan, 1996

[265] Resolution N° 91-5 of the Board of Executive Directors of the World Bank

[266] 33 *ILM* (1994) 1273

[267] Any State member of the United Nations or of any of its specialized agencies may become a Participant on the GEF. Instrument Establishing the Global Environmental Facility, I. Basic Provisions, para. 7 The decision-making procedures of the Assembly and the Council are hybrids of those of the Bretton Woods System and the United Nations system. See Instrument Establishing the Global Environmental Facility, IV. Principles of Decision-making

Secretariat, the Scientific and Technical Advisory Panel, and three Implementing Agencies – UNDP, UNEP and the World Bank, GEF functions as a mechanism for providing new and additional grant and concessional funding to meet the agreed incremental costs of measures to achieve agreed global environmental benefits in the four focal areas - Climate change; Biological diversity; International waters; and Ozone layer depletion. But the areas eligible for funding by GEF are expanding to the new fields, such as Persistent Organic Pollutants.[268] Under the operational program entitled "coastal, marine and freshwater ecosystems", GEF has financed many regional and national projects for the protection on the marine environment, in particular the protection of marine biodiversity, the protection of marine and coastal ecosystems, the integrated management of coastal zones, etc."[269]

The principle of common but differentiated responsibilities underlies these financial mechanisms. On the one hand, the protection of the global environment is the responsibility to be shared by all States in the interest of the humanity as a whole. On the other, these financial mechanisms constitute an embodiment of the principle of differentiated responsibility in that they are designed to assist developing States to fulfil this common responsibility by providing them with financial resources contributed mainly by developed States.[270] The additional burden to be borne for the protection of the global environment is termed 'incremental costs'. When this burden is transferred from developing countries to developed countries under the principle of differentiated responsibility, it is termed 'new and additional financial resources[271] or 'additionality'.[272]

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[268] The agreed incremental cost of activities concerning land degradation, primarily desertification and deforestation, as they relate to the four focal areas, are also eligible for funding. In 2001, Stockholm Convention on Persistent Organic Pollutants (POPs) agreed GEF as the interim financial mechanism for the implementation of the POPs program. See www.worldbank.com

[269] GEF has financed some regional projects, such as "Conservation and Sustainable Use of the Mesoamerican Barrier Reef System Project, "Coral Reef Monitoring Network in member states of the Indian Ocean Commission", "South Indian Ocean Fisheries". GEF has financed also many national projects undertaken for the protection of marine biodiversity, marine and coastal ecosystems in developing countries, such as, Benin, Colombia, Ecuador, Gambia, Ghana, Guinea, Indonesia, Mauritius, Moldova, Mozambique, Namibia, Philippines, Samoa, Senegal, Seychelles, T&T, Tunisia, Ukraine, Viet Nam, Yemen, among others. See World Bank GEF Database.

[270] See David Freestone, The Challenge of Implementation: Some Concluding Notes, in Alan Boyle and David Freestone (ed.), International Law and Sustainable development, Oxford University Press, 1999

[271] See the 1992 Convention on Biological Diversity Convention Article 20, para.2; "The developed country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of this Convention..." See also similar provision in the Convention on Climate Change, Article 4, para.3.

3.3.4 Development of capacity-building mechanisms

Technical resources may also become a limiting factor in complying with international environmental norms. In order to enhance the effectiveness of a regime, it is necessary to assist the States in need of technical resources in their effort to fulfil their obligations. To this end, many international instruments lay down capacity-building clauses. The concept and means of capacity-building differ from instrument to instrument, but their common element is that they purport to enable developing countries to participate in the implementation of a treaty, through technical assistance and transfer of technology and other appropriate means.[273] Agenda 21 lays much emphasis on capacity-building in its broad sense; "The ability of a country to follow a sustainable development path is determined to a large extent by the capacity of its people and its institutions, as well as its ecological and geographical conditions. Specially, capacity-building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities...As a result, the need to strengthen national capacities is shared by all countries."[274] In the field of the marine environment, Agenda 21 underlines the capacity-building for each programme area.[275] Most international environmental instruments contain such clauses which may serve as a legal basis for capacity-building mechanisms, in content if not in name.[276]

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[272] See Andrew Jordan and Jacob Werksman, Financing Global Environmental Protection, in James Cameron, Jacob Werksman & Peter Roderick (ed), Improving Compliance with International Environmental Law, Earthscan, 1996, pp. 247-255

[273] See Diana Ponce-Nava, Capacity-Building in Environmental Law and Sustainable Development, in Winfried Lang (ed.) op.cit. pp.131-142
"In some cases, these types of clauses are in the form of 'provision of technical assistance', and in many cases are associated with provisions related to the development and transfer of technology. The level of specificity in what we could categorize as 'capacity-building clauses' depends on the nature of the treaty in question. Thus, in some cases such provisions simply create basic obligations upon states to cooperate directly, or through competent international obligations. In other cases, provisions have been included to give details of the scope and nature of technical assistance and the component aspects of transfer of technology, in order to attain the objectives of a particular international legal instrument." p.133

[274] Chapter 37

[275] Chapter 17

[276] The 1982 UNCLOS contains several provisions which can be interpreted as capacity-building clauses: See Article 202 Scientific and technical assistance to developing States, Article 266 Promotion of the development and transfer of marine technology.
The UN Framework Convention on Climate Change, the Convention on Biological Diversity, and many other instruments, in particular those concluded since 1990s, contain detailed capacity-building clauses.

3.3.5 Formation of the concept of dispute avoidance

In the course of the negotiations of the Convention in the UNCLOS III, the concept of dispute avoidance was first proposed.[277] Since then, some delegations have reiterated this concept in the conferences of the UN General Assembly, the 1992 UNCED and the UNEP.[278] The basic elements of a dispute avoidance mechanism are: prior consultation; reporting procedure; fact-finding; commission of inquiry.[279] But these mechanisms have already been set up in many international instruments, including the Convention. The novelty of the concept of dispute avoidance resides in the fact that it is aimed at preventing a dispute which is likely to occur, while traditional diplomatic means of dispute settlement are formulated as means of settling disputes which have occurred. The same methods can be regarded as dispute avoidance mechanisms when employed *ex ante*, diplomatic means of dispute settlement when applied *ex post*.

The concept of dispute avoidance finds an echo in some international instruments. For example, the 1995 Agreement lays down a provision on the prevention of disputes by elaborating decision-making procedures.[280] If non-compliance procedures are understood as a form of 'dispute avoidance' or 'alternative dispute resolution' in the sense that resort to binding third-party procedures is avoided, as Patricia Birnie and Alan Boyle maintain,[281] dispute avoidance systems have already been embedded in many regimes, not in term but in content.

3.4 Conclusion

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[277] See A. O. Adede, The System for Settlement of Disputes under the United Nations Convention on the Law of the Sea, Martinus Nijhoff, 1987

[278] A. O. Adede, Management of Environmental Disputes: Avoidance versus Settlement, in Winfried Lang (ed.), op. cit.

[279] Idem.
See also Zano O. Gresham and James M. Schurz, Dispute avoidance and dispute settlement in international environmental agreements and multilateral trade agreements, UNEP, 1995

[280] The 1995 Agreement, Article 28 Prevention of disputes.

[281] Patricia Birnie and Alan Boyle, International Law and the Environment, Second edition, Oxford University Press, 2001, p. 207

Amidst the development of a range of means of enhancing compliance with international environmental norms, the traditional dispute settlement system remains as a buttress of compliance. The 1982 UNCLOS has made an important step forward in the evolution of dispute settlement procedures, by introducing compulsory procedures and by providing a variety of dispute settlement procedures. Some direct impact of the dispute settlement procedures of the Convention can be found in some subsequent instruments. For example, the 1995 Agreement incorporates the dispute settlement procedures of the Convention,[282]and further extends the jurisdiction *ratione personae* to non-State entities.[283] The 1994 Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas relies on the dispute settlement institutions of the Convention but such procedures can be used only with the consent of all parties to a dispute.[284] Indirect repercussions of the dispute settlement system of the Convention can be found in many regimes, which, without providing such a variety of procedures, set down a limited number of forums having compulsory jurisdiction. Most common types of legal means of dispute settlement in post-UNCLOS international environmental regimes are: (a) those providing the choice between two compulsory procedures, ICJ and Arbitration, with conciliation as the default procedure;[285](b) those providing the choice between two compulsory procedures, ICJ and Arbitration, without providing conciliation as the default procedure.[286]

In the issue-areas dealing with global commons, where many norms are formulated in the form of non-binding instruments and the causal relationship between a

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[282] Article 30

[283] By virtue of Article 1 (3) which stipulates; "This Agreement applies *mutatis mutandis* to other fishing entities whose vessels fish on the high seas", the dispute settlement system of the Agreement will apply to other fishing entities whose vessels fish on the high seas.

[284] Article IX

[285] Examples of this type of instruments, *i.a.*, are: The 1985 Vienna Convention for the Protection of the Ozone Layer, (Article 11), The 1992 Framework Convention on Climate Change (Article 14), the 1992 UN Convention on Biological Diversity (Article 27), the 1994 Convention to Combat Desertification on Those Countries Experiencing Drought and/or Desertification (Article 28), the 1994 Protocol on Further Reduction of Sulphur Emission to the 1979 Convention on Long-Range Transboundary Air Pollution (Article 9)

[286] Examples of this type, *i.a.*, are: The 1989 Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), Article 20, the 1992 Convention on the Protection of and Use of Transboundary Watercourses and Lakes (Article 22), the 1991 Convention on Environmental Impact Assessment in a Transboundary Context (Article 15), the 1992 Convention on the Transboundary Effects of Industrial Accidents (Article 21), the 1986 Convention on Early Notification of a Nuclear Accident (Article 11), the 1991 Protocol to the Antarctic Treaty on Environmental Protection,

particular action and its consequences is difficult to identify, the effectiveness of legal means of dispute settlement may be limited.[287] The limited utility of the legal means of dispute settlement can be shown by the fact that few environmental disputes have been settled through international adjudications. As a result, more and more international regimes adopt a variety of complementary mechanisms, such as non-compliance systems, information systems, financial mechanisms, capacity-building mechanisms, public participation, etc.

The 1982 UNCLOS contains a range of provisions which may serve as the legal foundation for the evolution of the regime toward these mechanisms. The Convention sets up the Meeting of States Parties. Although the Convention does not lay down a provision on the secretariat, the Secretary-General of the United Nations is playing the role of the secretariat of the Convention. The Meeting of States Parties and the Secretary-General of the United Nations may function as institutional mechanisms for a non-compliance system. In addition, the provisions of the Convention requiring States to collect, exchange and disseminate information as well as monitor and assess risks and effects of pollution of the marine environment constitute a legal foundation for a compliance information system. The provisions on transfer of technology can develop into a capacity-building mechanism,[288] when backed by necessary financial resources.[289]

As its substantive norms are endowed with various evolutionary mechanisms,[290] the Convention contains the procedural norms which are ready to evolve into a variety of procedural components of an effective compliance system. This evolution can be realized

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[287] There are various reasons why legal process is not effective in such issue-areas: For Koskenniemi, In the judicial or arbitral process, the parties may not agree on a procedure for determining what constitutes a 'refusal to fulfil a treaty obligation', *i.e.* a formal breach, or there may be no certainty that the losing party will comply with an eventual judgment or award; or the alleged violation may concern a collective interest (environmental or human rights treaties are obvious examples) but there is no state or body which could claim to represent that interest. Also a formal dispute settlement system intervenes only after the breach. See Martti Koskenniemi, Breach of Treaty or Non-compliance? Reflections on the Enforcement of the Montreal Protocol, *YIEL*, vol. 3 (1992)
And dispute settlement through arbitration or judicial decision may seem simply too slow, too expensive, too untried or too confrontational to deal with technically complex and politically sensitive questions relative to a party's implementation. See Thomas Gehring, International Environmental Regimes: Dynamic Sectoral Legal Systems, *YIEL*, vol. 1 (1990)

[288] Art XIV

[289] Article 270 of the 1982 UNCLOS is a provision foreseeing the development of appropriate international funding mechanisms for ocean research.

[290] See supra. Chapter 3

by way of reinterpretation of relevant provisions or adoption of subsequent agreements, or other mechanisms of regime evolution.

General Conclusion

The 1982 UNCLOS provides a legal basis for the comprehensive regime of the law of the sea, covering all issue-areas of the law of the sea. This regime is composed of a variety of sub-regimes, such as the regime of the territorial sea, the EEZ regime, the high seas regime, the regime of islands, the regime of international straits, and so on. Since "the problems of ocean space are closely interrelated", these sub-regimes are all interconnected. The regime for the protection of the marine environment is also one of these sub-regimes nested in the regime of the law of the sea. The 1982 UNCLOS contains a set of elements sufficient to form a regime for the protection of the environment: an issue-area; a set of substantive norms; a set of decision-making procedures; convergence of expectations around the Convention; and a compliance system.

The issue-area of the regime for the protection of the marine environment under the 1982 UNCLOS is composed of two categories of issues. The issues concerning marine pollution are specific to the regime for the protection of the marine environment, but the issues concerning the conservation of marine living resources constitute an overlapping issue-area. In the light of the concept of ecosystem, it is evident that marine living resources are components of the marine environment. In this sense, the issues concerning the conservation of marine living resources constitute part of the issue-area of the regime for the protection of the marine environment as well as the issue-areas of the EEZ fishing regime and the high seas fishing regime. Chapter 17 of Agenda 21 has further extended the issue-area of the regime for the protection of the marine environment to the issues of the over-development of coastal areas.

Reflecting this complexity of its issue-area, the regime for the protection of the marine environment is endowed with a complex set of substantive norms. The norms for the prevention, reduction and control of marine pollution laid down in Part XII of the 1982 UNCLOS are specific to the regime for the protection of the marine environment. The norms concerning the conservation of marine living resources have a dual aspect. They are components of either the EEZ fishing regime or the high seas fishing regime, but they also belong to the category of the norms for the protection of the marine environment.

The 1982 UNCLOS provides for a set of procedural rules: 1) the decision-making procedures for its routine functioning, as formulated in the Rules of Procedures for Meetings of States Parties to the Law of the Sea Convention; 2) the procedures for the settlement of disputes; 3) the rules for amendment. These decision-making procedures are applicable to the whole regime of the law of the sea and all of its sub-regimes, including the regime for the protection of the marine environment.

Converging expectations around the 1982 UNCLOS have been manifested within and beyond the context of the Convention. Within the context of the Convention, converging expectations have crystallized in the ratification or accession by an absolute majority of the States of the world. Beyond the context of the Convention, expectations have converged in universal forums, in particular the General Assembly of the United Nations and the UNCED, as expressed in declarations and resolutions in which international society has reiterated the importance of the Convention as a legal framework for the law of the sea. Converging expectations have also been shown in many international treaties which declare their consistency with the 1982 UNCLOS as well as many national laws and regulations adopted in conformity or compliance with the Convention. The regime for the protection of the marine environment is also equipped with a compliance system, composed of the information system and the dispute settlement system.

The protection of the marine environment is an issue-area where new norms emerge rapidly due to increasing human activities in marine and coastal areas, the ensuing degradation of the marine environment, ever increasing scientific knowledge on the marine realm and human awareness of the gravity of environmental problems. The regime for the protection of the marine environment under the 1982 UNCLOS is endowed with a variety of mechanisms for evolution, such as evolution by amendment, evolution by additional agreements, evolution by re-interpretation, evolution by rules of reference and evolution by the creation of sub-regimes. By virtue of these mechanisms, the regime has evolved and is prepared to evolve adapting to the changing environment. The amendment clauses of the 1982 UNCLOS, although rather rigid, allow the regime to evolve by modifying its provisions. The two additional agreements, i.e., the 1994 Agreement and the 1995 Agreement, have introduced new elements into the sea-bed

regime and the high seas fishing regime under the 1982 UNCLOS. Although the 1982 UNCLOS does not articulate some relatively new principles of international environmental law, such as the ecosystem approach, the principle of sustainable development and the precautionary principle, the Convention is well prepared to embrace these principles utilizing its different evolutionary mechanisms. New technical rules developed in other international or regional regimes with a specific issue-area can be incorporated into the regime for the protection of the marine environment under the 1982 UNCLOS by means of the rules of reference. Many regional regimes are developing for the protection of particular regional seas from pollution, over-exploitation of marine living resources and over-development of coastal zones. Such regional regimes may be regarded as sub-regimes to the umbrella regime established under the 1982 UNCLOS, since their geographical scopes are limited to particular regional seas but their norms are consistent with those under the Convention.

Agenda 21 adopted in 1992 UNCED has established, in Chapter 17, a comprehensive set of objectives for the protection of the marine environment. Therefore, Chapter 17 of Agenda 21 has a special relationship with the 1982 UNCLOS: the former sets down an action plan that international society should pursue; the latter serves as the legal basis for the achievement of this international action plan. This relationship is defined in Agenda 21 itself.[291] In this regard, a question has been posed in Chapter 1: is the regime under the 1982 UNCLOS adequate for the achievement of the objectives of Agenda 21?[292] To answer this question, the Convention can be evaluated in conceptual terms and in real situations. Conceptually, the principles and rules set down in the Convention are not sufficient for the achievement of the objectives of Agenda 21. It would be difficult to expect that sovereign States be governed effectively by such abstract or ambiguous principles and rules as provided in the Convention. In particular, the insufficiency of legal norms is apparent in the issue-area of over-development of coastal areas, which requires, *i.a.*, effective norms for the prevention, reduction and control of marine pollution from land-based sources. Whereas Agenda 21 pays particular attention to the problems of over-development of coastal areas and the ecological relationship

[291] Agenda 21, Chapter 17, para.17.1
[292] See supra. p. 51

between marine areas and coastal areas, the 1982 UNCLOS, without providing any particular rules, only provides a call for the establishment of national laws and regulations and global or regional rules, standards, recommended practices and procedures to prevent, reduce and control marine pollution from land-based sources.[293]

However, in an umbrella regime, the insufficiency of concrete norms is not necessarily a critical deficiency, if the regime is endowed with efficient evolutionary mechanisms. As a framework convention, the 1982 UNCLOS provides for norms of a rather general nature. Insufficient and abstract norms may be supplemented through different evolutionary mechanisms by filling its lacunae, concretizing ambiguous provisions and incorporating new rules.

An evaluation of the real contribution by the regime under the 1982 UNCLOS to the objective of the protection of the marine environment would require a counterfactual argument. If the 1982 UNCLOS had not been concluded, would the marine environment be more seriously deteriorated than it is now? The search for an answer to this question requires not only scientific assessments of the state of the marine environment in different times but also assessments of the hypothetical state of the marine environment in the case that the Convention did not exist. Such a task belongs, beyond the scope of legal studies, to the realms of science and environmental ethics.

[293] Article 207

BIBLIOGRAPHY

BOOKS

Adede, O., The System for Settlement of Disputes under the United Nations Convention on the Law of the Sea, Martinus Nijhoff, 1987...320

Allonsius, David, Le régime juridique de la mer Caspienne : Problèmes actuels de droit international public, L.G.D.J, 1997...155

Amerasinghe, Principles of the institutional law of international organizations, Cambridge University Press, 1996...127

Association Eurpéenne de Droit de l'Environnement, Le Droit à l'information en matière d'environnement dans les pays de l'Union Européenne, par Presses Universitaires de Limoges, 1997...299

Association Internationale du Droit de la Mer, The Mediterranean and the Law of the Sea at the Dawn of the 21st Century, *Actes du colloque de l' Association Internationale du Droit de la Mer* (*Naples, 22 et 23 Mars 2001*), Sous la Direction de Giuseppe Cataldi, Bruyant Bruxelles 2002, 50

Attard, D.J., The Exclusive Economic Zone in International Law, Oxford University Press, 1987...156

Attfield, Robin, The Ethics of environmental concern, 2nd edition, The University of Georgia Press, 1991...186

Aust, Anthony, Modern Treaty Law and Practice, Cambridge University Press, 2000...265,266

Austin, John, The Province of Jurisprudence Determined, Lecture VI, Edited by Wilfrid E. Rumble, Cambridge University Press, 1995...55

Axelrod, Robert, The Evolution of Co-operation, Penguin Books, 1984...56

Bachelet, M., L'ingérence écologique, Frison-Roche, Paris, 1995...221

Barinaga, M., Fish money and science in Puget Sound, *Science* 247, 1990, p.631...11

Baslar, Kemal, The Concept of the Common Heritage of Mankind in International Law, Martinus Nijhoff Publishers, 1998...225,239

Béchillon, Denys de, *Qu'est-ce qu'une règle de Droit*? Editions Odile Jacob, 1997... 96

Beck, Ulrich, Risk Society, Towards a New Modernity, translated by Mark Ritter from *Riskogesellschaft: Auf dem Weg in eine andere Moderne*, SAGE Publications, 1992...196,207

Bell, Stuart & McGillivray, Donald, Environmental Law, 5th Edition, Blackstone Press, 2001...26, 248

Berger, Peter & Luckmann, Thomas, The Social Construction of Reality, Doubleday & Company Inc., 1966...71

Bettati, Mario, *Le droit d'ingérence*, Odile Jacob, 1996...220

Birnbacher, Dieter, *Verantwortung für zukünftige Generationen* translated into French by Olivier Mannoni *La responsabilité envers les generations futures*, Presses Universitaires de France, 1994...183

Birnie, Patricia & Boyle, Alan, International Law & the Environment, Second edition, Oxford University Press, 2002...48,177,184,192,205,228, 249,273,294, 295, 299,305,321

Bodin, Jean, *Six Livres de la République*, 1576...218

David A. Baldwin (ed.), Neorealism and Neoliberalism, Columbia University Press, 1993...71

Boudon, Raymond, *Le Juste et Le Vrai*, Librairie Arthème Fayard, 1995...69, 231, 233,234,236

Boudon, Raymond, *Le sens des valeurs,* Presses Universitaires de France, 1999, II De la rationalité instrumentale à la rationalité axiologique...232,234

Bourg, Dominique & Schlegel, Jean-Louis, *Parer aux risques de demain, Le principe de précaution*, Editions du Seuil, p. 2001...197

Brown, Lester R., Renner, Michael, Flavin, Christopher, Vital Signs *1997-1988*, The environmental trends that are shaping our future. Earthscan Publications Ltd. London, 1997, 23

Bull, Hedley, The Anarchical Society, Second edition, MacMillan, 1995, 52

Burke, William T., The New International Law of Fisheries, UNCLOS 1982 and beyond, Oxford University Press, 1994...242

Byers, Michael, Custom, Power and the Power of Rules, Cambridge University Press, 1999... 107

Callon, Michel, Lascoumes, Pierre & Barthe, Yannick, *Agir dans un monde incertain*, Editions du Seuil, 2001...198

Carbonnier, Jean, *Droit Civil*, Presses Universitaires de France, 1995...125

Carl J. Sindermann, Ocean Pollution: Effects on Living Resources and Humans, CRC Press, 1996...11,12

Castel, R., *La gestion des risques*, Minuit, 1982...196

Caves, Richard E. & Jones, Ronald W., World Trade and Payments, Fourth Edition, Little, Brown and Company, 1985...222

Cerclé, Alain & Somat, Alain, *Manuel de psychologie sociale*, DUNOD, 1999...97

Chamot, Céline, *La participation des ONG au système de contrôle de la Convention de Berne*, in Sandrine Maljean-Dubois (dir.), *L'effectivité du droit européen de l'environnement : Contrôle de la mise en œuvre et sanction du non-respect*, La documentation française, 2000...316

Charles, Anthony, Sustainable Fishery Systems, Blackwell Science, 2001...153, 159, 178

Chiras, Daniel D., Environmental Science, Wadsworth Publishing Co. Fifth Edition, 1998, p. 89... 7, 10

Christopherson, Robert W., Elemental Geosystems, Second edition, Prenticehall, 1998...160

Churchill, R.R. and Lowe, A.V., The Law of the Sea, Second Edition, Manchester University Press, 1988...141,239

Clark, R. B., Marine Pollution, Fourth Edition, Clarendon Press Oxford, 1997... 19,22

Cocca, A.A., The Common Heritage of Mankind: Doctrine and Principles of Space Law: An Overview (1986) 29th Collections on the Law of Outer Space...222

Coppens, Philippe, *Normes et fonction de juger*, Bruyant LGDJ, 1998...122

Daly, Herman, Steady-State Economics, Second edition, 1992, Earthscan...191

Dante, Alighieri, *Monarchia*, 1313, translated into English, Monarchy, by Prue Shaw, Cambridge University Press, 1996...58

Descartes, René, *Discours de la Méthode*, III, IV...26

De Visscher, Charles, *Problèmes d'interprétation juridiques*, 1963...122

Douglas, Mary & Wildavsky, Aaron, Risk and Culture, University of California Press, 1984...199

Dupuy, Pierre-Marie, *Droit international public*, 3e édition, Dalloz, 1995...261

Dupuy, René Jean, *Dialectiques du droit international*, Editions A. PEDONE, 1999...157

Dworkin, Ronald, Taking Rights Seriously, Harvard University Press, seventeenth printing 1999, 97, 99

Ebbesson, Jonas, Compatibility of International and National Environmental Law, Kluwer Law International, 1996...287

Edwards-Jones, Gareth, Ben Davies and Salmon Hussain, Ecological Economics, Blackwell Science, 2000... 34

Fischesser, Bernard & Dupuis-Tate, Marie-France, *Le Guide illustré de l'Ecologie*' Editions de la Martinière'1996...36

Fisher, R., Improving Compliance with International Law, University Press of Virginia, 1981...294

Frank, Thomas M., General Course on Public International Law, *Recueil des Cours*, 1993, III...230

Gehring, Thomas, Dynamic International Regimes, Peter Lang GmbH, 1994...49

Giddens, Anthony, Modernity and Self-Identity, Polity, 1991...197,200,208

Gilpin, Robert, War and Change in World Politics, Cambridge University Press, 1981

Gounelle, Max, *La motivation des actes juridiques en droit international public*, Editions A. Pédone, 1979...295

Goyard-Fabre, Simone, Jean Bodin, *Ellipses*, 1999...218

Grotius, Hugo, The Freedom of the Seas, translated from *Mare Liberum* by Ralph Van Deman Magoffin, Oxford University Press, American Branch, 1916...54

Grotius, Hugo, *De jure belli ac pacis*, 1645, translated into French by P. Pradier-Fodéré, Pressses Universitaires de France, 1999, 53, 98

Guillaume, Paul, *La psychologie de la Forme*, Flammarion, 1979...71

Gulland, J. A., Fish Stocks Assessment: A Manual of Basic Methods, Wiley-Interscience, 1983...162

Haas, Ernest B., When Knowledge is Power, University of California Press, 1990...70, 88

Habermas, Jürgen, Between Facts and Norms, translated by William Rehg from *Faktizität und Geltung*, Polity Press, 1997...148, 149,293

Hakapää, K., Marine Pollution in International Law. Material Obligations and Jurisdiction, Helsinki Suomalainen Tiedeakatemia, 1981...253

Hanley, Nick, Shögren, Jason F. & White, Ben, Environmental Economics, MacMillan Press, 1997...178

Hart, H.L.A, The Concept of Law, Second edition, Oxford University Press, 1997... 98, 105,120,298

Haufler, Virginia, Crossing the Boundary between Public and Private: International Regimes and Non-State Actors, in Volker Rittberger (ed.)... 89

Hayward, Tim, Ecological Thought, Polity Press, 1995...29,30

Hempel, Carl G., The Philosophy of Carl G. Hempel, edited by James H. Fetzer, Oxford University Press, 2001...231,232,234

Henkin, Louis, How Nations Behave? Columbia University Press, 1979...270,292,296

Hewstone, Miles & Stroebe, Wolfgang, Introduction to Social Psychology, Blackwell Publishers, Third edition, 2001...70

Higgins, Rosalyn, Problems & Process, International Law and How We Use it, Oxford University Press, 1994, 105

Hobbes, Thomas, *Leviathan,* Cambridge University Press, 1996...58

Homans, George C., Social Behavior, Its Elementary Forms, Hartcourt, 1974... 96

Hughes, David, Environmental Law, Butterworths, 1996...247

Jennings, R. Y. The Acquisition of Territory in International Law, Manchester University Press, 1963...125

Jonas, Hans, *Le principe de responsabilité*, traduit de l'allemand « *Das Prinzip Verantwortung*, 1979 » par Jean Greisch, Flammarion, 1990...193

Jourdain, Patrice, *Les Principes de la Responsabilité Civile*, Dalloz, 5e édition, 2000… 14

Kelsen, Hans, Introduction to the problems of legal theory, translated by Bonnie Litschewski Paulson and Stanley L. Paulson, Oxford University Press, 1992…120, 121, 150

Kelsen, Hans, *Théorie Générale des Normes*, traduit de *Allgemeine Theorie der Normen* par Olivier Beaud & Fabrice Malkani, Presses Universitaires de France, 1996…96

Keohane, Robert O., After Hegemony, Princeton University Press, 1984… 65, 76, 93, 101, 104

Keohane, Robert O. & Joseph S. Nye, Power and Interdependence, Second edition, Harper Collins Publishers, 1989, 55

King, T.J., Ecology, Second edition, Nelson, 1989…36

Kindt, John Warren, Marine pollution and the Law of the Sea, William S. Hein & Co. Inc., Buffalo, N.Y.1986… 24

Kiss, Alexander & Dinah Shelton, Manual of European Environmental Law, Second edition, Cambridge University Press, 1993…257

Kooijmans, P. H., The Doctrine of the equality of States, A.W. Sythhoff – Leyden, 1964…53, 218,230

Kourilsky, Philippe & Viney, Geneviève, *Le Principe de précaution, Rapport au Premier ministre*, Editions Odile Jacob, 2000…197,198,202

Kratochwil, Friedrich, The Force of prescriptions, *IO,* 38, 4, Autumn 1984…104

Kummer, Katharina, International Management of Hazardous Wastes: The Basel Convention and Related Legal Rules, Oxford University Press, 1999…49

Lalli, Carol M. & Parsons, Timothy R., Biological Oceanography, Butterworth Heinemann, Second Edition 1997, p. 209… 7

Lanfranchi, Marie-Pierre & Maljean-Dubois, Sandrine, *Le Contrôle juridictionnel sur le plan international*, in Sandrine MALJEAN-DUBOIS (dir.)

L'effectivité du droit européen de l'environnement, La documentation française, 2000...215

Lauterpacht, Hersch, Development of International Law by the International Court, Grotius Publications, 1983...306

Le Hardy, Magali, *Que reste-t-il de la liberté de la pêche en haute mer*, Institut du droit économique de la mer, Editions Pedone, 2002...243

Leopold, Aldo, A Sand County Almanac, Oxford University Press, 1949...35

Lucchini, Laurent & Michel Voelckel, Droit de la mer, Tome 2, Volume 2...116

Luhmann, Niklas, A Sociological Theory of Law, Translated by E. King & M. Albrow, Routledge & Kegan Paul, 1985...96,273

Lyster, Simon, International Wildlife Law, Cambridge University Press, 1985...168

Mairet, Gérard, *Le principe de souveraineté*, Gallimard, 1997...218

Marin-Bosch, Miguel Marin-Bosch, Votes in the UN General Assembly, Kluwer Law International, 1998...270

Meadows, Donella H., Meadows, Dennis L., Jørgen Randers, Beyond the Limits, Global collapse or sustainable future, Earthscan, 1992...184

Merrils, J.G., International Dispute Settlement, second edition, Cambridge University Press, 1996...301

Mische, P., National Sovereignty and Environmental Law, in S. Bilderbeek (ed.), Biodiversity in International law, OIS Press, 1992, Oxford...221

Mitchell, Ronald B., Compliance Theory: an Overview...295,299

Moore, Peter D., Chaloner, Bill, Scott, Philip, *Global Environmental Change*, Blackwell Science Ltd, 1996... 11

Morgenthau, Hans, Politics among Nations, Brief edition, revised by Kenneth W. Thompson, McGraw-Hill, Inc. 1993...53, 54, 59

Mumma, Albert, Environmental Law: Meeting UK and EC Requirements, McGraw-Hill Book Company, 1995...247,248

Nordquist, Myron H. & Park, Choon-ho Park, (ed.), Reports of the United States Delegation to the Third United Nations Conference on the Law of the Sea,

Occasional Paper No. 33, Law of the Sea Institute, University of Hawaii, 1983...263,275,276,281

Nordquist, Myron H., Rosenne, Shabtai & Sohn, Louis B., United Nations Convention on the Law of the Sea 1982, A Commentary, Volume V, Martinus Nijhoff Publishers, 1989...302,303,305

Odum, Eugene P., Basic Ecology, Saunders College Publishing, 1983...160

O'Neill, John, Ecology, Policy and Politics, Routledge, 1993...27

Parkin, Michael, Economics, second edition, Addison-Wesley Publishing Company, 1994...55,232

Parsons, Talcott, The Social System, Collier MacMillan Publishers, Paperback Edition, 1964...61

Parsons, Talcott & Shils, Edward, Toward a General Theory of Action, Transaction Publishers, 2001, Originally published in 1951 by Harvard University Press. ...69, 70, 102, 148

Passmore, John, Man's responsibility for nature, Duckworth, Second edition, 1980, 32

Pearce, D.W., Markandya, A. & Barbier E.B., Blueprint for a Green Economy, 1989, Earthscan...191

Peck, Connie, The United Nations as a Dispute Settlement System, Kluwer Law International, 1996...301

Pepper, David, Modern environmentalism, Routledge, 1996...28

Perelman, Chaïm, *Ethique et Droit*, Editions de l'Université de Bruxelles, 1990...236

Peretti-Watel, Patrick, *Sociologie du risque*, Armand Colin, 2000...199

Rasmusen, Eric, Games and Information, Blackwell, 1989... 81

Rawls, John, A Theory of Justice, Oxford University Press, 1973...68, 69, 70,233

Raz,, Joseph, Engaging Reason, On the Theory of Value and Action, Oxford University Press, 1999... 69,233, 235

Rèmoond-Gouilloud, Martine, *Du Droit de détruire*, Presses Universitaires de France, 1989, pp. 61-72...20, 29, 30

Rens, Ivo Rens & Jakubec, Joel (ed.), *Radioprotection et droit nucléaire*, Georg Editeur, 1998 ...10

Reuchlin, Maurice, *Psychologie*, Presses Universitaires de France, 13e édition, 1998...121

Reuter, Paul, *Le développement de l'ordre juridique internationale*, Economica, 1995...53

Rosenne, Shabtai, Developments in the Law of Treaties 1945-1986, 1989...295

Rosenne, Shabtai, The Law and Practice of the International Court of Justice, 1965...127

Rundle, Bede Rundle, Mind in Action, Clarendon Press Oxford, 1997...293

Sabel, Robbie, Procedure at International Conferences, Cambridge University Press, 1997...262,271

Sadeleer, Nocolas (ed.), *Le Principe de Précaution*, Presses Universitaires de France, 2001...204

Sands, Philippe, Principles of International Environmental Law, Manchester University Press, 1995...177

Sands, Philippe & Klein, Pierre, Bowett's Law of International Institutions, Fifth Edition, Sweet & Maxwell, 2001...270,271

Schelling, Thomas C., The Strategy of Conflict, Harvard University Press, 1960, fifteenth printing, 1995...68, 293

Schermers, Henry G. & Blokker, Niels M., International Institutional Law, Martinus Nijhoff Publishers, 1995...66, 73,263,264,271

Schmidt, M., Common Heritage or Common Burden? Clarendon Press, Oxford, 1989...226

Schotter, Andrew, Microeconomics, Harper Collins College Publishers, 1994...73

Schwarzenberger, Georg, Power Politics, 3rd edition, 1964, Stevens...57

Shaw, Malcolm N., International Law, Third edition. Cambridge University Press, 1994...244

Shelton, Dinah, Commitment and Compliance, Oxford University Press, 1999...294

Simon, Herbert A., Administrative Behavior, the Free Press, Fourth Edition, 1997...234,236

Simon, Herbert A., Models of Bounded Rationality, Volume 3 Empirically Grounded Economic Reason, The MIT Press, 1997…232,235

Snyder, Glenn H. and Diesing, Paul, Conflict among Nations, Princeton University Press, 1977… 55, 82,293

Strange, Susan, States and Markets: An Introduction to International Political Economy, Basil Blackwell, 1988, 77

Swinburne, Richard, Epistemic Justification, Oxford University Press, 2001…234

Treves, Tullio, *L'Entrée en vigueur de la Convention des Nations Unies sur le Droit de la Mer et les Conditions de son universalisme*, *Annuaire Français de Droit International*, XXXIX – 1993, Editions du CNRS… 112

Turner, Stephen (ed.) The Cambridge Companion of WEBER, Cambridge University Press, 2000…232

Vattel, Emériс de, The Law of Nations or the Principles of Natural Law, Translation of the edition of 1758 by Charles G. Fenwick, The Carnegie Institution of Washington, 1916…53, 55, 58

Villiger, Mark E., Customary International Law and Treaties, Second edition, Kluwer Law International, 1997…123

Virally, Michel, *Le Droit International en Devenir*, Presses Universitaires de France, 1990… 73, 97, 98

Wallerstein, Immanuel, The politics of the World Economy, Cambridge University Press, 1984…76

Waltz, Kenneth N., Man the State and War, Columbia University Press, 1959… 60

Weber, Max, The Methodology of the Social Sciences, translated and edited by E.A. Shils and H.A.Finch, Free Press, 1949…91

Weber, Max, *Wirtschaft und Gesellschaft*, English translation by A. M. Henderson and Talcott Parsons as 'Max Weber, The Theory of Social and Economic Organization', the Free Press, 1964…69, 231, 232,293

Weiss, Brown, E., and Jacobson H.K., Engaging Countries: Strengthening Compliance with Environmental Accords, 1998…296

Wendt, Alexander, Social Theory of International Politics, Cambridge University Press, 1999…235

Westlike, John, International Law, Cambridge, 1904... 53

White, N.D., The Law of International Organizations, Manchester University Press, p.1996...74

Young, Oran, R, International Cooperation: building regimes for natural resources and the environment, Cornell University Press, Third printing, 1993...101

Young, Oran R., International Governance: Protecting the Environment in a stateless society, Cornell University Press, 1994...73, 89

Young, Oran R., International Governance, Cornell University Press, 1994...74, 297,298

Yturriaga, J.A. de, The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea, Kluwer Law International, 1997...41,131

Zorgbibe, Charles, *Le Droit d'ingérence*, Presses Universitaires de France, 1994...220

ARTICLES

Adam, Barbara and Joost van Loon, Positioning Risk; the Challenge for Social Theory, in Barbara Adam, Ulrich Beck and Joost van Loon (ed.), The Risk Society and Beyond, SAGE Publications, 2000...199

Adede, O., Management of Environmental Disputes: Avoidance versus Settlement, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995op. cit...320

Adede, A.O., Settlement of Disputes Arising under the Law of the Sea Convention, *AJIL*, vol. 69, 1975...301

Adler, Emmanuel and Peter M. Haas, Conclusion: epistemic communities, world order, and the creation of a reflective research program, *IO*, Vol. 46, N°2, Spring 1992... 102

Adler, Emmanuel, Cognitive Evolution: A Dynamic Approach for the Study of International Relations and Their Progress, in Emmanuel Adler and Beverly Crawford, (ed.), Progress in Postwar International Relations, Columbia University Press, 1991... 103

Ago, Roberto, "Binding" advisory opinions of the International Court of Justice, *AJIL*, Vol. 85 (1991), N°3...127

Anderson, D.H., 'The Straddling Stocks Agreement of 1995-An Initial Assessment', 1996, *ICLQ* 463...115

Aréchaga, Edouardo Jiménez de, Treaty Stipulations in favor of third States, *AJIL*, vol. 50 (1956)...280

Attaran, Amir Donald R. Roberts, Chris F. Curtis, and Wenceslaus L. Klima, Balancing Risks on the Backs of the Poor. *Nature Medicine* 6 (2000)...201

Attfield, Robin, Silvan, Fox and Deep Ecology: A View from the Continental shelf, *Environmental Values*, 2, 1 (1993)...30

Axelrod, Robert and Robert O. Keohane, Achieving cooperation under anarchy: Strategies and institutions, in David A. Baldwin (ed.), Neorealism and Neoliberalism, Columbia University Press, 1993...56, 82

Bacot, Guillaume, *Réflexions sur les clauses qui rendent obligatoires les avis consultatifs de la C.P.J.I et de la C.I.J., R GDIP*, vol. 84 (1980)...127

Baker, P. J., The Doctrine of Legal Equality of States, *BYIL*, vol. 4 (1923-1924)...54

Balton, David A., The Bering Sea Doughnut Hole Convention, in Olav Schram Stokke, (eds.) Governing High Seas Fisheries, Oxford University Press, 2001...136

Baxter, R.R., Treaties and Custom, The Hague Academy, *Recueil des Cours* 1970-I... 107

Beitz, C.R., Justice and International Relations, in Beitz C.R. *et al.*, (ed.) International Ethics, Princeton University Press...222

Beyerlin, Ulrich, New Developments in the Protection of the Marine Environment: Potential Effects of the Rio Process, *ZAÖRV*, 1995...209

Biersteker, Thomas J., Constructing Historical Counterfactuals to Assess the Consequences of International Regimes, in Volker Rittberger (ed.), Regime Theory and International Relations, Oxford University Press, 1995...91, 92

Bodansky, Daniel, The Legitimacy of International Governance: A Coming Challenge for International Environmental Law?, *AJIL*, 93 (1999)...261,298

Bodansky, Daniel, The United Nations Framework Convention on Climate Change: A Commentary, *Yale Journal of International Law*, Vol. 18:439, 1993...140

Bodansky, Daniel, The Precautionary Principle in US Environmental Law, in Timothy O'Riodan & James Cameron, Interpreting Precautionary Principle, Earthscan, 1994...199

Boehmer-Christiansen, Sonja, The Precautionary Principle in Germany – enabling Government, in Timothy O'Riordan & James Cameron (ed.), Interpreting Precautionary Principle, Earthscan, 1994...193,196

Boyle, Alan, The Southern Bluefin Tuna Arbitration, *ICLQ*, Vol. 50, April 2001...308

Boyle, Alan, Dispute Settlement and the Law of the Sea Convention: Problems of fragmentation and jurisdiction, *ICLQ*, volume 46, 1997...303

Boyle, Alan, Problems of Compulsory Jurisdiction and the Settlement of Disputes Relating to Straddling Fish Stocks, *The International Journal of Marine and Coastal Law*, Volume 14, Number 1, March 1999...303

Boyle, Alan, Land-based sources of marine pollution, *Marine policy*, January 1992...197

Bretimeier, Helmut and Klaus Dieter Wolf, Analysing Regime Consequences : Conceptual Outlines and Environmental Explorations, in Volker Rittberger (ed.), Regime Theory and International Relations, Clarendon Press, 1993... 93

Burhenne, Wolfgang E., The Role of NGOs, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995...315

Buzon, B., Negotiating by consensus: Developments in Technique at the United Nations Conference on the Law of the Sea, 75 *AJIL* (1981)...271,272

Calman, Kenneth & Denis Smith, Works in theory but not in practice? The role of the precautionary principle in public health policy, *Public Administration*, an international quarterly, Volume 79 Number 1, 2001...199

Cameron, James, Compliance, Citizens and NGOs, in James Cameron, Jacob Werksman & Peter Roderick (ed.), Improving Compliance with International Environmental Law, Earthscan, 1996...316

Cazala, Julien, *Principe de Précaution et procédure devant le juge international*, in Charles Leben & Joe Verhoeven (ed.), Le principe de précaution: Aspects de droit international et communautaire, Editions Panthéon-Assas, 2002...204,205

Charney, Jonathan I., The Implications of expanding international dispute settlement systems: The 1982 Convention on the Law of the Sea, *AJIL*, vol. 90 (1996)...305

Charney, Jonathan I., Universal International Law, *AJIL*, 1993, Vol. 8, ...113

Chazournes, Laurence Boissons de, *Variations juridiques sur le thème de l'ingérence écologique*, *Nouveaux cahiers* de l'Institut Universitaire d'études du développement, N° 3, 1995...221

Chayes, Antonia Handler& Abraham Chayes and Ronald B. Mitchell, Active Compliance Management in Environmental Treaties, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995...295,299

Chayes, Abram and Antonia Handler Chayes, On compliance, *IO*, 47, 2, Spring 1993... 81,294

Chopra, J. & Weisse, T.G., Sovereignty is No Longer Sacrosanct: Codifying Humanitarian Intervention (1992) 6 *Ethics & International Affairs*...219

Churchill, Robin, Sustaining Small Cetaceans: A Preliminary Evaluation of the Ascobans and Accobams Agreements, in Alan Boyle and David Freestone (eds.), International Law and Sustainable Development, Oxford University Press, 1999...171

Coase Ronald, The Problem of Social Cost, *Journal of Law and Economics*, Vol. 3, 1960... 80

Czempiel, Ernest-Otto, Governance and Democratization, in James N. Rosenau and Ernest-Otto Czempiel (eds.), Governance without Government. Cambridge University Press, 1992...298

Dall'Aglio, Andrea, *Ingérence écologique*, Un débat, *Nouveaux cahiers* N° 3, 1995...221

Daan, N., Multispecies assessment issues for the North Sea, in E.L. Pikitch, D.D. Huppert & M.P. Sissenwine (ed.), Global Trends: Fisheries Management, 1997...163

De Klemm, Cyrill, *Les ONG et les Experts scientifiques*, in Claude Imperiali (ed.), L'effectivité du droit international de l'environnement, Economica, 1998...316

Demeulenaere, Pierre, *Normativité et rationalité dans l'analyse sociologique de l'action*, in Raymond Boudon, Pierre Demeulenaere, Riccardo Viale (ed.), L'explication des normes sociales, Presses Universitaires de France, 2001...236

Downs, George W., David M. Roke, and Randolph M. Siverson, Arms Races and Cooperation, in Kenneth A. Oye (ed.), Cooperation under Anarchy, Princeton University Press, 1986... 82

Duclos, Denis, *La construction sociale du risque, le cas des ouvriers de la chimie face aux dangers industriels, Revue française de sociologie*, XXVIII, 1 (1987)...199

Dupuy, Pierre-Maire, *Le principe de précaution règle émergente du droit international général*, in Charles Leben et Joe Verhoeven (ed.), *Le principe de précaution: Aspects de droit international et communautaire*, Editions Panthéon-Assas, Paris, 2002...217

Elferink, Alex G. Oude, The Sea of Okhotsk Peanut Hole De Facto Extension of Coastal State Control, in Olav Schram Stokke (ed.) Governing High Seas Fisheries, Oxford University Press, 2001...131, 172

Faulk, R., The Interplay of Westphalia and Charter Conceptions of International Legal Order, in R. Faulk & C. Black (ed.), The Future of the International Legal Order, vol. 1 (1969)...218

Feinberg, Joel, 'The Rights of Animals and Unborn Generations', in W. T. Blackstone, (ed.), Philosophy and Environmental Crisis, University of Georgia Press, 1974... 34

Fischler, Claude, *Alimentation contemporaine et perception du risqué*, in Université de tous les savoirs, *La nature et les Risques*, Poches Odile Jacob, 2002...199

Fleischhauer, Carl-August, The Relationship between the International Court of Justice and the Newly Created International Tribunal for the Law of the Sea in Hamburg, *Max Planck Yearbook of United Nations Law*, 1 (1997)...306

Fleming, David, The Economics of Taking Care: An Evaluation of the Precautionary Principle, in David Freestone and Ellen Hey (ed.), The Precautionary Principle and International Law, Kluwer Law International, 1996...202

Franck, Thomas M., The Emerging Right to Democratic Governance, *AJIL*, 86 (1992)...261

Franck, Thomas M. and Nigel S. Rodley, After Bangladesh: The Law of Humanitarian Intervention by Military Force, *AJIL*, Vol. 67 (1973)...220

Freestone, David, Caution or Precaution: "A Rose By Any Other Name...?" *Yearbook of International Environmental Law*, Volume 10 (1999)...98, 99

Freestone, David, The Challenge of Implementation: Some Concluding Notes, in Alan Boyle and David Freestone (ed.), International Law and Sustainable development, Oxford University Press, 1999...319

French, Hilary, The Role of non-State Actors, in Jacob Werksman (ed.), Greening International Institutions, Earthscan, 1996...315

Freund, Julien, *La rationalization du droit selon Max Weber*, in Formes de rationalité en droit, *Archives de philosophie du droit*, tome 23, Sirey, 1978…233

Gehring, Thomas, International Environmental Regimes: Dynamic Sectoral Legal Systems, *YIEL*, vol. 1 (1990)...322

Gerlache, Jacques de, *Entreprises: pour intégrer précaution et proportion*, in Edwin Zaccai & Jean Noel Missa (ed.), *Le Principe de Précaution*, Editions de l'Université de Bruxelles, 2000…203

Glennon, M. J., Has International Law Failed the Elephant? *AJIL*, vol. 84 (1990)…218

Glennon, Michael J., Sovereignty and Community after Haiti: Rethinking the collective use of force, *AJIL*, vol. 89 (1995)…220

Godard, Olivier, *De la nature du principe de précaution*, in Edwin Zaccai & Jean Noel Missa (ed.), Le Principe de Précaution, Editions de l'Université de Bruxelles, 2000…202,205

Goffi, Jean-Yves, *Le principe de précaution: un moment nouveau dans la philosophie de la technique*, in Edwin Zaccai & Jean Noel Missa (ed.), *Le Principe de Précaution*, Editions de l'Université de Bruxelles, 2000…206

Goklany, Indur M., Applying the Precautionary Principle in a Broader Context, in Julian Morris (ed.),Rethinking Risk and the Precautionary Principle, 2000, Butterworth-Heinemann…201

Goklany, Indur M., Strategies to Enhance Adaptability: Technological Change, Economic Growth and Free Trade, *Climate Change* 30 (1995)…202

Goklany, Indur M., The Precautionary Principle, A Critical Approach of Environmental Risk Assessment, CATO Institute, 2001…201

Goldemberg, José & Durham, Eunice Ribeiro, Amazônia and National Sovereignty, *International Environmental Affairs*, vol. 2 N°1, Winter 1990…221

Golding, Martin, Obligations to future generations, *Monist* 56 (1972)…183

Gollier, Christian, *Economie du Principe de précaution*, in François Ewald, Christian Gollier, Nocolas Sadeleer (ed.), *Le Principe de Précaution*, Presses Universitaires de France, 2001…203

Graefrath, Bernhard, *Ingérence et droit international*, *Les nouveaux cahiers* de l'Institut Universitaire d'études du Développement, *Dérives humanitaires*, 1994, N° 1 …221

Gray, John S., Integrating Precautionary Scientific Methods into Decision-Making, in David Freestone and Ellen Hey (ed.), The Precautionary Principle and International Law, Kluwer Law International, 1996....203

Gresham, Zano O. and James M. Schurz, Dispute avoidance and dispute settlement in international environmental agreements and multilateral trade agreements, UNEP, 1995 ...320

Grieco, Joseph M., Anarchy and the Limits of Cooperation, *IO*, 1988... 56

Grieco, Joseph M., Anarchy and Limits of Cooperation, in David A. Baldwin, (ed.) Neorealism and Neoliberalism, op.cit. 57

Grzegorczyk, Christophe, *La théorie générale des valeurs et le droit, Bibliothèque de philosophie du droit*, volume XXV, Libraire Générale de Droit et de Jurisprudence, 1982...97

Haas, Ernest B., Words can hurt you; or, who said what to whom about regimes, in Krasner (ed.), International regimes, Cornell University Press, 1983...72

Haas, Ernst B., Why collaborate? Issue-Linkage and International Regimes, *World Politics*, April 1980...60, 102

Haas, Peter M., Compliance Theories Choosing to Comply: Theorizing from International Relations and Comparative Politics, in Dinah Shelton (ed.), Commitment and Compliance...294,295

Haas, Peter M., Epistemic Communities and the Dynamics of International Environmental Cooperation, in Volker Rittberger, (ed.), Regime Theory and International Relations, Clarendon Press, 1993...88

Haas, Peter M., Do regimes matter? Epistemic Communities and Mediterranean Pollution Control, *IO*, 1989, 94

Haggard, Stephen and Beth A. Simmons, Theories of international regimes, *IO* ,1987,

Handl, Günther, in Winfried Lang (eds.), Sustainable Development and International Law, Graham & Trotman: Martinus Nijhoff, 1995...179

Henkin, Louis, International Law: Politics, Values and Functions, General Course on Public International Law, *Recueil des Cours*, The Hague Academy of International Law, 1989, IV Tome 216...52, 69

Higgins, Rosalyn, Policy Considerations and the International Judicial Process, *ICLQ*, vol. 17, Part 1, January 1968...306

Hobe, Stephen, Global Challenges to Statehood: The Increasingly Important Role of Nongovernmental Organizations, *Indiana Journal of Global Legal Studies*, vol. 5, Fall 1997...219,314, 317

Hunt, Jane, The Social Construction of Precaution, in Timothy O'Riordan & James Cameron (ed.), Interpreting Precautionary Principle, Earthscan, 1994...199

Hurrel, Andrew, International Society and the Study of Regimes, A Reflective Approach, in Volker Rittberger (ed.), Regime Theory and International Relations, Oxford University Press, 1995, 68

Ikenberry, G. John & Charles A. Kupchan, Socialization and hegemonic power, *IO*, 44, 3, Summer 1990, 76

Jervis Robert, Cooperation under the Security Dilemma, *World Politics*, January 1978, No.2...85

Jacobson, J. L. & A. Reiser, The Evolution of Ocean Law, *Scientific American*, November 1998...156

Jennings, Judge, Law-Making and Package Deal, in *Mélanges Offerts à Paul Reuter*, 1981...264

Jennings, Robert, The Role of the International Court of Justice in the Development of International Environment Protection Law, *RECIEL*, vol.1 (1992), number 3 ...306

Jenks, C. Wilfred, Unanimity, The Veto, Weighted Voting, Special and Simple Majorities and Consensus as Modes of Decision in International Organizations, in Cambridge Essays in International law, Essays in Honour of Lord McNair 48 (1965)...271

Jordan, Andrew and Jacob Werksman, Financing Global Environmental Protection, in James Cameron, Jacob Werksman & Peter Roderick (ed), Improving Compliance with International Environmental Law, Earthscan, 1996...319

Joyner, C.C & P.N. De Cola, Chile's Presencial Sea proposal: Implications for the Straddling Stocks Convention, 24 *Ocean Development and International Law* 99 (1993)...131

Juda, Lawrence, Considerations in Developing a Functional Approach to the Governance of Large Marine Ecosystems, *ODIL*, 30, 1999...159, 162

Kelsen, Hans, The Principle of Sovereign Equality of States as a Basis for International Organization, *Yale Law Journal*, vol. 53 (1944)...218

Kibel, Paul Stanton, Alone at Sea: Chile's Presencial Ocean Policy, *Journal of Environmental Law*, Vol. 12 (2000), N°1...41, 130, 131

Kingsbury, Benedict, Sovereignty and Inequality, *EJIL*, Vol. 9, 1998...219

Keohane, Robert O., The demand for international regimes, in Krasner (ed.), International regimes, Cornell University Press, 1983...75, 79, 87

Keohane, Robert O., The Analysis of International Regimes, in Volker Rittberger (ed.), Regime Theory and International Relations, Clarendon Press, 1993... 67, 93

Koskenniemi, Martti, Breach of Treaty or Non-compliance? Reflections on the Enforcement of the Montreal Protocol, *YIEL*, vol. 31 (1992)...300,322

Koskenniemi, Martti, New Institutions and procedures for Implementation Control and reaction, in Jacob Werksman (ed.), Greening International Institutions, Earthscan, 1996...300

Koskenniemi, Martti, The Future of Statehood, 32 *Harvard International Law Journal* (1991)...219

Krasner, Stephen D., Regimes and the limits of realism: regimes as autonomous variables, *IO*, 36, 2, Spring 1982...89

Krasner, Stephen D., Structural Causes and Regime Consequences: Regimes as Intervening Variables, in Krasner (ed.), International regimes, Cornell University Press, 1983...60,90,102,103

Kratochwil, Friedrich and John Gerard Ruggie, International organization: a state of the art on the art of the state, *IO*, 1986... 60,67

Kratochwil, Friedrich and John Gerard Ruggie, International Organization: a state of the art on an art of the state, *IO,*, 1986... 64

Kuhlman, D. M., & A. Marshello, Individual differences in game motivation as moderators of preprogrammed strategies effects in prisoner's dilemma. *Journal of Personality and Social Psychology*, 32 (1975)... 70

Lange Paul A. M. Van, & Carsten K. W. De Dreu, Social Interaction: Cooperation and Competition, in Miles Hewstone and Wolfgang Stroebe (ed.), Social Psychology, Blackwell Publishers, Third edition, 2001...55

Lascoumes, Pierre, *La précaution comme anticipation des risques résiduels et hybridation des la responsabilité, L'Année sociologique, Etudes sur le risque et la rationalité,* Volume 46/1996- N°2...196, 203

Lauterpacht, Eli Sovereignty – Myth or reality? *International Affairs* vol.73, No.1(1997) ...219

Lee, Luke T., The Law of the Sea Convention and Third States, *AJIL,* 1983, Vol. 77...277

Lipson, Charles, Why are some international agreements informal ? *IO*, 45, 4, Autumn 1991...294

Lisa L. Martin, Interests, power, and multilateralism, *IO*, 46, 4, Autumn 1992...84

List, Martin & Volker Rittberger, Regime Theory and International Environmental Management, in Andrew Hurrell and Benedict Kingsbury (eds.), The International Politics of the Environment, Oxford University Press, 1992...67, 235

Lutgen, G.L., Fisheries for the Halibut, 25 *Environmental Policy and Law* 223 (1996)...131

Malone, L. A., Green Helmets: A Conceptual Framework for Security Council Authority in Environmental Emergencies, (1996) 17 *Michigan Journal of International Law*...221

McClearly, R.M., The International Communities Claim to Rights in Brazilian Amazonia (1991) 39 *Political Studies*...222

McDougal, Myres, The Hydrogen Bomb Tests and the International Law of the Sea, *AJIL*, 1955...49, 105

McGee, W. & K. Zimmerman, The Deforestation of the Brazilian Amazon: Law, Politics and International Cooperation (1990) 21/3 *University of Miami Inter-American Law Review*...222

Meltzer, Evelyne, Global Overview of Straddling and Highly Migratory Fish Stocks: The Nonsustainable Nature of High Seas Fisheries, *ODIL*, Volume 25, 1994...173-2

Mensah, Thomas, The International Legal Regime for the Protection and Preservation of the Marine Environment from Land-based Sources of Pollution, in Alan Boyle and David Freestone (ed.) International Law and Sustainable Development, Oxford University Press, 2000... 18,42

Michel, Ronald B., Compliance Theory: an Overview, in James Cameron, Jacob Werksman & Peter Roderick (ed.), Improving Compliance with International Environmental Law, Earthscan, 1996…294

Miller, Henry I. and Gregory Conko, The Perils of Precaution, Why Regulators' "Precautionary Principle" Is Doing More Harm Than Good, Policy Review, June & July 2001…203

Moltke, Konrad von, The Relationship between Policy, Science, Technology, Economics and Law in the Implementation of the Precautionary Principle, in David Freestone and Ellen Hey (ed.), The Precautionary Principle and International Law, Kluwer Law International, 1996…206,207,208

Moltke, Konrad von, The *Vorsorgeprinzip* in West German Environmental Policy, Institute for European Environmental Policy, February 1987…193

Morin-Bosch, M., How nations vote in the General Assembly of the United Nations, *International Organization*, 41, (1987)…271

Moore, G.E., 'The conception of intrinsic value', in Philosophical Studies, Routledge & Kegan Paul, 1922…27

Mormont, Marc, *Sociologie de la précaution*: Risques et connaissances pertinentes, in Zaccai & Jean Noel Missa (ed.), *Le Principe de Précaution*, Editions de l'Université de Bruxelles, 1994…196

Munck, Jean de , *Normes et procédures : les coordonnées d'un débat*, in Jean de Munck and Marie Verhoeven (ed.), *Les mutations du rapport à la norme, Un changement dans la modernité* ? De Boeck Université, 1997…184,273

Naess, Arne, 'Identification as a Source of Deep Ecological Attitudes', in Michael Tobias (ed.), *Deep Ecology*, Avant Books, second edition, 1988…27, 28, 30

Naess, Arne in 1973, 'The Shallow and the Deep, Long-Range Ecology Movements', *Inquiry*, 16(1973)… 28

Neuray, J. F., *Le droit à l'environnement et la liberté du commerce et de l'industrie. Réflexions sur un nouveau conflit de normes*, Rev. Dr. ULB, N°12, 1995…202

Noiville, Christine et Pierre-Henri Gouyon, *Principe de précaution et organismes génétiquement modifies. Le cas du Maïs transgénique*, in Philippe Kourilsky & Geneviève Viney, *Le Principe de précaution, Rapport au Premier ministre*, Editions Odile Jacob, 2000…199

Nollkaemper, André, "What You Risk Reveals What You Value" and Other Dilemmas Encountered in the Legal Assault on Risk, in Freestone and Hey (ed.) The Precautionary Principle and International Law, Kluwer Law International, 1996... 97,203,204

Nollkaemper, André, Balancing the Protection of Marine Ecosystems with Economic Benefits from Land-Based Activities: The Quest for International Legal Barriers, *ODIL*, 17:153-179, 1996...174

Norton, Bryan, 'Ecological Health and Sustainable Resource Management', in Robert Costanza (ed.), Ecological Economics, Columbia University Press... 36

Norton, Bryan, Sustainability, Human Welfare, and Ecosystem Health, *Environmental Values* 1 (1992)...191

Nowrot, Karsten, Legal Consequences of Globalization: The Status of Non-Governmental Organizations Under International Law, *Global Legal Studies Journal*, Indiana University, 1999, Vol. 6...102,314

Okowa, Phoebe N., Procedural obligations in international environmental agreements, *BYIL,* 1996...273

Opp, Karl-Dieter, How do Norms Emerge? In Raymond Boudon, Pierre Demeulenaere, Riccardo Viale (ed.), L'explication des normes sociales, Presses Universitaires de France, 2001... 96

Orellana, M.A., The Swordfish Dispute between the EU and Chile at the ITLOS and the WTO. *Nordic Journal of International Law*, 2002, vol.71 N°1...308

Osiander, Andreas, Sovereignty, International Relations, and the Westphalen Myth, *IO* 55, 2, Spring 2001...218

Oxman, Bernard H. The Rule of Law and the United Nations Convention on the Law of the Sea, *EJIL*, Vol. 7, 1996...282

Oxman, Bernard H., The Duty to Respect Generally Accepted International Standards, 24 *New York University Journal of International Law and Politics*, 1991...143

Oye, Kenneth A., Explaining Cooperation under Anarchy, *World Politics*, Oct.1985... 82

Peezy, John, Sustainability: An Interdisciplinary Guide, *Environmental Values* 1 (1992)...183,191

Platzöder, Renate, Substantive Changes in a Multilateral Treaty before its Entry into Force: The Case of the 1982 United Nations Convention on the Law of the Sea, *EJIL,* vol.4, 1993, N°3, 110

Poirier, René, *Rationalité juridique et rationalité scientifique*, in *Archives de philosophie du droit*, Tome 23 Formes de rationalité en droit, Sirey 1978…231

Ponce-Nava, Diana, Capacity-Building in Environmental Law and Sustainable Development, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995…319

Postel, Sandra, Carrying capacity: Earth's Bottom Line, in Robert N. Wells, Jr. (ed.) Law, Values, and the Environment, The Scarecrow Press, 1996

Powell, Robert, Absolute and Relative gains in International Relations Theory, in David A. Baldwin, (ed.) Neorealism and Neoliberalism…57

Pravdic, V., Environmental Capacity- Is a New Scientific Concept Acceptable as a Strategy to Combat Marine Pollution? 16 *Marine Pollution Bulletin* (1985), pp. 295-296 …9

Princen, Thomas, Finger, Matthias & Jack Manno, Nongovernmental Organizations in World Environmental Politics, *International Environmental Affairs*, vol. 7 N°1, Winter 1995…317

Puchala, Donald J. & Raymond F. Hopkins, International Regimes: lessons from inductive analysis, in, Krasner (ed.), International regimes, Cornell University Press, 1983….62,72

Ouéré, Louis, *La cognition comme action incarnée*, in Anni Borzeik, Alban Bouvier, Patrick Pharo, (ed.), *Sociologie et connaissance Nouvelles approches cognitives*, CNRS Editions, 1998…234

Quéré, Louis, *Le schématisme de la norme d'un point de vue sociologique*, in La Querelle des normes, *Cahiers de philosophie politique et juridiques*, N° 27, 1995, Presses Universitaires de Caen, 1995, 97

Redclift, Michael, Sustainable Development: Needs, Values, Rights, *Environmental Values* 2 (1993)…191

Redgwell, Catherine, Protection of Ecosystems under International Law: Lessons from Antarctica, in Alan Boyle and David Freestone (eds.) International Law and Sustainable Development, Oxford University Press, 1999…168

Reenen, W. van, Rules of Reference in the New Convention on the Law of the Sea, in particular in connection with the Pollution of the Sea by Oil from Tankers, 12 *Netherlands Yearbook of International Law*, 25 (1981)...140

Rehbinder, E., Precaution and sustainable development, two sides of the same coin; in A. Kiss & F. Burhenne-Guilmin (ed.) A Law for the Environment: Essays in honour of Wolfgang E. Burhenne, IUCN-The World Conservation Union, 1994...203

Reisman, W. Michael, Sovereignty and human rights in contemporary international law, *AJIL*, vol. 84 (1990)...220

Rittberger, Volker and Michael Zürn, Towards Regulated Anarchy in East-West Relations: Causes and Consequences of East-West Regimes, in Rittberger (ed.), International Regimes in East-West Politics, 1990... 91

Roberts, D.R. et al. DDT, Global Strategies, and a Malaria Control Crisis in South America, *Emerging Infectious Diseases* 3 (1997)...200

Roberts D.R., S. Manguin, and J. Mouchet, DDT House Spraying and Re-Emerging Malaria, *Lancet* 356 (2000)...200

Rodgers, William H., Jr. Benefits, Costs and Risks: Oversight of Health and Environment Decisionmaking, *Harvard Environmental Law Review*, 4 (1980)...201,203,204

Rolston III, Holmes, 'Duties to Endangered Species', in Robert Elliot, (ed.), *Environmental Ethics*, Oxford University Press, 1995... 36

Rosenau, James N., Governance, Order, and Change in World Politics, in James N. Rosenau and Ernest-Otto Czempiel (eds.), Governance without Government, Cambridge University Press, 1992...298

Rosenne, Shabtai, Establishing the International Tribunal for the Law of the Sea, *AJIL*, vol. 89 (1995)...305

Routley, Richard and Val Routley, 'Against the Inevitability of Human Chauvinism', in Robert Elliot (ed.), Environmental Ethics, Oxford University Press, 1995, 27

Ruggie, John G., International Responses to technology: Concepts and Trends', *IO*, 29 (1975)...60, 235

Sachariev, Kamen, Promoting Compliance with International Environmental Legal Standards: Reflections on Monitoring and Reporting Mechanisms, in *YIEL*, vol. 2 (1991)...299

Sand, Peter, H., Trusts for the Earth: New International Financial Mechanisms for Sustainable Development, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995...317

Sands, Philippe, Compliance with International Environmental Obligations: Existing International Legal Arrangements, in James Cameron James Cameron, Jacob Werksman & Peter Roderick (ed.), Improving Compliance with International Environmental Law, Earthscan, 1996...297

Scheneider, J.J. Kay & E., Embracing complexity: The challenge of the ecosystem concept, *Alternatives*, 20 (1994)...161

Schachter, Oscar, In Defense of International Rules on the Use of Force, *University of Chicago Law Review*, 1986...220

Schreuer, Christopher, The waning of the Sovereign state: Towards a New paradigm for International Law, *European Journal of International Law*, vol. 4, 1993, N° 4...219

Sessions, George, 'Ecological Consciousness and Paradigm Change', in Michael Tobias, ed., *Deep Ecology*, Avant Books, second edition, 1988... 28

Setbon, Michel, *Le cas du sang contaminé confronté au principe de précaution*, in Philippe Kourilsky, Geneviève Viney, *Le Principe de précaution, Rapport au Premier ministre*, Editions Odile Jacob, 2000, Annexe 4...198

Shelton, Dinah, Law, Non-Law and the Problems of 'Soft Law', in Dinah Shelton (ed.), Commitment and Compliance, Oxford University Press, 1999...296

Silveira, Mary Pat Williams, in Winfried Lang (eds.),Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995...179

Singer, Peter, 'Not for Humans only', in K. E. Goodpaster and K. M. Sayre, (ed.), Ethics and Problems of the 21st Century, University of Notre Dame Press, Indiana, 1979... 34

Sjöberg, Helen, The Global Environmental Facility, in Jacob Werksman (ed.), Greening International Institutions, Earthscan, 1996...317

Snidal, Duncan, Relative Gains, in David A. Baldwin (ed.), Neorealism and Neoliberalism, Columbia University Press, 1993... 76

Sober, Elliott, 'Philosophical Problems for Environmentalism', in Robert Elliot (ed.), *Environmental Ethics*, Oxford University Press, 1995... 29

Sohn, Louis B. Voting Procedures in United Nations Conferences for the Codification of International Law, *AJIL*, vol. 69 (1975)...270

Suganami, Hidemi, Grotius and International Equality, in Hedley Bull, Benedict Kingsbury and Adam Roberts (ed.), Hugo Grotius and International Relations, Clarendon Press, 1990... 54

Stein, Arthur A., Coordination and collaboration: regimes in an anarchical world, in Stephen D. Krasner, (ed.) International Regimes, Cornell University Press, 1995... 58,86,94

Stokke, Olav Schram, The Loophole of the Barents Sea Fisheries Regime, in Olav Schram Stokke (ed.) Governing High Seas Fisheries, Oxford University Press, 2001...136, 173

Stone, Christopher D., Can the Oceans be Harboured? A Four Step Plan for the 21st Century, Review of European Community and International Environmental Law (*RECIEL*), Volume 8, Issue 1, 199...178

Strange, Susan, Cave! hic dragones, in Krasner (ed.), International regimes, Cornell University Press, 1983.... 92

Sullivan, M.S., The Case in International Law for Canada's Extension of Fisheries Jurisdiction Beyond 200 Miles, 28 Ocean Development and International Law 203 (1997)... 41,131

Sutherland, William M., Management, Conservation, and Cooperation in EEZ Fishing: The Law of the Sea Convention and the South Pacific Forum Fisheries Agency, *Ocean Development and International Law*, Volume 18, Number 6, 1987...32

Suy, Eric, Consensus, in R. Bernhardt, Encyclopedia of Public International Law, 1992, vol. 1...277

Széll, Patrick, The Development of Multilateral Mechanisms for Monitoring Compliance, in Winfried Lang (ed.), Sustainable Development and International Law, Graham & Trotman/Martinus Nijhoff, 1995...312

Tomczak, M., Jr. Defining marine pollution, *Marine Policy,* October 1984, pp. 311-322 ...12

Toope, Stephen, J. Emerging patterns of Governance and International law, in Michael Byers (ed.), The Role of Law in International Politics, Oxford University Press, 2000...297

Treves, Tullio, The Law of the Sea Tribunal: Its Status and Scope of Jurisdiction after November 16, 1994, *ZAÖRV*, 1995...304

Vagts, Detlev F., Treaty Interpretation and the New American Ways of Law Reading, *EJIL*, Vol.4, 1993

Verwey, W.D., Humanitarian Intervention under International Law, *Netherlands International Law Review*, vol. XXXII, 1985/3…220

Vicuna, Francisco Orrego, From the 1893 Bering Sea Fur Seals Case to the 1999 Southern Bluefin Tuna cases: A Century of Efforts at Conservation of the Living Resources of the High Seas, *YIEL*, Vol.10 (1999)…215

Vicuna, F. O., The Presencial Sea: Defining Under International Law Coastal States' Specific Interest in High Seas Fisheries and Other Activities, *German Yearbook of International Law*, 35 (1993)…41, 131

Vierdag, E. W., The Law Governing Treaty Relations between Parties to the Vienna Convention on the Law of Treaties and States not Party to the Convention, *AJIL*, 1982…279

Vignes, Daniel, *Le régime de la pêche maritime dans l'Antarctique*, in Daniel Vignes, Giuseppe Cataldi et Rafael Casado Raigon (ed.), *Le Droit International de la Pêche Maritime*, Editions de l'Université de Bruxelles, 2000…168

Waltz, Kenneth N., Anarchic Orders and Balances of Power, in Robert O. Keohane (ed.), Neorealism and its Critics, Columbia University Press, 1986…56, 58

Werksman, Jacob The Conference of Parties to Environmental Treaties, in Jacob Werksman (eds.) Greening International Institutions, Earthscan Publications, 1996…140

Yankov, Alexander, "The Law of the Sea Conference at Crossroads", 18 *Virginia Journal of International Law*, 1977…141

Yankov, Alexander The Law of the Sea Convention and Agenda 21: Marine Environmental Implications, in Alan Boyle and David Freestone (ed.), International Law and Sustainable Development, Oxford University Press, 1999…42, 47,141,189

Young, Oran R., Regime Dynamics: the Rise and Fall of International Regimes, in Krasner (ed.), International regimes, Cornell University Press, 1983… 67, 87, 92

Young, Oran R., "International Regimes: Problems of Concept Formation", *World Politics*, April 1980…60

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