

4 Promotion and Management of Marine Fisheries in Brazil

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Summary

This report analyzes Brazilian marine fisheries policy and law during the last four decades with a view to understanding the management of marine fisheries and its relation with various stakeholders including environmental protection agencies in the coastal zone and exclusive economic zone (EEZ) of Brazil.

It concludes that policies and laws related to fisheries are more focused on economic than ecological concerns.

In the coastal zones fish resources are largely overexploited. This is due to the basic difference of interests between the production and environmental sector which is reflected in diverging demands on the coastal zone and a conflict between the artisanal and industrial fishing industry. In view of the constitutional classification of the Brazilian coast as a national patrimony, coastal management must find a way to accommodate economic and social aspects with more effective resource preservation. Therefore, better management tools as well as the participation of stakeholders in the process of making and applying

rules are of fundamental importance (for coastal management). It is noted throughout the report that Brazilian society and government are making progress towards the participatory management of fisheries, although this is still a slow and complex process.

Resources in the EEZ are largely exploited by other nations. Hence, Brazil actively promotes the enlargement of its national fleet in order to reserve the resources for its own benefit. However, care must be taken not to develop overcapacity of catch. Capacity must align with catch quantities in line with sustainable use of resources.

A case study on the planning and evolution of a Marine Protected Area (MPA) in the south of the country through participative management shows that the country has great potential to improve fisheries management, find its way to sustainable development and reach its obligations according to policies and rules expressed in national legislation and important international treaties.

I. Environmental and socio-economic background

Brazil has a long coast of approximately 8,500 km with numerous islands, making a total of 3.5 million km² of Exclusive Economic Zone (EEZ) that goes from Cape Orange (5°N) to Chui (34°S), and which is located mostly within tropical and subtropical regions (CNIO, 1998). The environmental conditions of the ocean within Brazil's EEZ are basically determined by

three currents: (1) the north-east current off the northern coast of Brazil; (2) the Brazilian current that goes south, both resulting from the South Equatorial Current; and (3) the Malvinas current. The dominant tropical and subtropical characteristics contribute to the lack of abundant fish stocks, which explains fishing effort being focused on those few species that offer

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conditions that support a profitable economic activity. The immediate concern, in the absence of efficient forms of management, has been the depletion and drop

1. State of the relevant fisheries resources²

The fisheries statistics currently available in Brazil are not especially useful because there are many difficulties in gathering data due to the precarious structure, not only of the government, but also of scientific institutions. The lack of a proper fisheries management organization and the strong presence of artisanal fishing, which makes production more difficult to control, are other obstacles to effective data collection. Nevertheless, efforts are being made to gather more information and to find organizations in the sector that might be able to acquire more effective statistics.

According to a study by José Dias Neto and Simão Marrul Filho in July 2003, Brazil's main fish resources are the following:

Camarão-rosa da Costa Norte (*Farfantepenaeus subtilis* and *F. brasiliensis*)

The Camarão-rosa da Costa Norte (Pink north coast shrimp) is the main fish resource of Brazil's northern coast. Until 1996, it was considered to be one of the only resources for which government-led management has been successful. Nonetheless, there is a strong possibility that the resource is presently being overfished.

Piramutaba (*Brachyplatystoma vaillantii*)

Piramutaba are mainly captured at the mouth, but also in the main channel, of the Amazon River. Production in recent years has been above 20,000 t. The species is considered to be in a recovery phase from excessive fishing.

Lobster (*Panulirus argus* and *P. laevicauda*)

Lobsters are the most important seafood resource in the northeastern region. The two species are found in the Atlantic from the southern US coast to the south-eastern part of Brazil. In certain areas they have been dangerously overfished, which has resulted in unstable

in the economic profitability of important fish stocks along the Brazilian coast (MMA/IBAMA, 2001).

catches and a high degree of uncertainty concerning their reproduction capacity.

Pargo (*Lutjanus purpureus*)

Historically, the Pargo is an important fishing resource for the northeast and, recently, for the north as well. The species is mainly found on ocean banks from the Brazilian border with Guyana to Rio de Janeiro. After a collapse in 1988-1990, followed by a period of significant recovery from 1991-1999, the production of Pargo declined again in 2000-2001. The catch in recent years has been influenced by two factors: the recovery of the resources in overfished areas and the expansion of the total catch area. Nevertheless, the increased number of young individuals in the catches is a concern for specialists.

Caranguejo-uça (*Ucides cordatus*)

The Uça crab is one of the main components of the mangrove swamp fauna and is found along the Brazilian coast from Oiapoque, Amapá to Laguna, Santa Catarina. The states of Maranhão and Pará have the most extensive areas of mangrove swamp eco-systems. The crabs caught in these two states make up nearly 50% of the total controlled catch of the Uça crab in the entire Brazilian north and northeast in recent years, with catches varying from 10,000-12,000 t.

Sardinha-verdadeira (*Sardinella brasiliensis*)

The Sardinha-verdadeira is one of the main pillars of industrial fishing in south-eastern and southern Brazil from 22°-29°S. Currently, there is a crisis-level decline in the catch of this species.

Other fish species of south-eastern and southern Brazil: **Corvina** (*Micropogonias furnieri*), **Castanha** (*Umbrina canosai*), **Pescada Olhuda** (*Cynoscion guatucupa*, *C. striatus*) and **Pescadinha Real** (*Macrodon ancylodon*)

2 All the information in this chapter was taken from the document presented to the Interministerial Working Group created to define the Finance Program of the Fleet for Oceanic Fisheries and Construction or Renovation and Modernization of the Coastal Fleet (Pro Fleet). Available at www.ibama.gov.br (visited 28 March, 2007).

These are important fish species caught with dragnets or drift nets in the coastal region. According to the Grupo de Estudos Permanente (GEP),³ these resources are being fished to their limit or have even been overfished since 1984.

Camarão-rosa from the south/south-east
(*Farfantepenaeus brasiliensis* and *F. paulensis*)

The Camarão-rosa harvest is dominated by artisanal fishing. The record catch was recorded in 1972 when it reached 16,629 t. By 1994, the catch had fallen to 2,072 t. In 2001, the total catch was only 1,166 t, the lowest recorded to date. The status of this resource is considered critical.

Camarão-sete-barbas, Seven-whisker shrimp
(*Xiphopenaeus kroyeri*)

Camarão-sete-barbas (Seven-whisker shrimp) is caught in the south-east and south, from Espírito Santo to

Santa Catarina, by industrial, artisanal or small-scale fishing. Production in 1999 was only 4,116 t, the lowest in the past 30 years. In the past two years, there has been a slight recovery. The status of this resource is poor.

Tuna and related fish

Tuna fishing in Brazil is one of the most complex activities in the sector because of the variety of methods used and the quantity of species involved. It is practised along the entire coast. Most of the important tuna species found throughout the Southern Atlantic are being fished to their limits according to the International Commission for the Conservation of Atlantic Tunas (ICCAT), with the exception of the bonito-listrado (*Katsuwonus pelamis*), while other species are suffering from overfishing.

2. Overview of multiple demands on the coastal and exclusive economic zones

a) Coastal zone

Currently, nearly a quarter of the Brazilian population lives in the coastal zone, that is, approximately 42 million inhabitants that are distributed over 324,000 km². Both estuaries, as well as the shorelines, are very attractive areas for productive activities.⁴

There are many economic activities in the coastal zone. It is important to remember that Brazil was discovered from the coast and the first economic activity was the logging of the Pau-Brazil tree, *Caesalpinia echinata*, from the Atlantic Forest, which is now a species threatened with extinction.

Logging was once intense along the Brazilian coast, which contributed considerably to the degradation of the Atlantic Forest, which today covers only 7% of its original area. Exploitation of the Atlantic Forest and its associated ecosystems continues, although to a lesser degree due to environmental legislation and a general awareness throughout Brazilian society. Nonetheless, there is still much to be done to contain forest

degradation. The resulting situation is not only due to forestry, but also to other activities in the coastal zone that contribute to the deforestation that began even before European settlement, though certainly accelerated after 1500.

Tourism is an important economic activity that is accompanied by the growth of beach communities, the hotel sector, and holiday homes.

Real estate speculation is increasing, and most coastal cities do not have satisfactory urban planning which causes poor land use and contributes to the degradation of land and marine ecosystems. That, in return, directly affects the quality of life in inhabited areas.

Regions with low demographic density on the Brazilian coast, which are historically locations with traditional, semi-isolated communities, have in recent decades been incorporated into the market economy, which is principally driven by tourism and holiday

3 IBAMA Permanent Study Groups (Grupos de Estudos Permanentes – GEP) are groups created by IBAMA with the objective of researching the ecological and socio-economic aspects of fishing resources.

4 Federal Action Plan for the Brazilian Coastal Zone instituted by Resolution CIRM n° 07/2005. Available at www.mma.gov.br/estruturas/sqa/_arquivos/pafzc_out2005.pdf (visited 24 April, 2007).

activities. Real estate speculation is causing an increased dislocation of the populations that traditionally depended on fishing, agriculture and extractive activities. It has also often led to the degradation and destruction of naturally sensitive areas in the coastal region.⁵

Mining activities that serve the civil construction industry have become a serious problem that affects ecosystems in the coastal zone. In addition to the destruction of the Atlantic Forest, mining for stone, gravel, clay and sand has had an intense impact on the landscape of the Brazilian coast.

Coal mining is another problem in the coastal zone. In some locations in southern Brazil, coal mining is destroying freshwater supplies. Coal is used principally in electrical generators that are highly polluting and thus have a negative impact on the quality of life for adjacent communities.

The petroleum industry has also had a strong impact on the coastal zone. Moving petroleum via underwater pipelines or tankers has caused countless accidents in the coastal region. Despite efforts by the industry to prevent and contain these accidents, they are extremely harmful to the ecosystems and the economy in the regions where they are found, essentially affecting artisanal fishing which is severely curtailed by the pollution.

In addition, the installation and operation of the oil platforms and pipelines, shipping traffic, and land installations of the petroleum industry, interfere directly with the coastal zone, causing the growth of cities and modifying the socio-economic activities of the local populations.⁶

A variety of industrial activities are found in the coastal zone including chemical, pharmaceutical, metallurgy, machinery, agro-industrial, textile, shoe, paper, printing, semiconductor, software and other sectors. Demand for transportation services and facilities is also growing in the coastal zone. Ports, roads and airports are being expanded, modernized and

restored to serve the needs of commerce, industry and society in general.

Aquaculture, and especially shrimp farming, is a growing activity in Brazil's coastal zone. Such activities, conducted without proper planning, have led to considerable conflicts due to their strong environmental impact. In only five years of activity, shrimp farming, which is concentrated in the Brazilian northeast and in Santa Catarina State, has contributed more than US\$ 155 million to Brazil's balance of trade surplus. With growth rates of 50% per year, shrimp farming creates conflicts with other sectors, particularly with traditional fishing communities in the coastal region. This is due to the occupation of the areas determined by law to be protected areas, as well as the release of effluents without proper treatment. Shrimp farming itself suffers from industrial and urban pollution that is also caused by the lack of integrated planning in the coastal zone.⁷

Fishing is of considerable social and economic importance in the coastal zone. Its cultural role is also significant because in many coastal communities, culture is linked to fishing and its relationship with the sea.

There are cities in which the economic activity of a large portion of the population is linked to the sea which is principally fishing. Of course, this is no longer the rule in the coastal region due to the growth of the other economic sectors mentioned above, although fishing still contributes considerably to the socio-economic profile of inhabitants at the Brazilian coast.

In the municipality of Governador Celso Ramos in Santa Catarina for example, fishing is the most important economic activity as described below:

...The greatest concentration of fishermen is located in Governador Celso Ramos, which is the only municipality in Santa Catarina with two fishing colonies. Nearly 5,000 people and 800 boats are directly linked to this activity which is the principal element in the municipal economy – indirectly

5 Ibid.

6 Ibid.

7 Ibid.

*involving 90% of its population of 11,000 residents. Like Governador Celso Ramos, the fishermen of Bombinhas, the second largest colony, depend on the waters that surround the Reserve for their sustenance.*⁸

Geo Brasil – *Relatório Oficial do Brasil sobre Recursos Pesqueiros na Rio + 10* [The Official Report of Brazil About Fish Resources at Rio + 10] – estimates that fishing activity in the country is responsible for the generation of 800,000 jobs, and that there are nearly 300 companies related to fishing and processing. Nevertheless, as the text states, fishing activity does not have considerable importance in the national socio-economic context. However, it is considered as a source of employment and food for that portion of the population that lives along the coast and rivers and thus it has regional importance. The Federal Action Plan for the Coastal Zone emphatically affirms that the socio-economic importance of the activity is uncontested, not only as a supplier of animal protein for human consumption, but also due to the number of jobs it generates and because nearly four million people depend directly or indirectly on the sector.

b) EEZ

The economic activities in the Brazilian EEZ go beyond fishing activities. Among them we highlight petroleum exploration and ship traffic.

Brazil extracts approximately 80% of its petroleum production, which accounts for nearly 1.4 million barrels per day, from platforms located in the EEZ, and therefore in the Amazonia Azul (Blue Amazon).⁹ Petróleo Brasileiro S/A (PETROBRAS) is highly active

in the EEZ and is assisting the country in the project to expand its territory. The company was one of those responsible for the LEPLAC project. The project was essential for establishing the basis for Brazil's request to the United Nations (UN) for the increase of its territory in the sea. To legalize this space of 'wet territory', Brazil was required to undertake a detailed scientific mapping of the continental platform. The 17-year process was conducted by the Navy from 1987-2004. In this period, US\$ 40 million were invested – half of the cost paid by PETROBRÁS – in the so-called *Plano de Levantamento da Plataforma Continental Brasileira – LEPLAC* (Plan for Surveying the Brazilian Continental Shelf), with Navy ships travelling 230,000 km in the region, the equivalent of five and a half trips around the globe. The data collected by the Navy and PETROBRAS was presented to the UN.¹⁰ An increase in Brazil's territorial extent would have a direct impact on petroleum exploration activities. 'One immediate effect of the marking of the Brazilian continental platform in the field of the petroleum industry will be that the blocks placed for auction by the National Petroleum Agency, which are now restricted to 200 miles, can be extended to the outer limit of the platform'.

Shipping traffic in the EEZ is very important for the country's economy. Nearly 95% of Brazil's foreign commerce (imports and exports) circulates through Brazilian seas. However, the current situation of the Merchant Navy is that the great majority of goods that the country imports and exports are transported by ships with other flags.¹¹

3. Structure of the fisheries sector

The structure of the productive sector in Brazil reflects, in general terms, the structure of Brazilian society. On the one hand, capital invested in fishing activities seeks profit. On the other hand, a worker is responsible for sustaining his family. Fishing is usually one of his few alternatives for survival.

Marine fishing in Brazil is composed of artisanal or small-scale fishing and industrial activities. There is also scientific or recreational fishing, but this is beyond the scope of this work.

8 APRENDER. (2003). Colony is the term used in Brazil for officially recognized professional associations of independent fishermen.

9 http://www.brasilpnuma.org.br/pordentro/artigos_012.htm (visited 24 April, 2007).

10 <http://www.vermelho.org.br/base.asp?texto=17436> (visited 8 May, 2007).

11 http://www.brasilpnuma.org.br/pordentro/artigos_012.htm (visited 24 April, 2007).

Normative Instruction No. 3 of May 12, 2004 deals with the operation of the General Fishing Register. Article 4 Item I of the Rule offers the definition by the Special Secretariat for Aquaculture and Fishing (SEAP) of the professional fisherman: an individual, 18 years or older, in complete control of his civil capacity, for whom fishing is his profession or principal way of life, whether in artisanal or industrial fishing.

The Coastal Zone encompasses both industrial and artisanal fishing activities whereas in the EEZ, only industrial ocean fishing takes place. The report *Brazil and the Sea in the 21st century* presents a definition of artisanal fishing, coastal industrial fishing and ocean industrial fishing:

Artisanal fishing (*Pesca artesanal*): encompasses the segment with commercial objectives, but without employment ties with the fish processing or commercialization industry. It uses small- or medium-sized boats, with or without motors, and operates close to the coast. These boats are generally made of wood and the capture technology is capable of producing small- or medium-sized catches. It constitutes the largest part of the national fishing fleet and contributes up to 60% of the total catch.

Coastal industrial fishing (*Pesca industrial costeira*): conducted by boats with greater autonomy, capable of operating in areas far from the coast, effecting the exploitation of fishing resources that are relatively concentrated in geographic areas. These boats have mechanized capture equipment, are propelled by high-powered diesel engines and have electronic equipment for navigation and detection of fish schools. The hulls may be of steel or wood.¹²

Industrial ocean fishing (*Pesca industrial oceanica*): industrial fishing is incipient in Brazil and involves boats suitable to operate throughout the EEZ, including the most distant ocean regions, even in other countries. The fleet has great autonomy, with on-board industrialization, use of sophisticated equipment for navigation and detection of fish schools, and is extensively mechanized. Nearly all boats are leased from foreign countries.

Artisanal fishing is predominantly an informal activity as Diegues explains:

*Artisanal or small-scale fishing is centred around the family unit or a group of neighbours. The fisherman is not always the owner of the means of production (boat, nets, hooks, etc.). The fisherman often uses another owner's boat and equipment and shares the catch with the owner. The owner of the boat is, usually, also a fisherman who participates with the others in the entire fishing task.*¹³

Art. 4 I of IN – SEAP N° 3 de 2004 defines an artisanal fishing professional in a similar manner as Diegues which is one who, with his own means of production, exercises his activity autonomously, individually or as a family business, or even with the occasional help of other partners, without formal employment ties.

Artisanal fishing is practised by local communities in Brazil's coastal region. These populations are not indigenous and descend mainly from European settlers. In general they have little schooling and a very low average income. The fisherman spends many days at sea, while the woman cares for the family and the household.

Upon analyzing the structure of the corporate-industrial fishing sector, Diegues reports that it is divided into two subcategories: one developed by fishing outfitters and the other by the corporate or industrial sector:

The former is characterized by the fact that the owners of the boats and of the fishing equipment – the outfitters – do not directly participate in the production process, a function delegated to the captain of the boat. The boats are bigger and have a larger range of operation than those used by the small-scale fishermen. They also require a certain division of labour among the crew: a captain, cook, freezer operator, machinist, fisherman, etc. It also has, in addition to the propulsion motors, machinery that requires formal training for certain functions which, however, does not completely supplant the know-how

12 Comissão Nacional Independente sobre os Oceanos. (1998). *O Brasil e o Mar no Século XXI*, p.119.

13 Diegues, cited in Dias Neto, J. (2002). *Gestão do uso dos recursos pesqueiros marinhos no Brasil*. Brasília: Universidade de Brasília, Centro de Desenvolvimento Sustentável.

of the fishermen, or of the captain, who employs them in the same way as the small-scale fishermen, the social group from which they usually emerge. The crew, as in small-scale fishing, are paid by an apportionment system, even if for some functions there may be complementary salaries.

The second category of the corporate/industrial fishing sector is defined by Diegues:

In industrial fishing, the company is the owner of the boats and the fishing equipment. It is organized in various sectors, and in some cases, the catching, processing and sale is vertically integrated. The boats are highly mechanized not only for propulsion, but also to undertake the fishing tasks such as casting and retrieving the nets, and processing the fish on board (in some cases), etc. Electronic equipment is also found on board to locate schools, assist in navigation, etc.

The definition is better understood within the Normative Instruction – SEAP No. 3 12 May, 2004 Art. 4°III and V. SEAP defines a fish outfitter as being the individual or corporation who, in his name or under his responsibility, offers for use one or more fishing boats, with a minimum gross capacity of 10 tons. Industrial fishing is defined as a corporation that directly or indirectly¹⁴ practises the activities of catching, extraction, collection conservation, processing and industrialization of live animals or vegetables that are aquatic or for which water is the

most frequented habitat.

The most important point to note is that outfitters just provide the boat while industrial fishing takes in the whole process of production.

The professional fisherman is defined as one who, being formally employed, carries out activities such as catching, collecting or extracting fishing resources in fishing boats owned by individuals or companies registered in the *Registro Geral da Pesca* (RGP)¹⁵ within the corresponding category.

It is thus clear that the productive sector is composed of distinct categories. Each fishing category has its own structure and *modus operandi*. This division of the productive sector directly affects the form of political organization, revealing the clear separation between rich and poor, capital and labour. In this sense, Marrul Filho explains:

Both fishermen as well as fishing companies, or outfitters, are distinguished by the technology of equipment that they use, by the environment or resource that they exploit, by the ownership or not of the boats, if they are small-scale fishermen, or if they participate in industrial fishing, among other differences. In this way, it is logical for there to be different and often conflicting objectives, interests and visions, and for them to dispute, each from their own perspectives, the resources that they exploit.¹⁶

4. Fishermen's organizations

Fishermen in Brazil are organized through *colonias* (colonies) of fishermen and in unions. The colonies are associations of fishermen that were intended to represent the fishermen before government and society and were created after 1919, with the Mission of José Bonifácio. Although in theory, they are meant to represent fishermen, in practice they are often linked to the dominant political party in the municipality:

It is also quite common for the position of president of the colony to be held by individuals who are not fishermen and who are linked to local politicians. An example is the case of the Colony of Fishermen of Coqueiral (AL), which was controlled by people who belonged to the local elite and not by the fishermen. These non-fishermen were often elected to the Directorate because in the entire community of

¹⁴ Instructional Norm – SEAP no. 3 of May 12 2004 Art. 4°III.

¹⁵ *Registro Geral da Pesca* (General Fishing Register) was established by Decree Law no. 221/67 and is regulated by Instructional Norm – SEAP no. 3 of 12 May, 2004.

¹⁶ Marrul Filho. (2003).

*fishermen they were the only ones who could read and write. By means of this mechanism, it is not uncommon for the brokers or merchants to control the fishermen's association. To the degree that the colonies do not represent the interests of the fishermen, their participation is, in general, reduced, although it is compulsory.*¹⁷

In reality, each colony has its own special characteristics. Depending on the work, knowledge, and culture of the president and his associates, the relationship of the fishermen to the colony varies. In some, the associates only appear to solicit the few social benefits that they are given by governments and for the fishermen who are linked to the colonies. In more organized colonies, there are partnerships with non-governmental organizations (NGOs) and/or the government to help educate the fishermen in subjects that include citizenship, environmental issues, and training in computer use. In summary, some colonies provide representation and others do not.

The fishing colonies in a given state constitute the State Federation, while the individual federations combined form the National Confederation of Fishermen (CNP). This system of representation was strongly linked to the government administration given that until the mid 1980s, the position of the President of the Confederation, according to its own bylaws, was named by the Ministry of Agriculture.¹⁸

5. Political perception of basic fisheries issues

The exploitation of fishing resources in Brazil was stimulated in the 1960s with the expansion of the legal, economic and tax structure to provide incentives to the fishing industry. At that time, fishing resources were only considered from an economic perspective, which had negative consequences that can still be noticed today. The lack of sustained management of fishing activities and of a proper structure of the sector has

In addition to the colonies, the fishermen are organized in movements such as the National Fishermen's Movement (MONAPE) and the Fishermen's Pastoral, an agency linked to the National Conference of Bishops of Brazil (CNBB). These are considered more advanced than the *colonia* system. However, they occur more in the north and northeast, and meet the resistance of the leaders of the more traditional system which is represented in all states.¹⁹ Although they are more common in the north and northeast, MONAPE and the Fishermen's Pastoral have representation in the National Council of Fishing and Aquaculture.

A third organizational structure is the union. However, unions appear to be not so popular amongst the fishermen. Many of them are members and pay union dues, but do not participate because they believe that it is controlled by middlemen.²⁰

With this surfeit of representative entities for fishermen, it is difficult to find a common perspective in the sector. This dilutes efforts by fishermen to strengthen themselves as a professional class.

The sector of business leaders linked to industrial fishing is organized into unions such as the Union of Fishing Companies of Itajai, and in councils such as the National Council of Fishing and Aquaculture, which is represented on the National Council of Aquaculture and Fishing.²¹

affected the stocks in such a way that there is now a grave crisis in the sector as demonstrated by Dias Neto and Marrul Filho:

The attempt to modernize fishing, initiated at the end of the 1960's and which carried on until the beginning of the 1980s, [is] linked to the current economic model, which concentrated capital,

17 Dias Neto (2002) citing Diegues.

18 Dias Neto, *supra*, note 13, p.148.

19 *Ibid.*, p.149.

20 *Ibid.*, p.149.

21 The National Council of Fishing and Aquaculture (CONEPE) is a private agency while the National Council of Aquaculture and Fishing (CONAPE) is linked to the Special Secretariat of Aquaculture and Fishing, a representative council that brings together the country's principal actors in the sector.

*encouraged exports, was over-scaled, technologically intensive and ecologically predatory. Government capital via tax and financing incentives had a large and important role in this process. The application of this model to the fishing sector in Brazil has caused serious problems related to the sustainability of exploited resources.*²²

The effort of the Brazilian government to expand fishing activities was focused on the industrial sector. This new and modern fleet began to act aggressively in the coastal zone, a preponderant factor in the degradation of the ecosystems and the consequent depletion of fish stocks.

Much of the artisanal fishing takes place in the coastal zone in particular. This is due to the size and quality of the boats, which are not able to navigate beyond the coastal region. Nevertheless, industrial fishing boats are also present, causing considerable conflict between the two groups. This divides the fishermen and weakens their representation. The

conflict generated by the presence of industrial fishing in the coastal zone was highlighted in the Geo Brasil 2002 report – *O Estado dos Recursos Pesqueiros: Pesca Extrativa e Aquicultura*:

*It is important to highlight the element of conflict and competition between artisanal and industrial fishing. In these cases, the government has historically positioned itself in the conflict in a manner clearly favourable to the capitalist business leaders (...). The government, through induced strategies, [has provoked] an increase in the concentration of capital by investing heavily in the large companies. It has also ignored the wealth and complexity of the endogenous local organizational forms of small production. It considers the dual interests – ancient versus modern – as independent spheres of activities and sees the small fisherman as a reactionary individual, uncultured and predatory, incapable of assimilating technological standards aspired to by the Government and the industrial bourgeoisie.*²³

II. The legal regime governing fisheries

1. Legislation and institutions relating to coastal and marine management

Brazilian law had a fishing law instituted at the time of the military dictatorship, the Decree Law n° 221 of 1967. This law, called the Fishing Code, has since then remained in force although most of its elements were subsequently altered by the approval of new rules. The Code deals with the protection and promotion of fishing and other measures. Its character of stimulating fishing activities was typical of a historic moment in which fish was seen predominantly as an economic resource. The fishing code included fiscal incentive policies that survived until 1988. Those fiscal incentives were abolished by Law n° 7.714/88.²⁴

Since 1985, with the return to democracy, the country began to modernize its legislation, including the Federal Constitution, which caused changes in the fishing legislation. The rules that affect fishing activities

currently involve environmental, territorial, tax, social security, labour and other issues.

a) The Constitution

The Constitution of the Federal Republic of Brazil, in article 23, items VI and VII, establishes responsibilities for the Federal Government, the States, the Federal District and the Municipalities:

- To protect the environment and combat pollution in any of its forms;
- To preserve the forests, fauna and flora.

Specifically in relation to fishing resources, Article 24 of the Constitution establishes that it is the responsibility of the Federal Government, the States and the

22 Dias Neto, J. and Marrul Filho, S. (2003). *Síntese da Situação da Pesca Extrativa Marinha no Brasil*. 1: /DIFAP-BSB 2: SBF/MMA July 2003. www.ibama.gov.br.

23 IBAMA (2002). *Perspectivas do Meio Ambiente no Brasil - O estado dos recursos pesqueiros: pesca extrativa e aquicultura*. Report – Geo Brasil.

24 Dias Neto and Marrul Filho, supra, note 22.

Federal District to establish legislation concerning forests, hunting, fishing, fauna, nature conservation, defence of the land and of natural resources, environmental protection and pollution control.

Although the Constitution establishes that the Federal Government, the States, and the Federal District are responsible for establishing legislation concerning fishing, the states and the federal district have remained inactive because the ocean and its natural resources are under federal jurisdiction. Hence, only the Federal Government has enacted any legislation for marine fisheries.

The Constitution contains a chapter on environmental protection in Article 225, establishing a right to an ecologically balanced environment:

*Everyone has the right to an ecologically balanced environment, which is an asset for the common use of the people and is essential for a healthy quality of life, imposing on the Government and society as a whole the duty to defend it and preserve it for the present and future generations.*²⁵

By entitling humans to this fundamental right, the Brazilian Constitution adopts the first principle of the Stockholm Declaration for the Environment issued in 1972.²⁶

The measures that should be used by the government to effectively ensure the right to an ecologically balanced environment are listed in the seven items of Para 1 of Article 225. Four of these instruments, I, II, III and VII, as well as §§ 3 and 4 are essential to this study.

Article 225

§ 1 In order to ensure the effectiveness of this right, public powers are entrusted to:

(i) – preserve and restore the essential ecological processes and promote the ecological management of species and ecosystems;

(ii) – preserve the diversity and integrity of the genetic patrimony of the country and monitor the entities dedicated to research and manipulation of genetic material;

(iii) – define, in all the units of the federation, territorial spaces and their components to be especially protected, with their alteration and suppression only permitted by law, and with the prohibition of any use that compromises the integrity of the attributes that justify their protection;

(iv) – protect the fauna and flora, and prohibit, by law, those practices that place at risk their ecological function, provoke the extinction of species or subject animals to cruelty.

§ 3 Any conduct and activity considered harmful to the environment will subject offenders, individuals or corporations, to criminal and administrative sanctions, independent of the obligation to repair the damage caused;
§ 4 The Brazilian Amazon Forest, the Atlantic Forest, Serra do Mar, the Pantanal of Mato-Grosso and the coastal zone are national patrimony, and their use must be conducted according to law, within conditions that assure environmental preservation, including the use of natural resources.

According to § 4 of Article 225 of the Constitution, the coastal zone, together with the Amazon Forest, the Pantanal of Mato-Grosso, the Atlantic Forest and the Serra do Mar, are a National Patrimony.²⁷ This means that the utilization of the coastal zone must be conducted ‘within conditions that assure environmental preservation’.²⁸

²⁵ Constitution of the Federal Republic of Brazil, Brasília: Federal Senate, 1988.

²⁶ *Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.* See <http://www.unep.org/Documents/multilingual/Default.asp?DocumentID=97&ArticleID=1503>.

²⁷ National Patrimony is defined in the text of the National Coastal Management Plan II (PNGC II) approved by Resolution No. 005 of the Inter-ministerial Commission for Ocean Resources (CIRM) from December 1997: ‘National Patrimony – all those assets belonging to the Brazilian nation, of common use, with special historic, scenic, socio-economic, environmental or other similar characteristics, conferring to them special status and requiring the preservation of their basic conditions for existence.’

²⁸ Even before the promulgation of the Federal Constitution, the PNGC was instituted on the basis of Law No. 7.661 of 1988, under the auspices of the CIRM in an attempt to guide the rational utilization of coastal resources. It was published in Resolution CIRM No. 001/90,

b) Legislation creating agencies and allocating powers

In January 2003, the Secretaria Especial de Aquicultura e Pesca da Presidência da República (SEAP) was established at ministerial level. The Secretariat was created on the first day of the current government that issued Provisional Measure No. 103, later converted into Law No. 10.683 of 2003. The SEAP assumed the following responsibilities upon its establishment as determined by Article 23 of this Law:

SEAP is responsible for providing direct and immediate assistance to the President of the Republic in the formulation of policies and guidelines, and particularly, to promote the execution and the evaluation of measures, programmes and projects to support the development of industrial and artisanal fishing, as well as the actions aimed at the implantation of support infrastructure to the production and commercialization of fish and the support to fishing and aquaculture, to organize and maintain the General Register of Fishing called for in Art. 93 of Decree-Law No. 221, of 28 February, 1967, to regulate and establish, with respect for environmental legislation, measures that allow the sustainable use of the highly migratory fishing resources and of those that are overexploited or not exploited, as well as supervising, coordinating and guiding the activities related to the support infrastructure for production and circulation of fish and the aquaculture stations and posts, and establish, in coordination with the federal district, states and municipalities, rational programmes for the use of aquaculture in public and private waters, with a basic structure including the Cabinet, the National Council of Aquaculture and Fishing and up to two Subsecretaries.

Furthermore, according to Article 23 of Law No. 10.683 of 2003 the SEAP is responsible for:

- Issuing licences, permissions and authorizations for the exercise of commercial and artisanal fishing and aquaculture in the fishing grounds in national territory, including the continental, interior waters and the territorial sea of the Continental Shelf,

the Exclusive Economic Zone, adjacent areas, and international waters for the capture of:

- a) highly migratory species, according to the United Nations Convention on the Law of the Sea (UNCLOS), with the exception of marine mammals;
- b) under or non-exploited species; and
- c) overexploited species or those threatened with overexploitation, observing the dispositions of § 6 of Art. 27;

- Authorizing the leasing of foreign fishing boats to operate in the capture of species mentioned in lines a and b of item I, except in interior waters and in the ocean territory;
- Authorizing the operation of foreign fishing boats, in those cases called for in international fishing accords signed by Brazil, to exercise their activities under the conditions and limits established in the respective accords;
- Supplying the Ministry of the Environment with data from the General Registration of Fish related to the licences, permissions and authorizations issued for fishing and aquaculture, for the purposes of automatic registration of beneficiaries in the Federal Technical Register of Potentially Polluting Activities and Users of Environmental Resources;
- Passing on to the IBAMA 50% of the income from fees for services charged as a result of the activities indicated in item I, that are related to the expenses for the activities of inspection of fishing and aquaculture;
- Supporting, providing assistance and participating, in interaction with the Ministry of Foreign Relations, in the negotiations and events that involve compliance with rights and the interference in national interests about fishing, the production and commercialization of fish and the interests of this sector in particular;

as an integral part of the National Environmental Policy (PNMA), instituted by Law No. 6.938 of 1981, and by the National Marine Resources Policy (PNRM), created by a decree of 12 May, 1980.

- Granting economic subsidies for the price of diesel fuel instituted by Law No. 9.445 of 1997 operational.

Law No. 10.683 of 2003 attributes to the Ministry of the Environment responsibilities for the fishing activities related to SEAP, as expressed in Article 27 item XV:

The issues that constitute the areas of responsibility of each Ministry are the following:

Ministry of the Environment:

- b) policies for preservation, conservation and sustainable use of ecosystems, biodiversity and forests;

§ 6 In the exercise of the responsibility indicated in line “b” of item XV, in the factors related to fishing, it is up to the Ministry of the Environment:

- To establish the rules, criteria and standards for use of the species that are overexploited or threatened with overexploitation, as determined by the best existing scientific data, except for those referred to in line “a” of item I of § 1 Art. 23;
- To provide support, assistance and to participate, in conjunction with the Special Secretariat of Aquaculture and Fishing of the President of the Republic, and together with the Ministry of Foreign Relations, in business and events that involve the compliance with rights and interference in the national interests concerning fishing.

In addition to SEAP fisheries are co-managed from the aspect of resource protection. The policies for the preservation, conservation and sustainable use of natural resources are under the jurisdiction of the Ministry of the Environment (MMA) and the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA). Thus, IBAMA, the executive organ of the National Environmental Policy, is in charge of coastal zone and EEZ fisheries from an

environmental protection perspective. In the coastal states of the federation, joint action between the state and federal government is possible for monitoring natural and fishing resources.

The Brazilian government travelled a long way to reach the current organizational structure in relation to fishing activities. After the creation of the Superintendence of Fishing Development (SUDEPE) in 1962, the fisheries sector in Brazil was linked to the Ministry of Agriculture. This was only modified in 1989 when SUDEPE was absorbed by IBAMA. Thus, with the creation of IBAMA, fishing stocks, from the government’s perspective, would not be considered only as an economic resource, but also as natural resources. Dias Neto affirmed:

Thus, the 1990s began under the aegis of a new perspective. Fishing began to be managed by an agency that considered fishing resources as environmental resources and whose activity is predominantly informed by the public interest.²⁹

After 1998, with the creation of the Department of Aquiculture and Fishing at the Ministry of Agriculture, IBAMA decreased its responsibility in terms of fishing. With responsibility for the sector divided between a Ministry responsible for the conservation of natural resources and another responsible for the development of an economic activity, the conflict became apparent. Dias Neto commented on this conflict that was created by placing the Department of Fishing and Aquiculture (DPA) within the structure of the Ministry of Agriculture:

Decree No. 2681, of 21 August, 1998, which created the Department of Fishing and Aquaculture (DPA), in the structure of the Ministry of Agriculture, Animal Husbandry and Food Supply (MAPA), instigated the competition for space within the executive branch. Although DPA was not structured and provided with human resources in the states to execute its functions, its existence only intensified the institutional disputes between the MMA and MAPA, to the degree that DPA did not demonstrate a willingness to work together with IBAMA to resolve the concrete problems

29 Dias Neto, supra, note 13, p.138.

*of national marine fishing, but disputed politically and in discourse all the attributions concerning the management of national marine fishing.*³⁰

With the creation of SEAP, the conflict did not change. The dispute for space in the executive power continued because the Secretariat functioned with the status of a Ministry, and thus had power equal to the MMA in the federal government. The clash of policies for the Development of Economic Activity and those for Environmental Protection is evident. This applies not only to the fishing sector. Ministries such as Agriculture, and Mines and Energy also have serious conflicts with the MMA for the same reason.

Concerning the maritime region, the need to find a common language between the federal government ministries and coordinated issues related to the National Policy for Marine Resources, established in 1974, resulted in the creation of the Inter-ministerial Commission for Ocean Resources (CIRM). The CIRM developed into a forum with a tremendous opportunity to establish a unified federal government policy for marine resources. It did, however, not demonstrate considerable effectiveness.

All of this commotion related to the control of marine fishing in Brazil caused fishermen to lose confidence in the government. Due to this lack of trust, government efforts seeking participation of fishermen have had difficulties in achieving success.

c) Legislation on nature conservation

Art. 225 of the Constitution is the basis for the Law No. 9.985/2000 which established the Sistema Nacional de Unidades de Conservação da Natureza (SNUC). This law is responsible for presenting means and strategies to society for attaining the right to an ecologically balanced environment as expressed in the Brazilian Constitution. The law also establishes the obligation of society to protect the environment, which is also contained in the Constitution, i.e., in Art. 225, which states that 'it is the responsibility for the government and society to protect and preserve the

environment for present and future generations'. This means that the SNUC Law incorporates the principle of participation of society in the management of natural resources.

In addition to the Brazilian Constitution, international treaties signed by the Brazilian government call for public participation in environmental management. As Biderman and Telles do Valle note:

*Different international treaties refer to public participation in environmental management as a presumption of sustainable development. Agenda 21 calls for broad public participation, principally through the active involvement of non-governmental organizations and all the groups involved in decision making. It proposes that formulation and decision making, in all segments, must be conducted through consultative processes. More recently, the Millennium Declaration, signed by the United Nations in 2000, established principles that sought to strengthen democracy in environmental management. In 2002, during the United Nations World Summit on Sustainable Development, the Johannesburg Declaration on Sustainable Development was signed, where the signatory nations recognize that sustainable development requires a long-term perspective and the broad participation of society in the formulation of public policies, decision making and in the implementation of measures, at all levels. It also establishes that all the actors should act as partners with all the important agents, with respect for the independent role of each.*³¹

In this sense, the SNUC Law follows a global trend in opening management processes of natural resources to civil society. That is one of the reasons why the SNUC Law can positively affect the management of fisheries in Brazil.

In addition to the principle of social participation, the SNUC Law reflects the principle of precaution because the creation of protected areas is based on the concept of avoiding environmental damage in areas of

³⁰ Dias Neto, supra, note 13, p.116.

³¹ Biderman, R. and Telles do Valle, R.S. (2003). *Parecer jurídico sobre premissas e condicionantes para a gestão compartilhada de unidades de conservação: reflexões e propostas para a construção de um modelo para o Estado de São Paulo*. São Paulo.

important environmental interest. This principle is also applied to the buffer zones³² of conservation units (UCs).

Another strategy to assure the right to an ecologically balanced environment is to impose sanctions against offenders as prescribed in § 3 of Article 225 of the Constitution. This Constitutional Article was implemented by Law No. 9.605/1998, called the Environmental Crime Law, which addresses in Articles 33, 34, 35 and 36 conduct related to fishing activity.

Article 33 declares to be criminal the act of provoking, by the release of effluents or dumping of materials, the destruction of aquatic fauna species in rivers, lakes, ponds, lagoons, bays or Brazil's territorial waters.

2. Instruments promoting fisheries

With the transfer of responsibility from the Department of Fishing and Aquaculture to the SEAP, the latter was given the mission to formulate guidelines and policies for the development and support of fish production. SEAP seeks to support the formulation of these policies in the National Council of Aquaculture and Fishing (*Conselho Nacional de Aquicultura e Pesca – CONAPE*) because it is responsible for: a) supporting the formulation of national policy for fishing and aquaculture; b) proposing guidelines for the development and support of aquaculture production and fishing; c) reviewing guidelines for the development of the action plan for aquaculture and fishing; and d) proposing measures aimed at guaranteeing the sustainability of fishing activities and aquaculture. The Council, established by Law No. 10.683 of 2003, is presided over by the Secretary of the SEAP and involves the principal actors related to fishing in Brazil. Nevertheless, the Council is not a forum that is completely able to help in the formulation of policies to structure the fishing sector in Brazil because it includes neither agencies reporting to the Ministry of the Environment nor sectors linked to the environmental field of organized civil society.

Articles 34 and 35 focus on the act of fishing during banned seasons, in prohibited locations or by non-permitted means.

Article 36 determines that fishing is considered to be all acts intended to remove, extract, collect, catch, seize or capture specimens of the group of fish, crustaceans, molluscs, and aquatic vegetation, susceptible or not to economic use, with the exception of species threatened with extinction, found in the official lists of flora and fauna. This is a more complete definition than the previous one found in Article 1 of the Fishing Code of 1967 which defined fishing as all acts that intend to capture or extract animal or vegetable elements for which the water is their normal or most frequent living environment.

When it began its activities, SEAP presented a project that countered the former project of the Department of Fishing and Aquaculture of the Secretary of Rural Support and Cooperativism of the Ministry of Agriculture as demonstrated by the text of the project presented in January 2003:

The previous policy of the Department of Fishing and Aquaculture – DPA/MA - had as its guidelines the sustainable development of fishing and aquaculture, the generation, adaptation and transfer of scientific and technological knowledge, the definition of requirements for quality, cleanliness and safety for products of fish origin. Its strategy was aimed at the support of ocean fishing in the EEZ and in international waters, the development of continental and marine aquaculture, the recovery and rationalization of coastal fisheries, the competitive insertion in the international market and the opening of the spaces for the attraction of capital, with the strategic vectors, ocean fishing and aquiculture.

Although these policies and strategies formally include artisanal fishing, family aquaculture, and the

32 Buffer zone: the surrounding areas of a conservation unit, where human activities are subject to specific norms and restrictions, in order to minimize negative impact on the unit. Art. 2º XVIII Law no. 9985/00.

recovery of coastal and continental fishing, in practice priority was nearly exclusively given to industrial marine fishing and aquaculture. Coastal and continental fishing – by artisanal, family or small and micro outfitters – suffered a process of stagnation or decline, resulting in part from an unsuitable administrative model and applied policy due to the historic absence of an appropriate organization and the consequent overexploitation of stocks.

To change this reality the new SEAP policies seek to focus also on small fishermen, although support of ocean fishing in fact continues. The policies, in addition to being worked within the realm of the National Council, have the support of two National Conferences of Aquaculture and Fishing. They are summed up in the summary text prepared by SEAP for the first National Conference for Aquaculture and Fishing.

The role of the state under the auspices of SEAP/PR will be to provide support by investing in the modernization of the production chain of aquaculture and fishing, stimulating partnerships with the states and municipalities, and encouraging the formation of cooperatives and associations. Its goal will be to provide the aquaculture and fishing sectors with support infrastructure for activities that consider not only the stimulation or creation of modern companies for fish processing, but also support for exports and internal commercialization.

The policies developed for the fishing sector have been based only on the apparent needs of the sector because the actors involved in public consultations are mostly members of the productive sector and government. Universities and environmentalists have little space in the debate, for example, in the National Conferences.

In this context a so-called Pro-Fishing Fleet programme was created by Federal Law No. 10.849/2004. The second article of the law establishes financing for the purchase, construction, conversion, modernization, adaptation, and outfitting of fishing boats in order to reduce pressure on over-exploited stocks, provide efficiency and sustainability to the coastal and continental fishing fleet, promote maximum utilization of the catch, increase production

of national fishing, use fishing stocks in the Brazilian Exclusive Economic Zone and in international waters, consolidate the nation's ocean fishing fleet, and improve the quality of the fish produced in Brazil.

The law that created the Pro-Fishing Fleet programme is implemented by Decree No. 5.474 of 2005, which, in Article 13, establishes conditions for the projects presented to the programme. In addition to being subject to economic-financial analysis, the projects and proposals for the construction, purchase and modernization of boats must have detailed technical specifications and meet the following requirements:

- (i) – have approval from the Special Secretariat for Aquaculture and Fishing of the Presidency of the Republic of the proposals' technical factors, as well as approval of the applicant's capacity to develop the proposed activity;
- (ii) – have previous permission to fish by SEAP; and
- (iii) – have a licence to build or convert a boat issued by the Marine Command.

It should be noted that environmental variables must be considered in the approval of the project because the sole paragraph of Article 13 establishes that the technical specifications in the Article should be within the guidelines of the environmental and technical manual prepared jointly by SEAP, the Ministry of the Environment and the Ministry of Defence and published and distributed by SEAP.

Decree No. 5.474 furthermore creates a Management Group for the Pro-Fishing Fleet Programme, composed of a representative of each of the following bodies:

- Special Secretariat for Aquaculture and Fishing of the President of the Republic, which will coordinate the Group;
- Ministry of the Environment;
- Ministry of Defence;

- Ministry of National Integration;
- Treasury Ministry;
- Ministry of Transportation;
- Ministry of Planning, Budget and Management;
- Banco do Nordeste do Brasil S.A. – BNB;
- Banco da Amazônia S.A. – BASA; and
- Banco Nacional de Desenvolvimento Econômico e Social – BNDES.

A subsidy for the purchase of diesel fuel was established by Federal Law No. 9.445/97 which authorizes the Executive Branch to provide economic support for diesel fuel purchased to supply Brazilian fishing boats. It is limited though to the amount of the difference paid between national and foreign fishing boats. The law was implemented by Decree No. 4.969/04, which establishes in its second article that beneficiaries of the subsidy will be owners of vessels, outfitters and those that lease Brazilian fishing boats. It also determines that Brazilian individuals who lease foreign fishing boats under the terms of the law will have the same rights as the other beneficiaries indicated in this article. For approval and support under the measure, the individual or corporation can be represented by a federation or colony of fishermen, a fishing cooperative, a union of outfitters or fishermen, or any other outfitters' or fishermen's association.

This type of policy appears to oppose global trends because on the world scene there is recognition of the growing overcapitalization of the fishing sector and the need to stimulate the 'decommissioning' of boats.³³ This criticism is warranted, but the modernization of the fleet is also important as it allows Brazil to better exploit its EEZ. As long as the programme is articulated in accordance with the country's environmental policies and respects the international accords to which Brazil

is a signatory, it can be useful to the Brazilian nation.

Concerning the recovery of stocks, which is essential for the strengthening of the Brazilian fishing sector, there is no well-defined policy as there is a considerable lack of information. It is essential that scientific research is supported, especially on indicators for the state of the stocks and their ecosystems.³⁴ Dias Neto demonstrates that scientific research is the indispensable basis for obtaining success in promoting the management of the sustainable use of fishing resources:³⁵

*Among the various types of information needed for each resource we highlight the life cycle, population dynamic, potential, the environment where it is found, the interaction between the resource, the environment and fishing, as well as the social, economic and the political and institutional aspects related to fishing activities.*³⁶

The structural policies in the fishing sector in Brazil seem retrogressive due to the division of competencies between IBAMA and SEAP. It strengthens the competition for power in the government and does not help in the dialogue with the stakeholders because people do not perceive government as one entity. It is more difficult to create sound policies if the voice of the government is divided.

The paradigm in the elaboration of policies has strong economic aspects, although it is well known that there is a need to focus on fishing technologies that cause less impact and on developing environmental awareness of actors related to fishing. After all, Brazilian environmental legislation is well developed and some sectors of the government seek to implement it. Unfortunately, the government as a whole has done little to implement environmental policies in the country. The implementation that has taken place has been due to a strong effort by the Ministry of the Environment and support from organized civil society. However, other government sectors have tended to

33 Jablonski, S. (2005). 'Relatório enviado ao Centro de Gestão de Estudos Estratégicos (CGEE) do Ministério da Ciência e Tecnologia'. In: *Seminários Temáticos para a 3ª Conferência Nacional de Ciência e Tecnologia*. Brasília.

34 Ibid.

35 Dias Neto, supra, note 13, p.92.

36 Ibid., p.93.

ignore environmental legislation or interpreted rules in an extremely permissive manner. Yet, there are laws that were prepared over many years and provoked an important debate in the nation and are playing an important role in the Brazilian natural resource

3. Instruments of fisheries management

Brazil uses many instruments of fisheries management. They include licensing requirements, establishing seasons when fishing is prohibited, minimum catch size, gear restrictions, limitations on the size and/or number of fleets, closing of areas to fishing, and the establishment of protected areas, such as marine UCs.

However, as noted above, the effectiveness of these instruments suffers from uncoordinated competences of diverging administrative authorities. Access and capture restrictions are regulated by IBAMA, the Ministry of the Environment and SEAP in accordance with their responsibilities established by Law No. 10.683/03.

On the one – the environmental – side, Article 27 of Law No. 10.683/03 entrusts the MMA with competences to enact policies for the sustainable use of ecosystems and to establish the rules, criteria and standards for use of those species that are overexploited or threatened with overexploitation. Art. 1 of Decree No. 5.583/05 delegates powers to IBAMA to establish rules about the sustainable use of fishing resources referred to in the Article cited above. These powers are executed by regulatory acts established in consultation with other Ministries and Secretariats of SEAP, as well as those that involve foreign institutions or authorities. The text of the decree also maintains that the rules established by IBAMA must obey the guidelines, criteria and standards defined by MMA.

On the other – the economic – side, Article 23 of the same Law No. 10.683/03 entrusts SEAP with competences of supporting the development of the fisheries sector, of establishing measures concerning sustainable fisheries, and of issuing authorizations for the exercise of commercial and artisanal fishing.

a) Licensing

The registration and licensing of fishing activities is regulated by SEAP's Normative Instruction No. 3 of

management. It is clear in Brazil that fishing and environmental policies must be compatible. SEAP, besides the fishery users, should have a closer dialogue with the Ministry of Environment and civil society before establishing structural policies.

12 May, 2004. SEAP is also in charge of implementing the rule. It operates the General Fishing Register (RGP) which was established by Decree Law No. 221 of 1967. The following activities need to be registered or licensed:

- Any professional fisherman – artisanal or industrial – must be registered and carry a card documenting the registration (Art. 6);
- Any fishing vessel must be registered (Art. 17);
- The construction, importation, acquisition and conversion of a fishing vessel as well as the operation of the vessel for fishing purposes must be authorized. In the authorization the methods of catch, species to be caught and the area of catch must be determined (Articles 10 and 11);
- A shipowner operating one or more vessels above 10 tonnes needs a special registration (Art. 9); and
- Fish processing industries operating in Brazilian territory (Art. 20).

The criteria guiding the registration and authorizations aim at allowing the administration an overview of fishing activities (including also to ensure the payment of taxes) rather than striving for the regulation of fisheries in terms of sustainability. It is true that the authorization of vessels and their operation would allow some kind of resource protection by limiting catch capacity but in the absence of overall plans this potential appears not to be used. Anyway, no individual catch quotas are allocated. In sum, therefore the Brazilian fisheries management does not apply what is called a rights-based system.

b) Closed seasons

This management tool has been used for a long time in Brazil. Closed seasons relate to a specific species in a

designated area. While a species in a particular area is off-limits, the government provides social security for the fishers who are not allowed to work. This is a way of helping the workers to feed their families but also a strategy to keep fishers away from the stocks. One example of a species that cannot to be taken at a particular time of year is the Seven-whisker shrimp (*Xiphopenaeus kroyeri*). According to IBAMA's Normative Instruction No. 91/2006, fishing of this species is forbidden every year from 1 October-31 December in the area between the parallels of 18°20'S (border between the states of Bahia and Espírito Santo in the northeast) and 33°40'S (Chuí river, state of Rio Grande do Sul next to the border with Uruguay).

c) Minimum catch size

The minimum catch size of certain species is fixed in a specific region according to scientific data. After the first scientific meeting for the determination of the minimum catch size of marine and estuarine fishes in the south-east and south of Brazil in 2003, IBAMA established, by Annex I and II to Rule No. 73/03, the minimum catch size for 39 species.

d) Gear restrictions

Restriction of gear is an important management tool to avoid bycatch and damage to the sea floor. Technology has not provided gear that protects ecosystems as a whole but the use of explosives, for example, is completely forbidden in Brazil. It is important to specify which gear can be used to fish which species. Rules relating to the fishing of many species in Brazil fix which gear can be used. For example, the MMA/SEAP Rule No. 23/2005 determines that the only gear that can be used to catch the Frog fish (*Lophius gastrophysus*) are bottom-fixed nets. The same rule limits the number of nets that can be transported by each vessel to 1000.

e) Limiting vessel size and numbers

Limiting the size and/or number of vessels is fundamental to controlling fishing effort and achieving sustainable fishing. For instance, fishing in the buffer zone of Arvoredo Biological Marine Reserve is one

example of how size limitations are implemented. Large boats (more than 10 gross tons) are prohibited in this zone.³⁷ Another example: fishing for Royal crab (*Chaceon ramosae*), a fleet of only three vessels is allowed within the area between the parallels 19°00'S and 30°00'S.³⁸

f) Participation and accords

Participatory management of fishing resources is still incipient in Brazil, although some initiatives are being taken. While they have not yet been tested in marine fishing, Brazil has achieved positive results with the 'Fishing Accords'. The legal base for the accords was established in IBAMA's Normative Instruction No. 29³⁹ and is aimed at fishing in inland waters. Nevertheless, it appears to be an adequate model for participatory management of fishing resources that could go far in helping to resolve conflicts between those involved in marine fishing and government agencies.

The Fishing Accord is a set of specific measures obtained through consensual agreements among the various users in a fishing community and the management organ of the fishing resources in a given geographic area. The measures should meet certain criteria:

- (i) – that they represent the collective interests operating in the fishing resources (commercial fishermen, subsistence fishing, riverside dwellers, etc.) in the area to which the Accord applies, as long as they do not harm the environment which is a public asset to be assured and protected;
- (ii) – that they maintain the sustainable use of fishing resources, in order to strengthen fishing and fishermen;
- (iii) – that privileges not be given to one group more than others, that is, the restriction of equipment, size of the fleet, protected areas, etc., must be applicable to all those interested in using the resources;

³⁷ See Section III below.

³⁸ Normative Instruction SEAP No. 4/2005, Art. 2 III.

³⁹ IBAMA Normative Instruction No. 29 of 31 December, 2002.

(iv) – that they are operationally viable, principally in terms of inspection;

(v) – that they do not include regulation elements which are exclusively attributed to the government as described by law (penalties, fines, fees, etc.);

(vi) – that they be concretized by normative decrees complementary to the general normative decrees, which regulate the fishing activity in each hydrographic basin.⁴⁰

As can be observed, a new chapter has begun in Brazil in the history of fishing resource management. Nevertheless, there is still a long way to go until the state and society mature enough to allow for a definitive change in comparison to historical trends.

A bottom-up approach must be established in the country. Although standards managing fisheries rules are based on technical studies, most of them have flaws due to the centralized form in which they are prepared. In most cases it does not involve the actors and neglects traditional knowledge of the fishermen, as well as their interests. Fishing control will certainly be not successful if there are conflicts with fishermen due to ignoring their ability to participate in the management processes. If we analyze the means of administration applied to some of Brazil's principal fishing regions and stocks, the need for change becomes obvious.

One example are lobsters (*Panulirus argus* and *P. laeviscauda*) which have been largely overfished⁴¹

although the following measures have been taken: limiting the number of boats, establishing a closed season, setting a minimum catch size, restricting the use of some types of gear, among others. These measures may be observed, e.g., in Normative Instruction No. 5 of 4 May, 2005 from the Ministry of Environment.

Similar measures have been deployed in the case of the *Camarão-rosa* or Pink shrimp (*Farfantepenaeus brasiliensis* and *F. paulensis*) in the south/south-east, whose stock levels are considered to be at a critical level.⁴² These measures are issued in rules such as IBAMA's Normative Instruction No. 92 of 2006.

The *Sardinha-verdadeira* (*Sardinella brasiliensis*) stock has suffered one of the most serious collapses⁴³ in the area. The management measures for sardine include limitation of the fleet, a minimum catch size and the adoption of closed seasons.

Certainly the Brazilian government, in addition to changing methods for elaboration of management rules for fishing resources, needs to strengthen its inspection and control structure because the rules in force have not been adequately enforced. This is not only because of the fragile technical and participatory base in their elaboration, but also because of the great shortage of personnel and resources in the relevant government agencies, especially the Brazilian environmental agency, IBAMA.

4. Special provisions of fisheries governance in the EEZ

a) *Geographical scope*

Brazil's Federal Constitution of 1988 defines in article 20, item V, the assets of the federal government as the natural resources of the continental shelf and of the EEZ. The Brazilian EEZ is governed by Law No. 8.617 of January 1993 concerning the territorial sea, the contiguous zone, the EEZ, the Brazilian continental

shelf and other measures. According to article 6 of this Law the Brazilian EEZ extends out to 200 nm from the shoreline, determined from the base lines that serve to measure the width of the territorial sea.

The Brazilian EEZ encompasses nearly 3.5 million km². It is bordered in the north by the estuary of the

⁴⁰ See items I-VI of Art. 1 of Normative Instruction No. 29.

⁴¹ Dias Neto and Marrul Filho, *supra*, note 22.

⁴² Ibid.

⁴³ Ibid.

Oiapoque River and on the south by the mouth of the Chuí River. It reaches to the east and includes the areas around the Atol das Rocas, the Fernando de Noronha, São Pedro and São Paulo archipelagos and the islands of Trindade and Martin Vaz.⁴⁴ Brazil has requested from the United Nations an increase of 900 thousand km² to this area, at points where the continental shelf extends beyond the 200 nautical miles (up to 370 km). If the

Brazilian proposal is accepted, Brazilian jurisdictional waters will total nearly 4.5 million km². An area larger than the green Amazon, it composes an Amazon of the sea, the Amazonia Azul (Blue Amazon).⁴⁵ The request was presented in 2004 and in 2007 the United Nations (UN) approved 75% of what Brazil had asked for.

Figure 1. Map of Brazilian coast including the UN-recognized extension of the continental shelf (in darker colour)



Source: Design LEPLAC.

44 <http://www.mma.gov.br/index.php?ido=conteudo.monta&idEstrutura=19&idConteudo=1189> (visited 20 April, 2007).
 45 https://www.mar.mil.br/menu_v/amazonia_azul/amazonia_azul.htm (visited 20 April, 2007).

b) Fisheries management in the EEZ

Fishing is an important activity in the EEZ. The method of fishing used in the region is to a large part industrial ocean fishing.⁴⁶ Nevertheless, Brazil does not have a fleet large enough to fully exploit the fishing resources found in its EEZ. As pointed out earlier, the country has about 30,000 vessels, that are officially registered by SEAP, but only 10% of them are considered as industrial fleet.⁴⁷ This fleet is designed to operate in fishing grounds more than 200 metres out from the shore-line. It offers, in the short term, a growth potential or expansion of fishing effort.

In accordance with UNCLOS, Brazil has sovereign rights and jurisdiction over its EEZ. Thus, Articles 7 and 8 of Law 8.617 of 1993 which transposes Article 56 of UNCLOS provides:

Art. 7. In the Exclusive Economic Zone, Brazil has sovereign rights for purposes of exploration and utilization, conservation and management of natural resources, living or non-living, of the waters superjacent to the seabed as well as its subsoil, and in relation to the other activities that seek the exploration and utilization of the zone for economic purposes”.

Art. 8. In the Exclusive Economic Zone, Brazil, in the exercise of its jurisdiction, has the exclusive right to regulate scientific marine research, the protection and preservation of the maritime environment, as well as the construction, operation and use of all types of artificial islands, installations and structures.

Sole paragraph. Scientific marine study in the Exclusive Economic Zone can only be conducted by other States with the previous consent of the Brazilian government, according to the terms of the legislation in vigor that regulate the issue.

According to article 62 of UNCLOS, however, when a coastal state does not have the capacity to harvest all of its allowed catch, it should give other States access to the surplus of this catch, through

accords or other adjustments in conformity with the modalities, conditions, laws and regulations. To compensate for the lack of Brazilian boats, the country allows foreign boats to use its EEZ for fishing as long as these boats are leasehold or are under the benefits of international agreements concluded by Brazil.

This question is handled by Federal Decree No. 4810 of 2003, which established rules for the operation of fishing boats in Brazilian fishing zones, in the High Sea and through international agreements. According to Article 4 of the decree, the leasing of foreign fishing boats by a Brazilian fishing cooperative or company is considered a temporary instrument of the national ocean fishing development policy. The goal, established by the decree, is to provide the following benefits: a) an increased supply of fish on the domestic market and generation of income; b) increased labour opportunities and generation of jobs in the Brazilian fishing sector; c) the rational and sustainable occupation of the EEZ; d) a stimulus to the formation of a national fleet capable of operating in deep waters and to the use of equipment with modern technologies; e) expansion and consolidation of the fishing sector; f) a source of data for improving knowledge of the living resources of the continental platform and in the EEZ; and g) the sustainable use of fishing resources in international waters.

The Brazilian fishing cooperative or company that intends to lease foreign boats must ask for authorization from SEAP which can issue permission for this kind of business as expressed in Art. 5 of Decree No. 4810. The decree established a two-year period for Brazilian companies to adopt this leasing policy. Therefore, since 2005 the only boats that have been operating in the country are those whose permissions were signed in this period (2003-2005) and are still in force. In the realm of SEAP there are discussions on a possible extension of the leasing policy.

For the conscious regulation of fishing activity in the EEZ, profound knowledge of the living resources

⁴⁶ This method of fishing is incipient in Brazil and involves boats that can operate throughout the EEZ, including the most distant ocean regions, even in other countries. The boats are largely autonomous, with on-board industrial processing facilities, sophisticated equipment for navigation and for detection of schools, and they are extensively mechanized. The boats are nearly all leased from foreign countries.

⁴⁷ <http://200.198.202.145/seap/html/diagnostico.htm#2> (visited 10 July, 2007).

of the region is required. For this reason, and in observance of the requirements of UNCLOS, Brazil has realized the Programme for the Evaluation of the Sustainability Potential of Living Resources in the Exclusive Economic Zone (the REVIZEE Programme).

The programme has two basic lines of motivation. The first is related to agreements reached by Brazil, upon signing UNCLOS in 1982 and ratifying it in 1988. The second is based on the internal dynamic of the national fisheries potential. An MMA analysis explains the situation:

While the estimates of the potential for marine fishing resources in Brazil are for amounts superior to 1.5 million tons per year, the effective harvests of Brazilian fishing have regularly been below 700 thousand tons per year. While the estimates – usually based on the fishing potential in known areas – may be exaggeratedly high, the limited scope of the fishing effort and the poor knowledge of the Brazilian coastal resources is undeniable. Paradoxically, this situation coexists with the overfishing and depletion of stocks of most coastal species that are the traditional targets of the Brazilian fishing sector.⁴⁸

This shows that Brazil is in need of consistent and up-to-date technical and scientific data to support the administrative measures, regulation, support and development of national fishing.

The REVIZEE and other programmes, and the leasing of foreign boats are part of the strategy to exploit the Brazilian EEZ. However, this exploitation requires innovative measures for the management of fishing.

For example, Normative Instruction SEAP No. 23 of 4 June, 2005 denotes criteria and procedures (and other measures) for catching Frog fish (*Lophius*

gastrophysus) in Brazilian jurisdictional waters in the south-eastern and southern region between the 21°00S parallel and the southern limit of the Brazilian EEZ. It is an example of a rule that translates new trends in fishing resource management in Brazil into the legal context. New management tools include:

- Setting an annual maximum catch limit of, in this case, 1,500 tons (Art. 2 V);
- Utilization of ship-borne satellite tracking equipment that allows automatic and real-time monitoring of the geographical position of the boat and of the local depth every hour (Art. 7 II);
- Placing observers on board in 100% of the fishing operations (Art. 7 III); and
- Establishing no-take areas⁴⁹ (Art. 10).

Part of the difficulties in complying with the rules established by Normative Instruction MMA – SEAP/PR No. 23 derive from the delay in introducing satellite tracking systems and the National Programme for on-board observers, which has recently been finalized by the SEAP/PR, MMA and Navy Command after more than two years of preparation.⁵⁰ Other difficulties have included the resistance of the production sector, principally due to the costs involved of the installation and maintenance of the tracking equipment and the remuneration of the on-board observers by the fishing companies.⁵¹ Overall, the Brazilian government still does not have infrastructure for controlling fisheries in the EEZ. Cooperation with the Brazilian Navy and other Brazilian institutions for controlling fisheries is needed. Much time and money have been spent drawing up new rules for the sustainable use of fisheries in the EEZ. However, a concentration of efforts and the commitment of all stakeholders involved are needed, for the rules to become effective.

48 <http://www.mma.gov.br/index.php?ido=conteudo.monta&idEstrutura=19> (visited 8 May, 2007).

49 *Áreas de Exclusão de Pesca*.

50 See Normative Instruction SEAP/PR – MMA – CM No. 2, of 4 September, 2006.

51 Peres, J.A.A. (2007). 'Áreas de exclusão de Pesca Demersal em Águas Profundas da Costa Brasileira'. In: *Áreas Aquáticas Protegidas como Instrumento de Gestão de Pesca*, p.209. Brasília: MMA.

5. Special provisions of fisheries governance in the coastal zone

Governance of fisheries, which is the sum of legal, social, economic and political arrangements used to manage fisheries, has international, national and local dimensions. It includes legally binding rules, such as national legislation or international treaties, and it relies on customary social arrangements as well as on the respective national framework provided for all economic activities.⁵²

The management of fisheries in the coastal zone is necessary, given the great impact that the development of coastal cities and economic activities is having on marine resources. Thus, a social, economic and environmental approach is needed for managing fisheries.

a) *National Coastal Management Plan*

As observed before, Brazil has had a National Coastal Management Plan since 1988. In 1997, as determined by Law No. 7.661 in Article 4 and under the influence of commitments made by Brazil at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, the National Coastal Management Plan was revised in order to take account of the principles and guidelines called for in international agreements such as Agenda 21 and the Rio Declaration for Environment and Development of 1992. This so-called PNGC II was established by Resolution No. 005 of CIRM.

The National Coastal Management Plan comprises seven sections: 1. Introduction; 2. Principles; 3. PNGC's Area of Influence; 4. Instruments; 5. Objectives; 6. Programmed Actions; 7. Attributions and Competencies; 8. Funding.

Of these, we will focus on the instruments, and the attributions and competencies. The instruments are:

- State Coastal Management Plan;

- Municipal Coastal Management Plan;
- Information System of Coastal Management;
- Coastal Monitoring Environmental System;
- Report on the quality of the environment in the Coastal Zone;
- Ecological Economic Coastal Zoning (ZEE); and
- Coastal Zoning.

As regards attributions and competencies, responsibilities are shared amongst the federal, state and municipal levels. At the federal level, the responsibility is divided between the Environmental Ministry and IBAMA in the following manner.

The Ministry of the Environment, Water Resources and the Legal Amazon⁵³ (*Ministério do Meio Ambiente – MMA*) is the central organ in the National Environmental System (*Sistema Nacional do Meio Ambiente – SISNAMA*). The Ministry will coordinate the implementation of the PNGC and will also have the following remit:

- a) to permanently supervise and evaluate the implementation of the PNGC, ensuring compatibility of the State and Municipal Plans with the PNGC and other federal rules, without prejudicing the authority of other agencies;
- b) to promote inter-sectoral and inter-institutional coordination;
- c) to promote institutional strengthening, through technical, financial, and methodological support;

⁵² <http://www.fao.org/fishery/topic/2014> (visited 12 January, 2008).

⁵³ Amazonia Legal (Legal Amazon) is a political concept used for territorial and economic planning. It corresponds to the geographic space that covers the states of Amazonas, Amapá, Acre, Mato Grosso, western Maranhão, Pará, Rondônia, Roraima and Tocantins, with a surface of approximately 5 million km² which is about 60% of the national territory. The concept was instituted by Law 1.806 of 1953.

- d) to propose general rules, referring to the control and maintenance of coastal environmental quality;
- e) to promote the consolidation of the Coastal Management Information System (*Sistema de Informação do Gerenciamento Costeiro – SIGERCO*);
- f) to establish procedures for broad promotion of the PNGC; and
- g) to structure, implement and monitor the programmes for Monitoring, Control and Regulation in the areas of its responsibility.

The MMA will work closely together with agencies and councils at the federal, state and municipal levels, whose remits are linked to PNGC activities.

To support the MMA, the PNGC II also instituted a commission and a sub-commission relevant in our context. The commission, created within the CIRM, is called the Group for Integration of Coastal Management (*Grupo de Integração do Gerenciamento Costeiro – GI-GERCO*). It promotes and articulates federal actions in the realm of the coastal zone based on the approval of the Federal Action Plans (*Plano de Ação Federal para a Zona Costeira – PAF-ZC*). The sub-commission is linked to GI-GERCO and promotes integration amongst states, and within the federal government, over all issues related to coastal management.

According to SISNAMA, the MMA has the role of the articulator of policies, while IBAMA is responsible for the execution of policies. IBAMA has the following remit:

- a) to execute federal control and maintenance of coastal environmental quality in strict compliance with rules established by CONAMA;
- b) to support and participate in the consolidation of the Coastal Management Information System (SIGERCO), jointly with MMA and

other member agencies of SISNAMA in actions needed for its complete operationalization;

- c) to execute and accompany the Monitoring, Control and Regulatory programmes;
- d) to propose actions and projects for inclusion in the Federal Action Plan;
- e) to execute actions that seek to maintain and support sustainable economic activities in traditional communities in the coastal zone;
- f) to execute actions of the PNGC according to the guidelines defined by the MMA;
- g) to prepare Annual Operating Plans related to the activities under its responsibility, in a form compatible with priorities defined in the Federal Action Plan;
- h) to supply information and results obtained from implementation of the PNGC, as a contribution to the Report on Environmental Quality in the Coastal Zone;
- i) to make the actions of the PNGC compatible with public policies that apply to the coastal zone;
- j) to conduct environmental licensing of development or activities of regional or national impact within the coastal zone, taking into account applicable rules; and
- k) to promote, in alignment with the states and municipalities, the establishment of federal UCs and to support the implantation of state and municipal UCs in the coastal zone.

On the state level, responsibilities are similar to those at the federal level, though all information must be shared with other states and the Federal Government in order to help the planning of the country's coastal zone as a whole. It is important to emphasize that the states and municipalities are essential for the coastal management plans to become effective.

States will, within their spheres of responsibilities and jurisdiction, plan and execute the coastal management activities with the aid of municipalities and society. The states are responsible for:

- a) designating the Coordinator of the State Coastal Management Plan;
- b) preparing, implementing, executing and monitoring the State Coastal Management Plan, obeying the federal legal rules and the PNGC;
- c) organizing and consolidating the state Coastal Management Information System;
- d) organizing, implementing, executing, and accompanying the monitoring programmes with information that should be consolidated periodically in the Environmental Quality Report for the State Coastal Zone;
- e) promoting inter-sectoral and inter-institutional accordance at the state level in their field of responsibility;
- f) promoting the strengthening of entities directly involved in coastal management, through technical, financial and methodological support;
- g) preparing and supporting the broad promotion of the State Coastal Management Plan and the PNGC; and
- h) promoting the organization of the State Council.

Planning at the municipal level is essential for establishing territorial order. It is important that the municipalities, when planning their territories, consider policies relevant to the coastal zone. The municipalities also have a great capacity to supply essential information for the planning of the coastal zone at the

state and federal level. The municipalities, observing federal and state rules and standards, will plan and execute their coastal management activities in intergovernmental accordance and with the participation of society. The municipal responsibilities are:

- a) to prepare, implement and accompany the Municipal Coastal Management Plan, following the PNGC and the State Coastal Management Plan guidelines;
- b) to structure the municipal Coastal Management Information System;
- c) to structure, implement and execute the monitoring programmes;
- d) to promote the strengthening of the entities directly involved in coastal management through technical, financial and methodological support; and
- e) to promote the structuring of the municipal council.

In December 2004, Law No. 7.661 was specified by Decree No. 5.300. In Article 3, items I and II of this decree, the most common definition of the coastal zone is given:

The Brazilian coastal zone, considered a national patrimony by the Constitution of 1988, corresponds to the geographic space of the interaction of air, sea and land, including its resources, renewable or not, encompassing a maritime portion and a terrestrial portion, with the following limits:

The maritime portion: the space that extends for 12 nautical miles, measured from the base lines, thus including the totality of the territorial sea;

Land portion: the space composed of the limits of the Municipalities that suffer direct influence of the phenomena occurring in the coastal zone.⁵⁴

54 Federal Decree 5.300 of December 7, 2004.

This definition of the coastal zone reveals the great importance of this region for a country, which has 8,500 km of coastline. The Brazilian coast is divided into four regions: north, north-east, south-east and south.

From an environmental perspective, one possible way of managing fisheries characteristic to the coastal area (although it could also be applied to the EEZ) is the establishment of marine protected areas (MPAs) by means of UCs.⁵⁵ It is important to understand that the implementation of MPAs is not part of SEAP's policy. It is just starting to be studied by specialists and the government as a fisheries management tool, though in reality the management of MPAs in Brazil have contributed a lot to improving fisheries management. However, the need to restore fish stocks has drawn attention to the need to manage fishing using the ecosystem approach. Reserves are comparatively more effective than traditional tools of fishing management. They can be established more simply and incur similar or even lower implementation and management costs.⁵⁶ Of course, the implementation of MPAs should not be the only way of managing fisheries:

They offer one important strategy for maintaining biological diversity but should not be relied upon as a single solution for management. Reducing the effects of pollution from land and freshwater are important resource management strategies as are fishing gear restrictions, catch limits and other fisheries management techniques, such as timed closures.⁵⁷

The strategy to establish MPAs suggests a new paradigm for the management of fishing resources. In Brazil, it has become common to call these areas Natural Conservation Units. Since 2000, the country has a National System of Natural Conservation Units (SNUC).

The system, established by Law no. 9.985, encompasses the basic principles of environmental law such as the principle of public participation in the environmental management. Despite the fact that the system was designed basically for terrestrial areas, it may also be applied to marine sites with a great degree of effectiveness. To better understand the National System of Conservation Units, a brief analysis of its principal measures will be conducted focusing mainly on its participative elements.

b) *The National System of Natural Conservation Units – SNUC*

Until the promulgation of the SNUC Law, Brazil did not have a legally established system of UCs. The different categories were created by a few laws that treated the units in an isolated manner and with no planning to integrate the different categories.

Nevertheless, as Mauricio Mercadante reveals, since the 1970s, the planning and creation of UCs were being integrated as they matured in form.

Until the 1960s, the creation of national parks, national forests and forest reserves did not follow any broader planning.

UCs were established for aesthetic reasons and when politically favourable circumstances existed. There was not, then, a policy for the creation of a UC with the purpose, for example, of assuring the conservation of representative examples of Brazilian ecosystems. The idea of establishing a system of UCs composed of different types of management categories and administered in an integrated manner did not yet exist. There was no strategic relationship, for example, between the creation of national parks and biological reserves.

55 Art. 2 I of Federal Law No. 9.985/2000 – Conservation Unit: territorial space and its environmental resources, including the territorial waters, with important natural characteristics, legally instituted by the Government, with the objectives of conservation and defined limits, under a special administrative mechanism, to which suitable guarantees of protection are applied.

56 Jablonski, supra, note 33.

57 Dorfman, D. (2006). 'The Marine Realm'. In: Dudley, N. and Parish, J. *Closing the Gap – Creating Ecologically Representative Protected Area Systems: A Guide to Conducting the Gap Assessments of Protected Area Systems for the Convention on Biological Diversity*. Technical Series no. 24. Montreal: Secretariat of the Convention on Biological Diversity.

The planning and creation of UCs at a broader scale began to take off and produce the first results in the 1970s. In 1976, the work concluded with an analysis of priorities for nature conservation in the Amazon. This document was the foundation for the elaboration of the “Plan for the System of Conservation Units in Brazil”, the first phase of which was published in 1979 and the second in 1982.⁵⁸

It was only in 1988 that a law was drafted that would legally create the SNUC. The draft law was considered in the Federal Chamber of Deputies in 1992.⁵⁹ During the debate over the proposal, which lasted nearly eight years, efforts were made by the legislature and the social-environmentalist sector to add objectives, guidelines and mechanisms to the system that would allow the participation of civil society and traditional populations in the creation, management and implementation of UCs. In this period, the principle of participation of civil society in the management of natural resources was already established in important documents such as Agenda 21 and the Rio Declaration on Environment and Development.⁶⁰ Thus, due to the extensive participation of NGOs in the legislative process, the resulting Law No. 9.985/00 confirmed this participation in its text.

The objectives, guidelines and categories of the SNUC are defined in this law. The objectives are established in Article 4 and include a) promotion of sustainable development based on natural resources and the use of principles and practices of nature conservation in the development process (IV), b) giving social and economic value to biological diversity (XI) and protecting the natural resources needed for the subsistence of traditional populations, c) respecting and giving value to their knowledge and culture and promoting it socially and economically (XIII). To achieve these objectives, Article 5 of Law No. 9.985/00 creates guidelines that govern the SNUC. These guidelines include some aspects that refer to social participation:

- Assurance of the mechanisms and procedures needed for the involvement of society in the establishment and revision of the national policy for conservation units;
- Assurance of the effective participation of local populations in the creation, implementation and management of the conservation units;
- Seeking the support and cooperation of NGOs, private organizations and individuals for the development of studies, scientific research, and practices of environmental education;
- Ecological tourism and leisure activities, monitoring, maintenance and other activities of management of the conservation units;
- Encouraging the local populations and the private organizations to establish and administer conservation units within the national system;
- Considering the conditions and needs of the local population in the development and adaptation of the methods and techniques for the sustainable use of natural resources; and
- Guaranteeing alternative means of subsistence, or fair indemnification for the resources lost to the traditional populations whose subsistence depends on the use of natural resources existing within the conservation unit.

The SNUC consists of federal, state and municipal UCs and will be administered by the following agencies with the following remits (Art. 6):

- Consultative and Deliberative Agency: the National Environmental Council (CONAMA) with the responsibility of monitoring the implementation of the System;

58 Mercadante, M. (2001). ‘Uma década de debate e negociação: a história da elaboração da Lei do SNUC’. In: *Direito ambiental das áreas protegidas*, p.190. Rio de Janeiro: Forense Universitária.

59 Ibid., p.195.

60 See Principle 10 of the Rio de Janeiro Declaration on Environment and Development: ‘The best way to handle environmental issues is to assure the participation, at the appropriate level, of all the interested citizens’.

- Central Agency: the Ministry of the Environment, with the task of coordinating the System;
- Executive Agencies: Instituto Chico Mendes⁶¹ as lead agency, together with IBAMA, and the state and municipal agencies, which have the function of implementing the SNUC, subsidizing the proposals for creating and administering the federal, state and municipal UCs.

CONAMA is an organ that involves the sectors of society, allowing broad debate before decisions are made. The designation of CONAMA as the consultative and deliberating agency shows once again the importance of the participation of civil society in the management of the SNUC.

The SNUC expanded the responsibility of CONAMA, which was created by Art. 8 of Law No. 6.938/81, which established the National Environmental Policy.

Categories of Conservation Units

For the objectives of the SNUC to be reached, the categories of UCs were defined and divided into two groups: Integral Protection Units and Sustainable Use Units. The objectives of the SNUC are to meet the primary objectives of each one of the categories of UCs that are part of the system.⁶² Article 7 of the SNUC Law No. 9.985, regarding the division of the UC groups, established the basic objectives of the two different groups:

The basic objective of the Integral Protection Units is to preserve nature, permitting only the indirect use of its natural resources with the exception of those cases presented in this Law.

The basic objective of the Sustainable Use Units is to create a conservation of nature compatible with the sustainable use of its natural resource”.

It was the first time in Brazil that two different types of conservation units, with different objectives, were explicitly defined in this way.⁶³

There are five categories in the Integral Protection group: the Biological Reserve, the Ecological Station, the National Park, the Wildlife Refuge and the Natural Monument (Art.7). The first two categories are very similar and there would be no problem if they were unified.⁶⁴

The Sustainable Use group has seven categories: the Environmental Protection Area, Area of Important Ecological Interest, National Forest, Extractive Reserve, Fauna Reserve, Sustainable Development Reserve and Private Reserve of Natural Patrimony.⁶⁵

Creation of Conservation Units

According to Article 22 of the SNUC Law, UCs are created by the government. The creation of a UC must be preceded by technical studies and public consultation that allow the location, size and most suitable boundaries to be determined.

Articles 2-5 of Decree No. 4.340 of 22 August, 2004 stress the need for public consultation. Public consultation and technical studies demanded by law for the creation of a UC, except for the Biological Reserve and the Ecological Station, are essential to the success of unit placements. The exception established for the Biological Reserve and the Ecological Station must be seen as a legislative error because they are the most restrictive categories of the SNUC.

In addition to public participation in the creation of UCs, there is also a need to involve social actors in the management process. For instance, consultative and deliberative councils should be instituted to assist in the elaboration of management plans and serve for co-management of the units. Entities called *Organizações da Sociedade Civil de Interesse Público – OSCIP* (Civil

61 Instituto Chico Mendes was created by Law No. 11.516 of 28 August, 2007 and is now the main executive agency of the SNUC.

62 Mercadante, supra, note 58, p.204.

63 By contrast, the IUCN World Commission on Protected Areas uses six different categories based on the different management objectives. Worldwide, there are more than 140 different names applied to protected areas of various types. See Langley, S. (2001) The system of protected areas in the United States. In: *Direito ambiental das áreas protegidas*, p. 133. Rio de Janeiro: Forense Universitária.

64 Mercadante, supra, note 58, p.207.

65 Law No. 9985/00, Art. 14.

Society Organizations in the Public Interest) can play a major role in this regard. As Wiedmann notes:

Law No. 9.985 of 18 July, 2000, by instituting the National System of Conservation Units (SNUC), incorporated social participation in various articles. Item V of Article 5, which lists the guidelines for the system, includes those that 'encourage local populations and private organizations to establish and administer conservation units within the national system'. And Article 30 allows the management of conservation units by OSCIP's under a Partnership Agreement signed with the agency responsible for the unit.⁶⁶

Wiedmann also commented that the new social environmental policy seeking partnerships constitutes an important turning point away from the kind of command and control that has for so long dominated environmental policy.⁶⁷ This change of concept is essential for the successful implementation of UCs.

Two types of councils are called for in the SNUC Law. The first, the so-called deliberative council, has decision-making powers, while the second has consultative functions.

Decree No. 4.340, Article 20 establishes the responsibility of both council categories:

The Deliberative Council of the Conservation Unit is responsible for:

- Preparing its internal regimen, within a period of 90 days, from its installation;
- Accompanying the preparation, implementation, and review of the Management Plan for the Conservation Unit and if relevant, guaranteeing its participative character;
- Seeking integration of the UC with other UCs and protected territorial spaces;

- Pursuing compatibility between the interests of various social segments related to the unit;
- Evaluating the budget for the unit and the annual financial report prepared by the executive organ with regard to the objectives of the UC;
- Expressing its opinion in its consultative function, ratifying, in its deliberative function, and in the case of shared management (of the unit) contracting and dealing with the terms of the partnership agreement with the OSCIP;
- Monitoring the management of the OSCIP and recommending decisions for the partnership agreement when any irregularity is found;
- Delivering statements on activities that potentially may impact on the UC, its buffer zone, mosaics or ecological corridors; and
- Proposing guidelines and actions to share, integrate and improve the relationship with the population in the surroundings or within the unit, depending on the situation.

The UCs for Integral Protection must establish consultative councils as determined by Art. 29 of the Law:

Each conservation unit in the Integral Protection group will have a Consultative Council, presided over by the agency responsible for its administration and constituted by representatives of public agencies, civil society organizations, owners of lands located in the Wildlife Refuge or the Natural Monument, when that is the case, and in the hypothesis foreseen in § 2 of Art. 42, by the traditional resident populations, as determined by the regulation and by the act that created the unit.

It is clear that the law intends to maintain decision-making power within the State concerning questions related to units with integral protection.⁶⁸

66 Wiedmann, S.M.P. (2002). 'O controle estatal das parcerias em Unidades de Conservação – Bem de uso comum do povo'. In: *Unidades de conservação: atualidades e tendências*, p.115. Curitiba: Fundação O Boticário de Proteção à Natureza.

67 Ibid., p.116.

68 Ibid., p.117.

Two categories of Sustainable Use UCs have deliberative councils: the Extractive Reserves and the Sustainable Development Reserves. Within deliberative councils, considerable decision-making power is delegated to civil society, which must be well prepared to exercise this activity.

Brazil still has no Sustainable Development Reserves in marine areas. However, there are 11 federal marine Extractive Reserves, spread throughout the country's coastal regions.⁶⁹

The Extractive Reserve, according to Article 18 of the SNUC Law, is an area used by traditional extractive populations whose livelihoods are based on extraction and also on subsistence agriculture and the raising of small animals. The basic objectives of the extractive reserve are to protect the livelihood and culture of these populations and to ensure the sustainable use of the natural resources within the unit. The deliberative council managing the Extractive Reserve is governed by the agency responsible for its administration and is composed of representatives of public agencies, civil society organizations, and traditional communities resident in the area, as determined by the regulations and the legal act creating the unit.

Although the model was first established for populations that live by subsistence agriculture and raising small animals, the institution of well administered Extractive Reserves has proven to be very effective in marine and coastal areas.

Management Plan for Conservation Units

Article 27 of the SNUC Law provides that the UCs must have a management plan. Article 2 of the SNUC Law defines the management plan to be:

a technical document which, based on the general objectives of the conservation unit, establishes the zoning and rules that must govern the use of the area and the management of the natural resources, including the installation of the physical structures

needed to manage the conservation unit.

The planning must, as determined by the first paragraph of article 27, encompass the area of the UC, its buffer zone and any ecological corridors. This includes measures with the purpose of promoting its integration in the economic and social life of the neighbouring communities. In this context, the participation of society is essential, because this is the *sine qua non* condition for the community to be integrated with the UC. In this respect, paragraph 2 of Article 27 says:

In the preparation, revising and implementation of the Management Plan for Extractive Reserves, Sustainable Development Reserves, Environmental Protection Areas, and when applicable, National Forests and Areas of Important Ecological Interest, broad participation of the resident population will be assured.

Astonishingly, none of the categories cited belong to the Integral Protection group. However, this omission was rectified by methodological instructions which IBAMA was entrusted to elaborate on the basis of Article 14 of Decree No. 4.340. These instructions were published in 2002. They are aimed at all protection categories in the SNUC, including those belonging to the Integral Protection group. They determine that the planning must be continuous, gradual, flexible and participative.

The methodology established seeks the involvement of society in the planning and implementation of measures in the UCs and their surroundings. It acknowledges the importance of the UC and its contribution to society. At the same time, it allows the identification of leaders that can support the resolution of conflicts occurring in a UC and its surroundings:⁷⁰

Now considered indispensable, participative planning has been adopted by IBAMA since the 1990s and constitutes an established and highly recommended

69 See <http://www.ibama.gov.br/siucweb/listaUcCategoria.php?abrev=RESEX> (visited 25 April, 2006).
70 Methodological Instructions for Planning, IBAMA, 2002.

*practice. The success of this practice finds resonance in the SNUC Law, which adopted it as one of the legal precepts for the management actions of the Conservation Units. Thus, prepared under a participative focus, the Management Plan is organized and implemented with the involvement of society, governmental and non-governmental organizations, and in particular, in the case of the units located along the border, the institutions of national security, constituting a truly democratic and socialized instrument for the Conservation Units.*⁷¹

Even if the SNUC Law gives greater emphasis to land areas, when it comes to planning MPAs, it is possible, with society's participation in the elaboration of management plans, to resolve conflicts generated by the creation of the area. The participative process is very important and can be a decisive factor in the organization of society, principally of artisanal fishermen. They are very interested in the process and are (quite) willing to collaborate by interacting with other actors, contributing their knowledge of the area and presenting the basic demands of the sector.

Co-Management of Conservation Units

Among the forms of social participation, Article 30 of the SNUC Law calls for the possibility of co-management:

The conservation units can be managed by civil society organizations for the public's interest with objectives akin to those in the district, through the instrument to be signed with the agency responsible for its management.

As Claudio Maretti affirms:

Co-management is a more specific type of partnership that implies the shared management of a conservation unit by two or more organizations, with one of them being the institution legally responsible for the

*protected area, in which there is delegation of the management. This delegation can be total or partial, with partiality possible both in terms of the area as well as the management programmes.*⁷²

Shared management of UCs is a global trend and has already existed in Brazil before the SNUC Law, as Biderman and Telles do Valle observe:

*Although the first legal mention of shared management of conservation units arose only in 2000, this does not mean that it did not exist before. On the contrary, formal and informal sharing between government and NGOs of the management of Conservation Units, both federal as well as state, have existed for more than a decade, and it was based on this accumulated experience, in order to adapt to global trends, that the legislature decided to formally provide the possibility for co-management, opening a fertile field for the strategic partnership between the State and organized civil society in the protection of Brazilian biodiversity.*⁷³

The co-management process is regulated by Decree No. 4.340, which provides in Article 21 that the partnership agreement is the instrument to be signed with the responsible agency, as shown by Art. 30 of the SNUC. Such an agreement is based on Law No. 9.790 of 1999 which concerns the qualification of private non-profit entities such as OSCIPs. It establishes and defines the partnership agreement and other measures. This law is considered a landmark for civil society organizations ('the third sector') in Brazil. OSCIPs are non-profit entities that, in compliance with the requirements of Law No. 9.790, are accredited by the Ministry of Justice. The criteria for an OSCIP to manage a UC are expressed in Article 22 of Law No. 9.790 and parts of Decree No. 4.340:

The OSCIP that fills the following requirements can manage a conservation unit:

⁷¹ Ibid.
⁷² 'Desafios e Oportunidades para a Co-gestão'. In: Seminário Internacional – Construindo um Modelo de Co-gestão de Unidades de Conservação para o Estado de São Paulo. São Paulo, May 5, 2003 (International Seminar – Building a Model for Co-Management of Conservation Units for São Paulo State).
⁷³ Biderman and Telles do Valle, *supra*, note 31.

(i) – has among its institutional objectives the protection of the environment or the promotion of sustainable development; and

(ii) – proves that it has conducted activities for environmental protection or sustainable development, preferably at the conservation unit or in the same biome.

The participation of society in councils and/or through OSCIPs by means of co-management, is still a process that must be strengthened by government as well as NGOs. Nevertheless, it provides a great opportunity for UCs to reach their management objectives.

III. Case study: the Arvoredo Biological Marine Reserve

The case presented here demonstrates how management of a MPA can affect the management of fishing resources, considering social participation in decisions that directly affect coastal communities and their relation with marine and coastal ecosystems. It involves the management of the Arvoredo Biological Marine Reserve, a marine UC located on the northern coast of Santa Catarina (State). The analysis of the management of the reserve is based on the previously mentioned Law No. 9.985 of 2000 that established the SNUC in Brazil. The case demonstrates how instruments of social participation contained in the law can help in the management of marine resources in general. In Brazil, the only activities permitted in a Biological Reserve are scientific research and environmental education. It is a UC within the group of integral protection and therefore fishing is legally not possible within the reserve.

a) Location

As a place of high biological diversity, the Arvoredo Biological Marine Reserve deserves the special attention of the Brazilian government. The archipelagic reserve located in the coastal region north of the city of Florianópolis, the capital of Santa Catarina, protects a representative sample of ecosystems of the region. The reserve lies at the southern limit of Brazil's south-eastern coastal region, which stretches from Cabo Frio, Rio de Janeiro to Cabo de Santa Marta, Santa Catarina. Extreme seasonal climatic changes allow the appearance of cold climate species in winter, such as the Sea lion (*Arctocephalus*) and the Southern right whale (*Eubalaena australis*), which share the same space with

tropical species.⁷⁴ This is made possible by the influence of two ocean currents: the warm-water Brazil Current from the north and the cold-water Malvinas Current from the south.⁷⁵

b) Creation of the reserve

The Arvoredo Archipelago, composed of the islands of Arvoredo, Galé and Deserta and by the Calhau de São Pedro, has been part of the Arvoredo Biological Marine Reserve since 1990. The process for the creation of the reserve began at the end of the 1980s. It is the result of an environmental movement that sought to protect the area from predatory and unorganized actions, such as fishing and tourism activities.

The efforts of the environmentalists were recognized by IBAMA, which conducted complementary studies for the creation of the UC. Contrary to the expectations of society, which had called for the creation of a marine national park, IBAMA technicians suggested the creation of a biological marine reserve. The reserve was created by Decree No. 99.142 of 1990, with the goal of protecting a representative sample of ecosystems of the coastal region of Santa Catarina Island, its neighbouring islands and islets, waters and continental shelf and all associated natural resources.

A planning seminar was held in March 2003 that included the principal actors involved with the UC. The participants in the seminar identified the following problems in the process of creation and management of the reserve:

74 Environmental Monitoring Program of the Arvoredo Biological Marine Reserve, Santa Catarina, Brazil. Paper presented at the 1st Latin American Congress of National Parks and Other Protected Areas, held May 21-28, 1997, in Santa Marta, Colombia.

75 Report of the Bioregional Management Project (IBAMA, 2003).

- The exclusion of the Baía do Farol (Lighthouse Bay);
- The reserve was created without the consultation of the parties involved;
- Questionable limits, established without knowledge of the region;
- There was no complete study to establish this category of UC;
- No appropriate territorial area;
- Creation of the reserve without knowledge of the society; and
- Prohibition on fishing the species that pass through the regional waters (*anchova*/blue fish, *tainha*/mullet).⁷⁶

The list reveals a lack of communication between government and society. The communities that inhabit the surroundings of the reserve were hardly involved. The management agency (IBAMA) has a bad reputation in the region because of its harsh punishment of breaches of environmental rules. Rather, IBAMA should have considered showing the communities why it was important to create the reserve and how this could help to improve the social and economic quality of life of the local population.

c) *Fishing activity in the reserve*

Fishing has been practised in Santa Catarina since pre-history. This is revealed by the presence of archeological sites. The region of the Arvoredo Reserve represents this history. From the time of our pre-historic ancestors, through the eras of the Carijós Indians and the Portuguese colonizers, fishing has been an important economic activity for the resident populations. There are now 10 fishing colonies in the communities around

the Arvoredo Biological Marine Reserve, which represent some 15,000 fishermen. Nine of these colonies are dependent on artisanal fishing conducted in the region. In addition to artisanal fishing, industrial fishing is also conducted in the Arvoredo region.

The artisanal fishermen were the most affected by the creation of the UC. It caused deep indignation in the fishing communities. Many fishermen still do not understand today why they cannot catch the so-called 'passing' fish at this location. In most cases, rules were laid down without the participation of the community and were afterwards enforced without the community being properly informed of their creation. Nevertheless, the fishermen now respect, in a certain way, the limits of the reserve, although many things have changed in the region since its creation 17 years ago.

One issue that has been highly criticized in relation to the Arvoredo Biological Marine Reserve is related to Article 4 of the decree that created the reserve. This article declared that catching juveniles of any species was prohibited in the region north of parallel 27°00'S, and south of parallel 27°30'S, bordered to the west by the continental coast line and to the east by meridian 48°18'W. In practice, Article 4 is largely ineffective because most fishing methods in the region end up capturing juveniles, which are present in the bycatch or are captured on purpose. Collection of mussel seeds, used for mariculture in the region, and fishing for live bait, conducted by the tuna fleet,⁷⁷ are some types of fishing that capture juveniles in the prohibited region. It is common to observe live bait fishing occurring openly near beaches in the region. The purpose of Article 4, according to the reasons given for the decree that created the reserve, is to allow for declining populations to recover.⁷⁸ Until today, this has not been successful because it has been disregarded by both artisanal and industrial fishers.⁷⁹ The inspection system is too weak to make them comply.

76 Information from a report of a planning workshop for the Reserve, promoted by APRENDER Entidade Ecológica (Ecological Entity APRENDER), as part of the project to prepare the management plan for the UC. Thirty participants in the workshop represented the principal social segments involved with the UC.

77 Wahrlich, R. (1999). *A Reserva Biológica Marinha do Arvoredo (SC) e a atividade pesqueira regional*, p.100. Dissertação de Mestrado em Geografia. Centro de Filosofia e Ciências Humanas da Universidade Federal de Santa Catarina. Florianópolis.

78 Exposition of motives of Decree No. 99.142/90.

79 Wahrlich, supra, note 77, p.129.

Another provision, IBAMA Rule No. 51 of 1983, prohibits trawling in any form in areas such as bays, coastal lagoons, canals and estuaries in Santa Catarina. By implication this stopped trawling in the Bay of Tijucas, which is part of the reserve's buffer zone. Since Rule 51/1983 took effect, combined with Article 4 of the decree that created the Arvoredo Biological Marine Reserve, much of the fishing activity in the region has been conducted illegally. This has generated indignation principally among artisanal fishermen who have fed their families with the catch from the region for many years. These rules did not have any great practical effect and fishermen were always running the risk of having their fishing equipment and their catch confiscated by inspectors when these were active.

d) Projecting a new approach

With the advent of the SNUC Law, the management of the Arvoredo Biological Marine Reserve began to adopt a new management paradigm. The enactment of the law allowed for the opening up to society of the management process of the UC. This was directly reflected in the management of fishing in the region around the reserve.

Based on the new guidelines established in the SNUC Law, the IBAMA office in Santa Catarina sought to reach an understanding with the local communities in order to establish a partnership for the maintenance and management of the Arvoredo Biological Marine Reserve. Negotiations between IBAMA and the NGO APRENDER resulted in the signing of two documents. One of them, the Technical Term of Cooperation (TCT), was signed on 27 August, 2001 and was published in the *Diário Oficial da União* on 18 September of the same year. The purpose of the TCT is the implementation and realization of activities related to environmental education, research, exchange of information and mutual assistance necessary to the consolidation of the UC *Arvoredo Environmental Reserve*.⁸⁰ Days before the signing of this document, another agreement was signed which, in addition to IBAMA and APRENDER, involved PETROBRAS.

The agreement was the fruit of Administrative Process No. 02001.000110/92-05 which resulted in the company's commitment to finance an Integral Protection UC 'through the participation of PETROBRAS in the maintenance of the Arvoredo Biological Marine Reserve'.⁸¹

After the first few months of the partnership, APRENDER began to structure its support programme for the management of the reserve and to collaborate effectively in the implementation of the UC. The programme prepared by APRENDER involved three projects. Two were coordinated by the APRENDER team: the Integral Protection Project and the Project for the Elaboration of the Management Plan for the Arvoredo Reserve and Consolidation of its Implementation Mechanisms. A third project, the Tijucas Bay Responsible Fishing Project, was coordinated by the Universidade do Vale do Itajaí (UNIVALI). This project also involved IBAMA and fishing colonies Z-9, Z-10, Z-22 and Z-25, all located in municipalities around the Arvoredo Biological Reserve.

The three projects show the broad scope of issues that must be dealt with in the management of UCs. The change of paradigm in the management of marine resources, especially fishing, through a systematic approach requires continuous, gradual and flexible work based on environmental education, involvement of society, and scientific research. The principal project in this context was the Elaboration of the Management Plan for the Arvoredo Reserve and Consolidation of the Implementation Mechanisms. The Integral Protection project was an accessory to this and the Responsible Fishing Project in the Tijucas Bay is already part of the implementation of the Reserve Management Plan.

The first phase of the Integral Protection Project was carried out in November 2002-July 2003. Its general objective was to support the management of the Arvoredo Biological Marine Reserve and to

80 *Diário Oficial da União*, 18 September, 2001, p.55. NB the publication mistakenly referred to the unit as the Arvoredo Environmental Reserve, while the correct name is the Arvoredo Marine Biology Reserve.

81 Ibid.

strengthen its various administrative lines. This was accomplished through inspection and environmental perception as well as education activities in the area of the reserve and the surrounding region. These were based on a systemic, holistic and permanent interdisciplinary approach, which sought the effective implementation of the UC in a decentralized and participatory form, integrated with various social segments.⁸²

The specific objectives of the project were:

- To carry out monitoring and awareness-raising activities in the area of Arvoredo Reserve and the surrounding region;
- To survey levels of environmental perception and education in the region surrounding the Arvoredo Reserve, in order to identify the social environmental context in which the reserve exists and identify areas that should be recovered, protected and occupied;
- To survey the support needed for the future elaboration of a Proposal for Environmental Perception and Education, to be developed in a continuous and participative form, through introduction into schools and with institutional contacts, to support integration and cooperation among different social segments;
- To visit the surrounding municipalities (Florianópolis, Governador Celso Ramos, Tijucas, Bombinhas and Porto Belo), providing information via talks and the distribution of an information bulletin, thus promoting Arvoredo Reserve and the work undertaken by the various institutions for its maintenance and conservation;
- To collect information through the application of guided research on the perception of the surrounding communities towards Arvoredo Reserve and the degree of environmental

awareness of the residents and visitors to these localities;

- To establish institutional contacts and make future partnerships for the development of the project with political agents, public agencies, universities, fishing colonies, NGOs, and other representatives of civil society viable;
- To support integration and cooperation among representatives of three sectors of civil society, through the example of the partnership between IBAMA-APRENDER-PETROBRAS, the State Environmental Police (CPPA)⁸³ and the Coast Guard in order to enhance environmental education and preservation; and
- To provide logistic support to the realization of the project for preparation of the Reserve Management Plan (Agreement APRENDER/FNMA).⁸⁴

These objectives reflect the new concern of the UC to work closely with the community, given that in the 13 years since its creation, IBAMA's image has been quite poor in these communities because it only conducted inspection and control activities. IBAMA's bad reputation in the community reflects the enormous difficulty in the relationship between society and government. In this case, a NGO can seek a better relationship with the surrounding communities, showing that the reserve does not belong to the agency but to the whole of society. It is also noted that the project was executed in parallel to the project for the preparation of the Management Plan for the unit. This is why the principal actors related to the reserve actively participated in the preparation of the Plan.

e) Preparing the Reserve's management plan

As required by Article 27 of the SNUC Law, UCs must have a management plan, which is defined in Article 2, item XVI. The plan is a technical document that, based on the general objectives of the UC, establishes

82 *Projeto Proteção Integral* (Integral Protection Programme).

83 *Companhia de Polícia de Proteção Ambiental* (State Environmental Police).

84 *Fundo Nacional do Meio Ambiente* (National Fund for the Environment).

its zoning and rules that govern the use of the area and the management of the natural resources, including the installation of the physical structures needed to manage the UC. The planning must encompass the area of the UC, its buffer zone and ecological corridors, and include measures aimed at promoting its integration in the economic and social life of the neighbouring communities.

The project proposal for the preparation of the Management Plan for the Arvoredo Biological Marine Reserve was prepared by APRENDER in partnership with IBAMA and CPPA. The project was executed through the following steps:

- A technical meeting with researchers at the reserve;
- A survey of the reserve and its surroundings;
- A meeting with researchers participating in the survey;
- Meetings with the reserve's management team;
- Meetings with institutional contacts;
- A Participatory Planning workshop;
- A technical meeting about zoning at the reserve;
- A meeting about inspection and control;
- Technical meetings about the buffer zone;
- Meetings with the management plan supervising team;
- Strategic meetings of the planning team;
- A training workshop for potential board members of the council of the reserve;
- A seminar to present and discuss the plan; and
- A seminar for public presentation of the plan.

Note from the steps described that the project seeks the participation of society at various stages in the planning process, as laid down in the guidelines of SNUC and IBAMA's Methodological Plan. The range of actors participating in the project is very important for the later implementation of the plans because the decisions taken by the planning team will be based on the knowledge and desires of those who will interact daily with the UC.

With legislation prohibiting fishing within the reserve, the participation of fishermen and technicians from the fishing area was essential for the planning of the reserve's buffer zone. This is mainly due to the reasons presented above, such as Article 4 of the decree that created the reserve and IBAMA Rule 51 of 1983. With the planning of the buffer zone in observance with the demands of the artisanal fishing sector,⁸⁵ technical studies were conducted that allowed a zoning for the region that changed the previous rules.

The management plan for the Arvoredo Biological Marine Reserve was finalized after 20 months of work. The text was incorporated into the Brazilian legal order by means of IBAMA Rule no. 81 of 2004. The Management Plan marked out a buffer zone and changed the rules on fishing for juveniles established by the previously mentioned, and controversial, Article 4. It also altered the ban on trawling, previously prohibited in the Bay of Tijucas by Rule No. 51 of 1983. The new rule sought a more harmonious way of resolving the conflicts in the buffer zone while guaranteeing the conservation of fishing resources in the region.

The new rules for fishing activities in the reserve's buffer zone are as follows:

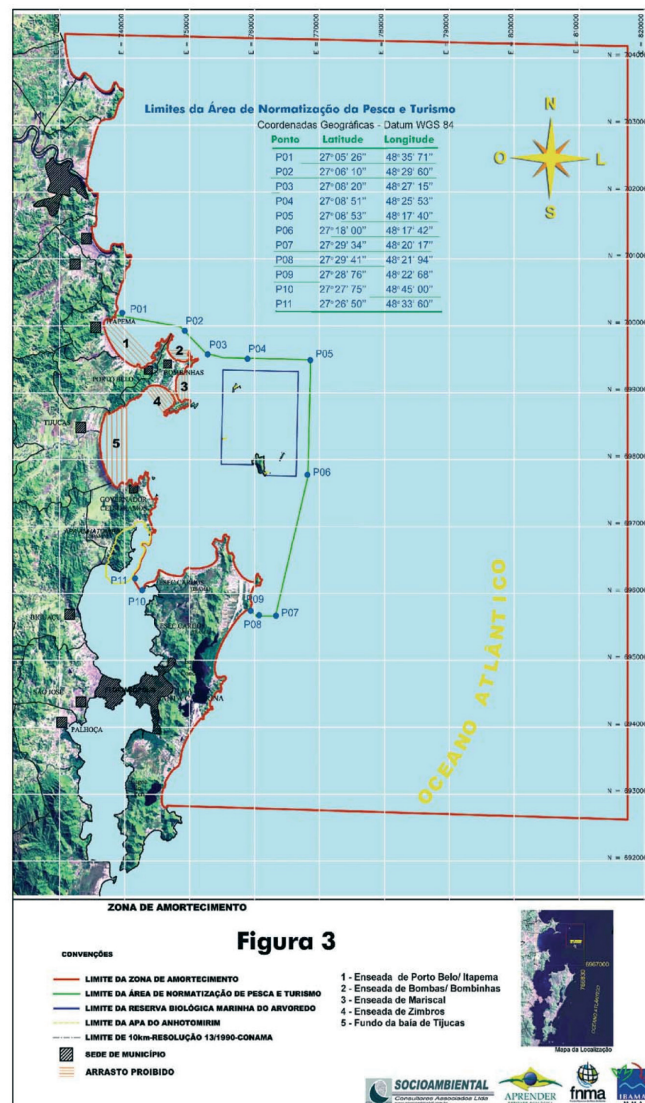
- Fishing in the area of the buffer zone, as regulated by the Fishing and Tourism Regulation, is prohibited for large boats (more than 10 tons gross).
- Trawling is allowed for boats smaller than 10 tons gross, except in some areas of the bay and its coves.

85 Note that representatives of the industrial fishing sector did not participate in this because they did not accept the invitation to participate in the process of elaboration of the management plan.

- Around the islands, close to the reserve's borders, nets must be kept a minimum distance of 50 metres away from the coast, as determined by current law (IBAMA Decree No. 143/1994).
- Trawling is restricted to five distinct locations within the buffer zone. These include part of the Tijucas Bay, Zimbros Cove; Mariscal Cove; Bombas and Bombinhas Cove; and the Porto Belo Cove.

The figure below shows the demarcation of the three zones: the buffer zone, the area of regulation of fishing and tourism; and the Arvoredo Biological Marine Reserve.

Figure 2.



Source: *O Farol*.⁸⁶

- **Limit of the Buffer Zone**
- **Limit of the Area of Regulation of Fishing and Tourism**
- **Limit of Arvoredo Biological Marine Reserve**

With these new rules, artisanal fishermen are the only ones who can operate in the region surrounding the reserve. Industrial fishing continues to be prohibited. As they were not pleased with these new rules, the Fishing Industry Union filed suit to change the rules.

f) *The lawsuit against the management plan*

In the lawsuit, the Industrial Fishing Union sought to have declared null and void the act that prohibited boats of more than 10 tons gross (precisely those used by its members) from fishing (for which they were authorized by the Special Secretariat for Aquaculture and Fish/Santa Catarina Office) in the buffer zone of the Arvoredo Marine Biological Reserve, created by the Reserve Management Plan on 1 September, 2004. The plaintiff alleged that this stipulation of the management plan was illegal and unconstitutional. The allegations made by the Union, as expressed in the judge's decision issued 8 November, 2006, were the following:

- a) The principle of equality was not respected (Art. 5 of the Constitution), given the absence of preliminary studies comparing the environmental impact and the socio-economic factors of boats larger and smaller than 10 tons gross. The plaintiff affirms that smaller trawlers do more harm to the environment than larger ones, because their equipment is less good.
- b) IBAMA did not clearly state what criteria were used to distinguish, in relation to the buffer zone, the fishing conducted by boats larger than 10 tons gross from that undertaken by lighter boats.
- c) The plaintiff affirms that the criteria justifying the exclusion of the affiliates from the buffer zone were more 'socio-economic than biotic' and aimed to allow artisanal fishermen with smaller boats, that are not allowed to navigate in high seas, to carry out their activities in the buffer zone.

- d) Given the absence of an invitation, the Union was not given an opportunity to defend the interests of the group that it represents in the Participatory Planning workshop held from 12-14 March, which met to discuss the Management Plan. Here, it is pertinent to mention that there is not just one Union of Industrial Fishermen in the state, but a number of them, according to the region of fishing undertaken by the members.

Based on the positions of the parties and having followed the proper legal process, the Union's request was ruled unfounded by the judge of the environmental court of the Federal Justice in Florianópolis, Santa Catarina.⁸⁷

Concerning the compatibility of the management plan with the principles of equality and resource protection, the judgement argued:

The plaintiff's allegation that the exclusion of industrial fishing in the Area of Regulation of Fishing and Tourism is discriminatory and infringes on the principle of equality makes no sense when it argues that the trawling conducted by the smaller boats, in addition to harming the environment, does not account for the sustenance of the large majority of fishermen.

Given that it is generally conducted with one or two boats, which drag a net over the bottom of the sea, taking everything in front of it, turning the most superficial substratum into a large cloud of 'dust', disrupting algae, sponges, starfish, molluscs and crustaceans that live there, there is no doubt that trawling is extremely harmful to the environment and the conservation of fishing stocks. In this process, many unwanted fish, molluscs and crustaceans are captured, technically known as 'bycatch'. This normally includes larva and the juveniles from shrimp and commercial fish, which are too small to sell and for this reason are discarded. As a result of this practice, nearly all of the marine life captured

⁸⁷ *Sindicato da Indústria da Pesca de Florianópolis v. IBAMA. Processo No. 2005.72.00.008766-3/SC. Justiça Federal Santa Catarina. Sentença de primeiro grau. Florianópolis: 2006, available at www.jfsc.gov.br.*

in the net die, even if returned to the sea, either because of the time they are out of the water, or because they are crushed.

Therefore, it is unacceptable that the referred to predatory form of fishing is used as an argument by the author to permit, in the same region, industrial fishing in a mean-spirited attempt of the old saying 'if everyone is being destructive, I want to destroy as well'. One destructive activity cannot justify the practice of another.

In various parts of the country, trawling has been limited or prohibited, a measure that sooner or later will be extended over the entire area of the Arvoredo Reserve. Nevertheless, one cannot simply analyze the issue strictly from an ecological and scientific perspective, given that this type of fishing has been conducted for decades in the region, a tradition passed from father to son for generations. This is aggravated by the fact that the large majority of artisanal fishermen have little schooling and their only known source of income is usually this type of fishing.

A change of habits, in this case, can only be implemented from the moment that environmental education effectively reaches the fishing colonies with the goal of implementing viable alternatives for subsistence (...). These alternatives should also be extended to the crew of the boats of the plaintiff's members, because it is a fact that the decline of fishing in the world has intensified, so that sooner or later they will lose their employment in any case.

For this reason IBAMA is correct when it concluded that the current permission for the artisanal fishermen to practise fishing in the area in question clearly has an element of social assistance, as determined by the sole paragraph of Art. 8 and Sect. 8 of Art. 195 of the Federal Constitution of 1988.

The creation of marine reserves throughout the world has, among other goals, the aim of protecting fishermen, whether artisanal or industrial, because it allows an increase in fish reproduction in adjacent areas, according to information found in the National

Plan of Protected Areas of the Ministry of the Environment (<http://www.mma.gov.br/planoap.pdf>). In the case of the Arvoredo Reserve, this increase in fish stocks is particularly found in the buffer zone, which is the area immediately surrounding the reserve, offering support to thousands of families for whom fishing is their principal subsistence activity.

The Management Plan was prepared following legal and methodological principles established by the federal government. In this sense, the broad participation of those interested in the various stages of planning was guaranteed. Since IBAMA's methodological plan restricted the planning workshop to 35 participants, representatives of the Industrial Fishing Union of Itajai were the only ones invited. Nevertheless, besides not participating in the workshop, the industrial sector did not contact IBAMA at any time in order to participate in the process. The Union in Florianópolis is now alleging that the population did not adequately participate in the preparation of the new rules. The judge's response to this claim is the following:

Concerning the alleged lack of consultation of the population directly affected, as mentioned in the documentation included in this suit, it is concluded that the legal and formal requirements for its approval were properly observed. In relation to this issue, the lucid and clarifying report of the Federal Public Ministry at sheets 339/344 should be adopted, in particular when it affirms:

'The Public Hearing was planned in a convenient and scientific manner, and called the Participatory Planning Workshop. In this sense, it should be highlighted that the discussion and preparation of the Arvoredo Reserve management plan was assisted by the Federal Public Ministry, by its technical assistant, and the participation of various representatives of the communities and the local authorities (from the area of influence of the unit) was corroborated.'

The absence of the plaintiff, as well as of any other interested party, in the event of discussions about the

*preparation of the plan does not compromise its validity in any way.*⁸⁸

For the reasons mentioned above and others found in the filings of the suit reported here, the request of the plaintiff was declared unfounded. The lack of basis for the suit filed by the Union has reinforced the provisions established in the Management Plan and provides legal security for those applying the regulations, in this case IBAMA.

In practice, inspection of fishing in the region is still precarious. However, artisanal fishermen are now allied with the Instituto Chico Mendes and IBAMA in combating predatory industrial fishing. A good programme to raise awareness could turn fishermen into active citizens in the defence of their exclusive right to fish in the area.

g) Responsible fishing in Tijucas Bay

The case study ends with an account of how the general rules elaborated for the Arvoredo Reserve and its buffer zone were once more modified in one smaller area, the Tijucas Bay, and how this was made in a participatory way.

Proposed and coordinated by UNIVALI and financed by the National Fund for Environment/MMA, the project Responsible Fishing in Tijucas Bay also involved IBAMA, APRENDER and fisher colonies Z-9, Z-10, Z-22 and Z-25, all located in municipalities around the Arvoredo Biological Reserve. Inspired by documents such as the FAO's *Code of Conduct for Responsible Fisheries*, the project's objective was to survey the fishing activity in the region and

make a plan of action with the participation of the direct users of fishing resources.

Many activities such as the characterization of the artisanal fishing fleet in Tijucas Bay, a rapid participative appraisal of the fishing of the Seven-whisker shrimp (*Xiphopenaeus kroyeri*), the dissemination of the new rules created by the management plan of Arvoredo Reserve, participative monitoring of the artisanal fishing and research on the socio-economic profile of the artisanal fishers in the region of Tijucas bay, were carried out during the project.

The project does not focus directly on the Arvoredo Reserve but is very important for the implementation of the reserve since it works in the buffer zone and the surrounding area of the reserve. One of the positive results of the project was mobilizing and organizing the artisanal fishers to change the closed season on the Seven-whisker shrimp in Tijucas Bay. The previous rule banned fishing during the most productive season. The new partnership between scientists and fishers, putting together scientific and traditional knowledge, came to the conclusion that the closed season in this specific area could be redefined. This had been proposed earlier by scientific experts in a meeting in 2001. The proposal had come to the attention of the fishers who collected 650 signatures and submitted a petition to IBAMA. After a number of meetings and negotiations, IBAMA in 2006 issued Normative instruction No. 91 establishing the closed season at a different time of year. This matched with the proposal submitted by the scientists and was supported by the fishers of the Tijucas Bay area.

88 Information taken from the decision issued for Suit No. 2005.72.00.008766-3/SC on 8 November, 2006 – www.jfsc.gov.br. The plaintiff has appealed but as of September 2008 the Regional Federal Tribunal had not returned a decision.

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List of abbreviations

AEP	<i>Áreas de Exclusão de Pesca (No-take areas)</i>
AL	<i>Alagoas State</i>
APRENDER	<i>Ações para a Preservação dos Recursos Naturais e Desenvolvimento Econômico Racional (Actions for the Preservation of Natural Resources and Reasonable Economic Development)</i>
CF	<i>Constituição Federal (Federal Constitution)</i>
CIRM	<i>Comissão Interministerial para os Recursos do Mar (Inter-ministerial Commission for Ocean Resources)</i>
CNBB	<i>Confederação Nacional dos Bispos do Brasil (National Conference of Bishops of Brazil)</i>
CNIO	<i>Comissão Nacional Independente sobre os Oceanos (National Independent Commission for the Ocean)</i>
CNP	<i>Confederação Nacional dos Pescadores (National Confederation of Fishermen)</i>
CONAMA	<i>Conselho Nacional do Meio Ambiente (National Environmental Council)</i>
CONAPE	<i>Conselho Nacional de Aquicultura e Pesca (National Council of Aquaculture and Fishing)</i>
CONEPE	<i>Conselho Nacional de Pesca e Aquicultura (National Council of Fishing and Aquaculture)</i>
CPG/Demersais	<i>Comitê Consultivo Permanente de Gestão dos Recursos Demersais de Profundidade (Permanent Consultative Council for the Management of Deep Demersal Resources)</i>
CPPA	<i>Companhia de Polícia de Proteção Ambiental (State Police for Environmental Protection)</i>
DPA	<i>Departamento de Pesca e Aquicultura, MAPA (Department of Fishing and Aquaculture)</i>
EEZ	<i>Exclusive Economic Zone</i>
FNMA	<i>Fundo Nacional do Meio Ambiente (National Fund For Environment)</i>
GEP	<i>Grupo de Estudos Permanente (Permanent Study Group)</i>
GI-GERCO	<i>Grupo de Integração do Gerenciamento Costeiro (Group for Integration of Coastal Management)</i>
IBAMA	<i>Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Institute for the Environment and Natural Resources)</i>
ICCAT	<i>International Commission for the Conservation of Atlantic Tunas</i>
ICMS	<i>Imposto sobre Operações Relativas à Circulação de Mercadorias e sobre Prestações de Serviços de Transporte Interestadual e Intermunicipal e de Comunicação (Tax on the Circulation of Goods, Services, Transport and Communication)</i>
IN	<i>Instrução Normativa (Normative Instruction)</i>
IUCN	<i>International Union for Conservation of Nature</i>
LEPLAC	<i>Plano de Levantamento da Plataforma Continental Brasileira (Plan for Surveying the Brazilian Continental Shelf)</i>
MAPA	<i>Ministério da Agricultura, Pecuária e Abastecimento (Ministry of Agriculture, Animal Husbandry and Food Supply)</i>
MMA	<i>Ministério do Meio Ambiente (Ministry of the Environment)</i>
MONAPE	<i>Movimento Nacional dos Pescadores (National Fishermen's Movement)</i>
MPA	<i>Marine Protected Area</i>
NGO	<i>Non-governmental Organization</i>
OSCIPs	<i>Organizações da Sociedade Civil de Interesse Público (Civil Society Organizations in the Public Interest)</i>
PAF-ZC	<i>Plano de Ação Federal para a Zona Costeira (Federal Action Plan for the Coastal Zone)</i>
PETROBRAS	<i>Petróleo Brasileiro S/A</i>
PNGC	<i>Plano Nacional de Gerenciamento Costeiro (National Coastal Management Plan)</i>
PNMA	<i>Política Nacional do Meio Ambiente (National Environmental Policy)</i>
PNRM	<i>Política Nacional dos Recursos do Mar (National Marine Resources Policy)</i>

REVIZEE	<i>Programa de Avaliação do Potencial Sustentável dos Recursos Vivos da Zona Econômica Exclusiva (Programme for the Evaluation of the Sustainability Potential of Living Resources in the Exclusive Economic Zone)</i>
RGP	<i>Registro Geral da Pesca (General Fishing Register)</i>
SEAP	<i>Secretaria Especial de Aquicultura e Pesca da Presidência da República (Special Secretariat for Aquaculture and Fishing)</i>
SIGERCO	<i>Sistema de Informação do Gerenciamento Costeiro (Coastal Management Information System)</i>
SISNAMA	<i>Sistema Nacional do Meio Ambiente (National Environmental System)</i>
SNUC	<i>Sistema Nacional de Unidade de Conservação da Natureza (National System of Natural Conservation Units)</i>
SUDEPE	<i>Superintendência de Desenvolvimento da Pesca (Superintendence of Fishing Development)</i>
TCT	<i>Termo de Cooperação Técnica (Technical Term of Cooperation)</i>
UC	<i>Unidades de Conservação (Conservation Units)</i>
UN	<i>United Nations</i>
UNCED	<i>United Nations Conference on Environment and Development</i>
UNCLOS	<i>United Nations Convention on the Law of the Sea</i>
UNIVALI	<i>Universidade do Vale do Itajaí</i>

5 Promotion and Management of Marine Fisheries in Mexico

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Summary

The main concern of Mexican fisheries management is overfishing of several species, fleet overcapacity, overcapitalization, limited addition of value to fishing products and lack of compliance with fishing regulations in inshore waters, the EEZ or the open sea.

During the past two decades, fishing activities in Mexico have shifted from government actions promoting fishing efforts to a more sound use of marine resources with a management approach based on better information and analysis inputs, as well as with a greater

participation of environment-related federal offices (e.g. Ministry of the Environment and Natural Resources) and of fishing resource users themselves.

The new Fishing Law promotes a more participative fisheries management through the division of competences between the Federation, the States and the Municipalities, as well as through greater participation of fishermen, industry, and other fishing stakeholders like academia and non-governmental organizations (NGOs).

I. Environmental and socio-economic background

1. Geography

Mexico comprises a land area of 1,964,375 km², including an Exclusive Economic Zone (EEZ) of 3,149,920 km², and has a long coastline of approximately 11,500 km, divided into two parts: a) The Gulf of Mexico and Caribbean Sea, and b) the Mexican Pacific Ocean. In 2001, the population totalled 100,456,000 inhabitants, and the gross

national product (GNP) was US\$ 623,900 million, with fisheries accounting for 0.8% of the total.¹ Fisheries accounted for 247,765 direct jobs in 2001 (fishing and aquaculture). Fishing trade amounted to US\$ 184.6 million in imports and US\$ 602 million in exports in 2001.²

2. Fisheries

There are a total of 99 different types of fisheries in Mexico harvesting 636 species, which account for 90% in terms of total fishing production and value, respectively. Seventy-one fisheries are deemed maximally exploited, 17 could be further expanded, and 22 are declining.³ About 20% of fisheries are

overexploited if by overexploitation it is understood that a species is fished beyond its renewal capacity.⁴ Fin fish is the sector experiencing the most serious problems due to the ever growing increase in fishing effort over the past years.

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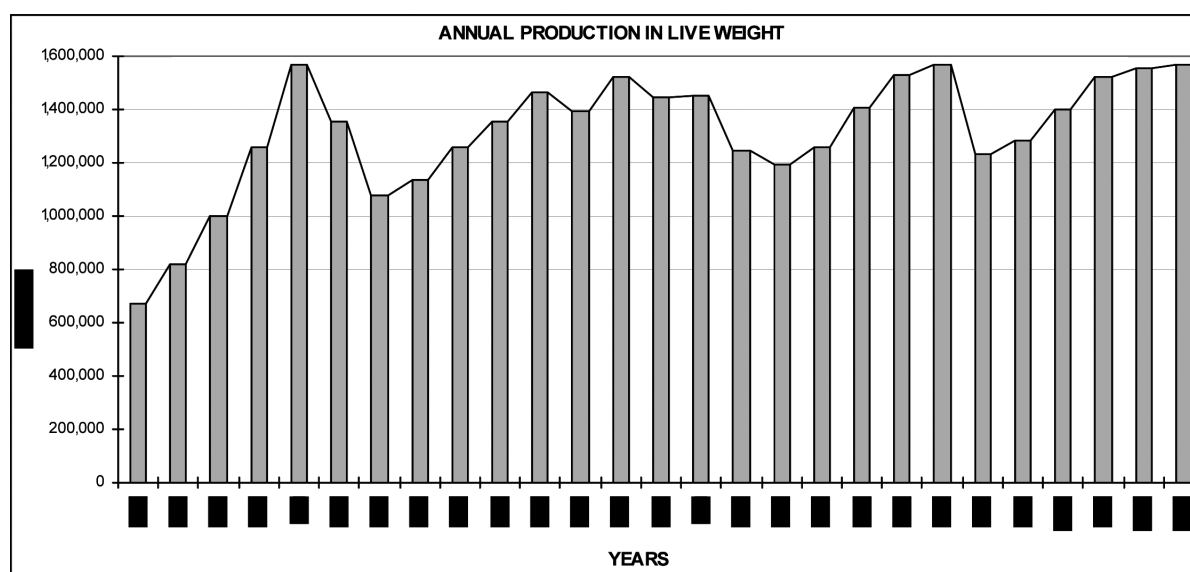
1 All financial information has been calculated using the exchange rate of Mex\$ 11.3 pesos/US\$ 1.

2 FAO. (2003). 'Informative summary on fishing per country: Mexican United States'. Available at: <http://www.fao.org/fi/fcp/es/MEX/profile.htm>.

3 SEMARNAT. (2002). *Compendio de Estadísticas Ambientales*. México, D. F.

4 Ibid.

Figure 1. Total national catch



Source: *Anuario Estadístico de Pesca 2003* (2003 Fisheries Statistics Yearbook).

Fisheries in Mexico cover a wide variety. They rely on massive offshore resources, generally of low value, plus inshore resources, some of which are highly valued (abalone, lobster, shrimp, sea urchin, sea cucumber, snails, etc.) and others not (fin fish and shark).

In the past years, the total national catch has ranged between 1.2 and 1.5 million tons in live weight (Figure 1).⁵

a) Minor pelagic species

Harvest of small pelagic species accounts for 35% of the total national harvest, with Sonora, Baja California Sur, Sinaloa and Baja California being the main producing states,⁶ all bordering the Gulf of California. The value of this fishery, considering its industrial process, represents nearly 10% of the total fisheries income in Mexico.⁷

Species harvested include: Monterrey or Pacific sardine (*Sardinops caeruleus*); anchovy (*Eungraulis mordax*); *Crinuda* sardine or Thread herring

(*Opisthonema libertate*); Blue *crinuda* sardine (*O. bulleri*); *Crinuda machete* sardine (*O. medirastre*); mackerel (*Scomber japonicus*); sardine (*Centegraulis mysticetus*); *Charrito* or Jack mackerel (*Trachurus symmetricus*); *Japonesa* sardine or Round herring (*Etrumeus teres*) and *Piña* sardine or Shortjaw leatherjack (*Oligoplites refulgens*).⁸

Overall, the status of the fishery is considered stable. In Sonora, the fishery is recovering after a steep decline in numbers of the Monterrey sardine; in Ensenada the recovery process is slower; in Bahía Magdalena and Mazatlan, fisheries have remained stable with an ascending trend. However, increasing the current fishing effort is not recommended.⁹

b) Major pelagic fish

Tuna

This category includes the following species: Yellowfin tuna (*Thunnus albacares*), Northern bluefin tuna (*T. thynnus*), *Patudo* or Bigeye tuna (*T. obesus*), *Barrilete*,

5 SAGARPA. (2003). *Anuario Estadístico de Pesca*.

6 Ibid.

7 SAGARPA, Instituto Nacional de la Pesca. *Sustentabilidad y pesca responsable en México. Evaluación y manejo 2006. La Pesquería de Peces Pelágicos menores*, pp.263-301.

8 National Fisheries Chart. Official Gazette of the Federation. 15 March, 2004.

9 Ibid.

Bonito or Skipjack tuna (*Katsuwonus pelamis*), Black *barrilete* or Black skipjack (*Euthynnus lineatus*), *Bonito* (*Sarda chiliensis*), and *La Melva* or *Bonito* (*Auxis thazard*).

In Mexico, tuna is the second most important fishery, both in terms of weight of fish landed, after sardine, and in economic revenues, after shrimp. Yellowfin tuna represents 75%-90% of annual fisheries harvested by Mexican vessels, whereas *Barrilete* catches range between 7%-20%. Currently, 114 vessels operate, with a load capacity ranging between 50 and 1,700 tons.¹⁰ At least since 1993, the harvest of tuna and tuna-like fish species in Mexico has remained at levels exceeding 120,000 tons, and peaked in 2003 with 189,270 tons¹¹.

The Yellowfin tuna fishery is considered as exploited to its maximum sustainable level. The Bigeye tuna is harvested beyond its maximum sustainable yield (MSY), although there is uncertainty over the level of exploitation. Skipjack tuna fisheries have the potential to grow further.¹²

Marlin

Other major pelagic fisheries in Mexico include various billfish species caught in recreational fishing. These species include the Striped marlin (*Tetrapturus audax*), Blue marlin (*Makaira mazara*), Black marlin (*M. indica*), and Shortbill spearfish (*T. angustirostris*).

These species are fished mainly along the Mexican Pacific coast using sport fishing boats with individual rods and reels and under a daily operation scheme. Up to four fishermen may participate in boats with a carrying capacity below 10 tons, whereas up to 25 may do so in boats of larger capacities. Marlin species are exploited only for sport fishing, with the striped marlin being the most caught species. Over 40,000 fishing operations per year take place catching 23,000 game

fishes off the southern tip of the Baja California peninsula.¹³

The income in this region of Mexico just from rentals and expenses directly related to sport fishing trips has been estimated at US\$ 44 million in 1995.¹⁴

This resource is classified as exploited up to its MSY. However, reference limits (RL) have been established in an attempt to avoid the decline of resources available for sport fishers, who frequently release their prey. The application of control measures is recommended if catches of Striped marlin drop below 0.55 fish/trip for the southern Baja California area.

Shrimp

The Mexican shrimp fishery is most important in terms of economic value, employment and in its contribution to Mexico's total seafood exports. The Mexican Pacific Ocean accounts for 70%-80% of the total national shrimp production.¹⁵

Species comprising the shrimp fishery on the Mexican Pacific coast are: Brown shrimp (*Farfantepenaeus californiensis*), Blue shrimp (*Litopenaeus stylirostris*), White shrimp (*L. vannamei*) and Crystal or Red shrimp (*F. brevirostris*), Tehuantepec white shrimp (*L. occidentalis*), 'Botalón' shrimp (*Trachypenaeus pacificus*), Zebra shrimp (*T. faoea*), 'Japanese', 'Rock' or 'Peanut' shrimp (*Sicyonia penicillata*), and Sea-bob shrimp (*Xiphopenaeus riveti*).

The value of shrimp fisheries, considering ex-vessel prices for catches and shrimp farmed in the Gulf of California, the Pacific, and Gulf of Tehuantepec amounts to US\$ 310 million.¹⁶

In open-sea fishing, shrimps are harvested by vessels with the capacity to carry over 10 tons of raw produce, equipped with trawling nets (generally two) adapted

10 Ibid.

11 SAGARPA, supra, note 5.

12 National Fisheries Chart, supra, note 8.

13 Ibid.

14 Ditton, R.B., Grimes, S.R. and Finkelstein, L.D. (1996). *A social and economic study of the recreational billfish fishery in the southern Baja Area of Mexico*. Report prepared for The Billfish Foundation, Fort Lauderdale, FL, USA.

15 SAGARPA, supra, note 5.

16 SEMARNAT, Instituto Nacional de la Pesca. *Sustentabilidad y pesca responsable en México. Evaluación y Manejo 1999-2000. La Pesquería de camarón del Pacífico*, pp.3-50.

with turtle excluders, and with a crew of six to eight fishermen. Shrimping in inshore areas is generally carried out in smaller vessels with 55 HP outboard motors which are equipped with nets including line seine nets, cast nets and regional nets (*suriperas*).

The fishery occurs sequentially, i.e., it is harvested by different fleets, using different fishing gear for the three phases of the shrimp lifecycle: i) adults, harvested by open-sea or industrial vessels; ii) juveniles, harvested by smaller fishing vessels (*pangas*) along shallow inshore areas, coastal lagoons, estuaries, and bays; iii) post-larvae (shrimps measuring 6-12 mm which migrate into coastal lagoons for growth and shelter) caught in their natural environment for farming purposes.¹⁷

Overall, considering all the species and major landing ports, the shrimp fishery in the Mexican Pacific Ocean is currently exploited to its maximum sustainable level, and the current fishing effort should not be increased any further in any region and for any species. Since some stocks display a biomass well below peak productivity, further measures to reduce fishing effort are required. These include regional closed seasons, control of artisanal exploitation rates, and assessment of the industrial fishing capacity, aiming at resource recovery and improving the economic yield levels.¹⁸ Overcapitalization has also been identified as a problem, and recommendations have been issued since the late 1970s to reduce the fishing fleet.

The Gulf of Mexico shrimp fishery underwent a crisis as a result of the collapse of Pink shrimp stocks in the early 1970s. Recent studies¹⁹ suggest that the decline in the abundance of this species is strongly linked to long-term environmental changes, coinciding with a global drop in primary productivity at the Campeche Sound.

Of course, this decline in shrimp abundance has led to a reaction in terms of fishing investments. In the Tamaulipas region, the Brown shrimp is fully

exploited, whereas in the Campeche Sound it is heavily overexploited and in Contoy it is overexploited.

Shark

The shark fishery is an artisanal multi-species fishery with importance from the food and labour perspectives. Its commercial value varies according to meat type, fins and size. During the 1940s the fishery reached a peak, plummeting afterwards due to synthetic shark fins and other products. Currently, its demand derives from the use of shark cartilage as an artisanal and pharmaceutical product. Species of this fishery have biological characteristics that make them prone to overexploitation. Shark fishing involves gear varying in material, construction and dimensions: nets ('scale', shark, *cazoneras*, *sierreras*, *tendales* and seine nets), and hooks (hand line, *cimbras* and long-liners *palangres*).²⁰

Up to the year 2000, the status of the shark resource in the Gulf of California could not be determined according to analyses by government offices like the National Institute of Fisheries (INP in Spanish). However, in the case of the open-sea shark fishery in the Mexican Pacific, the *Zorro* or Pelagic thresher shark (*Alopias pelagicus*) is classified as a declining resource, while other shark species are exploited at their maximum potential.

More than 15 shark species and more than 10 rays are typically harvested in the littoral zone along the Gulf of Mexico. Species with the highest commercial importance belong to the genus *Carcharhinus* spp. (with nine species), *Sphyrna* spp. (three species), and especially the *Cazón* or Atlantic sharpnose shark, *Rhizoprionodon terraenovae*, due to its abundance. In general, the kinds of use, trade and fishing practices are similar to those for the Pacific littoral. The resource is currently regarded as fully exploited, and strict restrictions are recommended to avoid overfishing and collapse of any population, mostly due to their vulnerable life-history characteristics.

17 Ibid.

18 Ibid.

19 Arreguín-Sánchez, F. Personal communication.

20 SEMARNAT, Instituto Nacional de la Pesca. *Sustentabilidad y pesca responsable en México. Evaluación y Manejo 1999-2000. Tiburones del Golfo de California*, pp.237-256.

Finfish

Inshore finfish comprises a broad variety of species, ranging from resources associated with the coastline and estuarine environments, including occasional migrants to inland waters (rivers), to marine fish communities associated with (shallow or deep) hard bottoms, e.g., rocks and reefs, or soft bottoms such as sandy, clayey, or muddy grounds. In the water column, from the coast to the edge of the continental shelf, approximately 200 nm offshore, inshore pelagic fish frequently travel along the coastline following the direction of sea currents. The patterns of their latitudinal movements are easy to recognize and variations occur according to the critical distance from the bottom drop.²¹

According to the National Fisheries Chart, there are at least 194 finfish species included in this category, however, the target species are those with the highest economic value. Nearshore fishing in Mexico includes a large variety of fish species, but *Huachinango* (Red snapper) is the most important target species on which fishing efforts are concentrated. Its high market demand delivers the highest income for the fisherman.²²

Recommendations have been issued not to increase further the current fishing effort for any finfish species. As for species with development potential, fisheries authorities have stated that these will be defined based on information from specific studies.

Giant squid and octopus

The main species exploited in this category is the giant squid, *Dosidicus gigas*. This fishery is carried out mostly in the Gulf of California. It is a highly variable resource, subject to migrations associated with the El Niño phenomenon. It is a fast-growing species that measures up to 60 cm in mantle length.

Fishing units are vessels with a gross capacity greater than 10 tons, including 10 fishermen, plus smaller overboard-motor boats with up to three fishermen.

Catches in the Pacific littoral between 1997 and 2003 ranged between 26,600 and 121,000 tons, with an annual average of 77,451 tons.²³ The fishing season lasts from early August to mid December, during which time mean annual catches are about 12,000 tons, 65% being *Octopus maya* and the rest *O. vulgaris*. It is regarded as a fully exploited fishery, and the high yield levels have been suggested as being associated with the decline in the Red grouper, one of the major predators of octopuses.

Lobster

The lobster fishery in the Mexican Pacific comprises the following species: Red or California spiny lobster (*Panulirus interruptus*), Green spiny lobster (*P. gracilis*), and Blue spiny lobster (*P. inflatus*).

One thousand small vessels are registered for this fishery. Eighty-seven percent of catches are reported in the Baja California peninsula (72% for Baja California Sur), while the remaining 13% are distributed amongst eight states along the Pacific Ocean. The Baja California peninsula fishery has reported a mean annual production of 1,415 tons over the past 15 years, reaching an all-time historical peak in the 2000-2001 season, with a production of 1,973 tons, equivalent to nearly US\$ 30 million.²⁴

The status of this resource is considered as exploited to its MSY, particularly in the Baja California peninsula's central area. However, adequate management measures have been established (on a voluntary basis), including minimum sizes, closed seasons and areas, restrictions on numbers of traps, release of animals below the minimum size, etc., all of which have resulted in producers being able to obtain Marine Stewardship Council (MSC) certification for this fishery.

21 National Fisheries Chart, supra, note 8.

22 SAGARPA, Instituto Nacional de la Pesca. *Sustentabilidad y pesca responsable en México. Evaluación y manejo 2006. Pesquería de huachinango*, pp.101-129.

23 SAGARPA, supra, note 5.

24 National Fisheries Chart, supra, note 8.

Abalone

This fishery comprises mainly two mollusc species: Green abalone (*Haliotis fulgens*) and Pink abalone (*H. corrugata*). Fishing takes place along the Baja California peninsula's western littoral, with the highest abundance of abalone found in its central region. Abalone is caught by diving, and the fishing effort unit is a small motor boat with a compressor or *hooka*, a diver, a captain, and other fishermen to support the diver's activities.

Despite the low catch volumes, the abalone fishery is of significant economic importance, due to the high price paid for the resource. Almost 100% of abalone

catches are exported. This fishery generated income estimated at US\$ 21 million in 2002.²⁵

Since abalone yields were seen to be declining, a recovery plan was implemented in 1996. This is one of the fisheries for which comprehensive research and administration schemes have been developed. Management measures include: fishing licences, fishing quotas, minimum sizes, closed seasons and zones, etc. The fishery is still classified as deteriorated with solitary signs of recovery, so the recommendation is not to increase the current fishing effort any further.²⁶

3. Fishermen's organizations and communities

From the perspectives of labour and food self-sufficiency, the most important fishing activities in Mexico take place in inshore areas. These areas have the largest fleet, with about 106,000 small vessels, compared to 3,634 larger vessels registered in the country.²⁷

Fishermen are grouped into a number of organizations. Some are of a commercial/business nature, as is the case with the fisheries industry, grouped under the National Chamber of the Fisheries Industry (e.g., CANAINPESCA, tuna, shrimp).²⁸ Other organizations are more socially oriented, such as the fisheries cooperatives and the Federations of Fisheries Cooperatives (groups of cooperatives, e.g., FEDECOOP Baja California, abalone, lobster).²⁹ In both cases, these organizations may attain (and this is frequently the case) a certain degree of influence in fisheries policies established by the government. In recent years these organizations have been consulted with increasing frequency regarding both inshore (coastal) and offshore (EEZ) fisheries policies.

The second article of the Constitution acknowledges the preferential right of indigenous peoples and communities to the sustainable use of fisheries resources in the areas where they live.

The Law of Fishing, currently in force (2007),

formally considers all Mexican indigenous communities as having preferential access rights to fishing resources in those areas where they live, as well as the implementation of programmes promoting fishing activities among indigenous communities, using their customary fishing gear and practices. Under identical circumstances, any request from indigenous communities receives preferential treatment.

Furthermore, the new law states that, in cases where a concession or licence has the potential to affect the habitat of any indigenous community, the authorities must consult indigenous community leaders. Likewise, the federal authorities in charge of regulating fishing activities shall set forth the required procedures and mechanisms so that any legal document granting concessions or permits is translated into the language of dealers or licence owners belonging to indigenous communities or, alternatively, make sure that the content is interpreted for them.

In practice, however, there are only a few cases of indigenous populations actually being shown exceptional treatment in relation to fishing activities. Such is the case of the Yaqui and Mayo indigenous communities in Sonora (Tiburón Island), who were allowed to fish without having to request a licence.

25 SAGARPA, Instituto Nacional de la Pesca. *Sustentabilidad y pesca responsable en México. Evaluación y manejo 2006. La Pesquería de abulón*, pp.1-38.

26 National Fisheries Chart, *supra*, note 8.

27 SAGARPA, *supra*, note 5.

28 <http://fis.com/canainpesca>.

29 http://www.wwf.org.mx/wwfmex/archivos/gc/040428_certifPesqueria.php.

4. Public perception of basic fisheries-related issues

There is an ongoing debate and concern, increasingly shared between the conservation and academic sectors, over several aspects of fishing, such as the overfishing of several species (e.g., abalone,³⁰ sharks and rays³¹), overcapacity of fleets (e.g., the shrimp fleet is the country's largest),³² and the lack of compliance with fishing standards, in inshore waters, the EEZ and the open sea.

There is a perception that the estimates of abundance of stocks are inexact because the government agencies carrying them out do not correlate them with the information fishermen have. Moreover, government rarely invites the participation of independent experts.

Some specific examples may be mentioned which are the subject of debate in various respects. The *Dorado* or Dolphinfish (*Coryphaena hippurus*) from the Pacific littoral is a species reserved for sport fishing, for which small-scale commercial fishermen have requested approval for commercial exploitation, leading to a conflict of interests with the tourism sector. In the case of *Vaquita* or Pacific harbour porpoise (*Phocoena sinus*), an endangered species living in the Gulf of California, there is also an ongoing debate between the conservation and commercial fishing sector, particularly concerning *enmalle* (gill) nets and trawler shrimp fishing.

II. Legal regimes governing fisheries

1. Global and regional international instruments

Mexico is party to the following international treaties relating to fisheries:³³

- Agreement to Promote Compliance with International Conservation and Management Measures for Fishing Vessels on the High Seas (1993);
- Agreement for the Creation of the East-Pacific Tuna Organization (1989);
- Constitutive Agreement of the Latin American Organization for Fishing Development (1982);
- Cooperation Agreement between the Mexican United States Government and the Japanese Government in relation to the Fisheries Training Project (1977);
- Fishing Agreement between the Mexican United States Government and the United States of America Government (1976);
- Fishing Agreement between the Mexican United States and the Republic of Cuba (1976);
- German-Mexican cooperation agreement for the Development of Mexican Open-Sea Fisheries off the Mexican United States Pacific Coast (1974);
- Technical Cooperation Agreement between the Mexican United States Government and the Federal Republic of Germany Government for the Development of Marine Biology and Fishing Production Technology (1974);
- Agreement on Fishing by Japanese Vessels in Waters Adjacent to the Mexican Territorial Sea (1968);

30 SAGARPA, Instituto Nacional de la Pesca, supra, note 25.

31 NORMA Oficial Mexicana NOM-029-PESC-2006, Pesca responsable de tiburones y rayas. Especificaciones para su aprovechamiento. Official Gazette of the Federation. 14 February, 2007.

32 García, J.M and Gómez Palafox, J.V. (2005). *La pesca industrial de camarón en el Golfo de California: situación económico-financiera e impactos socio-ambientales*. Conservation International.

33 Lic. Amparo Canto, Foreign Affairs, Senate of the Republic. Personal communication.

- Agreement between the Mexican United States Government and the United States of America Government on Traditional Fishing in the Exclusive Fishing Zones Adjacent to the Territorial Seas of Both Countries (1967);
- International Convention for the Conservation of Atlantic Tuna (1966);
- International Agreement on Task No. 112 Relative to Minimum Age of Admission for Fishing Labor (1959); and
- Agreement on Fishing and Conservation of Open-Sea Living Resources (1958).
- APICD – *Acuerdo sobre el Programa Internacional para la Conservación de Delfines* (Agreement on the International Dolphin Conservation Program);
- CICAA – *Comisión Internacional para la Conservación del Atún Atlántico* (International Commission for the Conservation of Atlantic Tunas);
- OCDE – Organización de Cooperación para el Desarrollo Económico (Comité de Pesca) (Organisation for Economic Co-operation and Development (OECD), Fisheries Committee);
- APEC – Asia-Pacific Cooperation Forum (Fisheries Workgroup and Marine Resources Conservation Workgroup);

Mexico is a member of the following international organizations:

- COFI – *Comité de Pesca de la Organización de las Naciones Unidas para la Agricultura y la Alimentación* (UN FAO Fishing Committee);
- CIAT – *Comisión Interamericana del Atún Tropical* (Inter-American Tropical Tuna Commission);
- CICAA – *Comisión Internacional para la Conservación del Atún Atlántico* (International Commission for the Conservation of Atlantic Tunas (ICCAT));
- OLDEPESCA – Organización Latinoamericana de Desarrollo Pesquero (Latin American Organization for Fisheries Development); and
- INFOPESCA – El Centro de Servicios de Información y Asesoramiento sobre la Comercialización de los Productos Pesqueros en América Latina y el Caribe (Information and Advisory Service Center on Latin American and Caribbean Fishing Products Trading).

2. Guiding principles of domestic legislation

a) *The Constitution*

The elements related to the use of natural resources are established in a number of paragraphs of article 27 of the Political Constitution of the Mexican United States.³⁴ This article includes provisions regarding the natural resources constituting flora and fauna for which water is their total, partial or temporary living environment.³⁵

The first paragraph states that: “... Ownership of land and water included within the limits of the national territory belongs to the Nation, which has

had and has the right of transferring the property of these to individuals, constituting private property...” This provision has an important impact on understanding economic activities, since it sets the basis to define property rights as oriented towards transforming public property into access for economic agents (social or private) and thus rejects the notion of free access based on a concept of *res nullius*.³⁶

The fourth paragraph states that: “...The direct domain of all natural resources within the continental shelf and the submarine shelves of islands belongs to

³⁴ *Constitución Política de los Estados Unidos Mexicanos*. (2000). Ed. Porrúa, S.A. México.

Available at: <http://www.diputados.gob.mx/LeyesBiblio/pdf/1.pdf>.

³⁵ Secretaría de Pesca: Universidad Autónoma de México. (1994). *El régimen jurídico de la pesca en México*.

³⁶ Seijo, J.C., Defeo, O. and Salas, S. (1997). *Bioeconomía Pesquera. Teoría, modelación y manejo*. Documento Técnico de Pesca No. 368. Rome: FAO.

the Nation;...". Here the Nation's domain over natural resources such as plants and animals is set out, as well as over other goods such as minerals, oil, airspace, etc.

Article 27 fifth paragraph states that: "...The waters within the territorial seas belong to the Nation, with the extension and under the terms established by international laws; inner marine waters; coastal lagoons and estuaries permanently or intermittently communicated to the sea; natural inland lakes directly connected to constant water currents; rivers and their direct or indirect tributaries, from the point where the upper permanent, intermittent or torrential currents become evident..." "...the use of these water bodies will be considered as under public domain, subject to the provisions set forth by the States..."

The sixth paragraph states: "...In the cases referred to in the two previous paragraphs, the Nation's domain is inalienable and permanent and the exploitation and use of the resources within this domain by third parties and societies constituted according to the Mexican laws will only be possible under licenses granted by the Executive Power, in accordance with the rules and conditions set forth by the legislation..." This fact sets the ground for all Mexican regulations in matters of fishery resource use.

Last, the eighth paragraph sets forth the Nation's rights in relation to the extension of sea under Mexican sovereignty by defining that: "...The Nation exerts the sovereign rights and jurisdictions, as determined by the Congress laws, in an exclusive economic zone. The exclusive economic zone will comprise two hundred nautical miles, measured from the baseline from which the territorial sea is measured..."

b) Fisheries legislation

The Fisheries Law of 1992 relied on an economic modernization approach, avoiding protectionism and

fostering competition and productivity. This included promoting access to fishery resources and defining fisheries as a source of resources that would benefit broader society. This policy was effective in the short term. The law emphasized those elements that guaranteed the rational use of fishery resources and thus created the basis for proper development and administration. In this way, the 1992 Fishing Law set forth, in one of its most relevant articles (Article 4), the licensing of fishing as providing a property right in the Nation's fisheries resources.³⁷

Apart from the Fisheries Law Mexico promulgated a Law in 1992 which deals with matters of standardization, certification, accreditation, and verification in relation to various branches of economic activity.³⁸ The standards, called Mexican Official Standards (NOMs in Spanish), are set by bodies involving various ministries and inviting the participation of the relevant industries, academics and the public at large. Fishing is also regulated by these standards which prescribe e.g., fishing gear, closed seasons, minimum fishing sizes, etc. In fact however, only a few fisheries (14)³⁹ have been regulated by such standards until now. By 2006, 44 Mexican Official Standards regulating both open-sea fisheries as well as fishing in inland waters and coastal lagoons were in force,⁴⁰ along with three management plans (shrimp, giant squid, and sharks and rays).⁴¹

A new General Law of Sustainable Fishing and Aquaculture came into force in 2007.⁴² This new law stresses the sustainability aspects of fisheries.⁴³ The new law also lays the foundation for allocating powers amongst the Federation, the States and the Municipalities in fishing and aquaculture matters, thus specifying the concurrence principle established in Article 73 Section XXIX-L of the Mexican Constitution.⁴⁴ In accordance with the principles stated in Articles 11, 12, 13, 14, 15, 16, 22 and 24, the new

37 González-Oropeza, M. (Coord.) (1993). *Ley de Pesca Comentada*. Secretaría de Pesca: Universidad Nacional Autónoma de México.

38 *Ley Federal sobre Metrología y Normalización*. (1992). Available at: <http://www.diputados.gob.mx/LeyesBiblio/pdf/130.pdf>.

39 Hernández, A. and Kempton, W. (2003). 'Changes in fisheries management in Mexico: effects of increasing scientific input and public participation'. *Ocean and Coastal Management* 46: 507-526.

40 Conapesca. *Normas Oficiales Mexicanas Pesqueras y Acuícolas*. Available at: http://www.conapesca.sagarpa.gob.mx/wb/cona/cona_cuadro_de_noms.

41 Conapesca. *Planes de Manejo*. Available at: http://www.conapesca.sagarpa.gob.mx/wb/cona/cona_plan_de_manejo.

42 General Law on Sustainable Fishing and Aquaculture. Official Gazette of the Federation. June 24, 2007.

43 http://www.senado.gob.mx/servicios_parlamentarios.php?ver=estenografia&tipo=O&a=2006 &m=04&d=27.

44 Ibid.

Law establishes the way in which the States, the Federal District, and the Municipalities will participate in these matters: communication of requests to obtain certain licences and permits through the fishing and aquaculture state councils, allowing opinions to be issued regarding those requests; participation in the development of fisheries management programmes, and in fisheries and aquaculture planning projects, as well as in monitoring and surveillance activities.⁴⁵

The national policy in matters of sustainable fishing and aquaculture involves: principles, mechanisms,

3. Institutional structures

The Mexican Republic comprises 31 states and the Federal District. Each of these states is free and sovereign, and has its own constitution and congress. Although the Federal District has no constitution, it does possess a local congress that houses the three federal government powers (Federal Executive, Legislative and the Supreme Court of Justice). The states are divided into municipalities, totaling 2,438 municipalities in all. Of the 31 states, 17 are on the coast: Baja California, Baja California Sur, Sonora, Sinaloa, Nayarit, Jalisco, Colima, Michoacan, Guerrero, Oaxaca and Chiapas on the Gulf of California and Pacific Ocean, and Tamaulipas, Veracruz, Tabasco, Campeche, Yucatan and Quintana Roo, on the Gulf of México and the Caribbean Sea.

a) Administrative agencies

The government agencies with direct power and obligations in relation to the use, management and conservation of fishery resources include the National Commission of Aquaculture and Fisheries (CONAPESCA). The administrative structure of CONAPESCA includes one commissioner, different offices such as planning and evaluation, promotion, fisheries management, physical infrastructure, surveillance, and a legal department. The commissioner is appointed and can be removed by the Federal Executive via the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA).

instruments, programmes, and other measures. In order to contribute to solving one of the most critical issues that national fisheries currently face, surveillance and monitoring are strengthened through measures seeking tighter control, the incorporation of scientific and technological progress, and transparent participation processes involving institutions and government powers. Therefore, the Integral Monitoring and Surveillance Program to Fight Illegal Fishing has been created, which is participatory, and implements more severe sanctions for infringements of the law.⁴⁶

CONAPESCA receives advice from the National Council of Fishing and Aquaculture. This Council is composed of representatives of social organizations, producers from the private sector, and governmental representatives.

CONAPESCA's powers and obligations include:

- proposing and coordinating national policies in matters of rational and sustainable use of fishing and aquaculture resources, as well as the development and promotion of fisheries and aquaculture;
- administering, regulating, and developing the use and conservation of fisheries resources and aquaculture development;
- proposing general criteria for the establishment of economic instruments to promote the integral development of fisheries and aquaculture;
- proposing and executing the general surveillance and monitoring policy in aquaculture, commercial, and sport fishing matters, with the participation of other federal government agencies; and
- issuing fishing licences.

45 Ibid.

46 Ibid.

CONAPESCA exercises these powers irrespective of the powers of the Ministry of the Environment and Natural Resources.

The National Institute of Fisheries (INP) is a basic instrument in CONAPESCA's functioning. Today, INP is a decentralized organization of the federal government under SAGARPA.⁴⁷ The mandate and powers of INP are set forth in Section VII, Articles 73 and 77, of SAGARPA's Internal Directive: I. Act as the Ministry's scientific and technical advisor in matters of its competence; II. Conduct research with an integral and interdisciplinary approach, linked to the fishing activity's natural, economic and social processes; III. Support, develop and promote the transfer of research findings and technology generated by INP to aquaculture farmers and fishermen in an accessible way; IV. Elaborate and update the National Fisheries Chart; V. Support the administrative units involved in the conduct of ecological management and environmental impact studies for any activities carried out by the National Commission of Aquaculture and Fisheries in aquaculture and fishing matters; VI. Contribute to conducting risk analyses related to the introduction, establishment and spread of pests and diseases affecting aquaculture and fisheries; VII. Offer professional services to private and public users in scientific and technological research, technical opinions and verdicts, and advice in the Institute's competence areas; and VIII. Identify and register the genetic lines of aquaculture species produced in the national territory, as well as those species for which the genome has been manipulated.

The Ministry of the Environment and Natural Resources (SEMARNAT) is a federal government agency⁴⁸ in charge of marine protected flora and fauna. Its tasks are to promote the protection, restoration and conservation of ecosystems, natural resources, and environmental goods and services, to foster their sustainable use and development, and to issue and lead national policies in matters of natural resources, provided these have not been explicitly assigned to another agency.

SEMARNAT was mainly created out of the infrastructure of the previous Ministry of Fisheries (SP in Spanish), INP, and related staff from these offices, as well as employees from other federal environment-related offices operating before 1994. Hence, from that year, the focus of fishing affairs turned towards conservation.⁴⁹

There are other federal government agencies, including the Ministry of Maritime Affairs, the Federal Attorney's Office for Environmental Protection, the Republic's General Attorney's Office, the Federal Preventive Police, and other local police forces which may assist in enforcing the new Law of Fishing, with special regards towards sanctions.

Finally, there is a series of local institutions at the state government level in coastal states that have been established in relation to fishing and aquaculture activities. They are mostly oriented towards development, supporting investments to get licences, approvals, and other requirements from the federal government, as well as obtaining funds for these productive activities.

b) Distribution of competences

The 1992 Fisheries Law was a federal statute, and hence its application corresponded to federal agencies (SAGARPA, National Commission of Fisheries and Aquaculture, Ministry of the Environment, Natural Resources and Fisheries, Attorney's Office for Environmental Protection, Ministry of Maritime Affairs, National Institute of Fisheries, etc.).⁵⁰ Any approval of the use of a fishing resource would have to be issued *originally* from the central offices, with the assistance of the federal offices in the States, which mainly act as reception centres for licence applications.

This had important implications for the conservation of fisheries resources, since this scheme failed to achieve an effective *shared responsibility* between coastal states and the federal government with regard to the use and conservation of fisheries resources.

⁴⁷ <http://www.inp.sagarpa.gob.mx/Nuevos/evaluacionINP/informefinal.pdf>.

⁴⁸ SEMARNAT creation decree.

⁴⁹ Ibid.

⁵⁰ González-Oropeza, *supra*, note 37.

There is abundant information in international publications and grey literature on efficient mechanisms (e.g., Regional Fishing Councils) for carrying out assessments, fisheries analyses, and for decision making explicitly involving the participation of producers, authorities, academia and the general public interested in the subject. This favours adaptive management, co-management, and cooperative or community management, all concepts which have proved to have a very positive impact on fishing resource conservation in other countries such as the USA, Australia, Canada and Spain.⁵¹ However, in Mexico, the direct responsibility for fishing resource conservation has resided with the federal government, involving countless operational and functional limitations.

Mexico has actively pursued the United Nations aim to achieve a better and more efficient sustainable fishing development. Mexico co-organized the International Conference on Responsible Fishing held in Cancún in 1992. This conference resulted in the FAO Code of Conduct for Responsible Fishing that established principles and standards for the conservation, planning and development of fisheries, so to guarantee an environmentally sound sustainable exploitation of living aquatic resources.⁵²

Although this Code is non-binding soft law, Mexico is fully committed to its implementation. One of the Code's most important chapters, Fishing Management, stipulates that, in areas under its jurisdiction, each country should attempt to identify the domestic stakeholders with a legitimate interest in fishing resource use and planning, and establish measures for consultation, in order to ensure their collaboration to attain responsible fishing.⁵³

Yet, implementation of the concepts of co-management, community management and shared responsibility in the administration of fishery resources

in Mexico has been fairly limited. The most important bodies, the State Fisheries Councils, have largely failed to function properly. They do not meet the operational requirements of a technical organization. Rather than carrying out concrete activities based on long-term and systematic work programmes, they have a very bureaucratic structure and hold only sporadic meetings. Having been created by a federal government's administrative agreement rather than through a parliamentary law, they have not attained a high legal status.⁵⁴

The Decree that created CONAPESCA⁵⁵ also stipulated the creation of participatory Consulting Committees on Fishing Matters in Article 6 Section IV. However, these have not been convened yet and it is unlikely that they will have any significant effect on the policies for use, management and conservation of marine resources.

As regards transparency, the new 2007 Fishing Law⁵⁶ (Article 122) sets forth that the authorities are responsible for maintaining a public and free National Fisheries Record.⁵⁷ Individual persons (fishermen) and businesses dedicated to fishing activities and possessing a concession, permit or licence are legally obliged to register themselves in the Record. Likewise, since 2002, all federal offices (including those related to fishing activities) must provide information generated with public resources, according to the Federal Law of Transparency and Public Access to Government Information.⁵⁸

As regards access and management instruments, however, the 2007 Law of Fishing maintains the basic structure already established by the previous law. But the new law acknowledges the sustainable use of fishing and aquaculture resources as a cornerstone to promoting economic activities from a perspective that enables better living standards and quality of life for future generations.

51 Pinkerton, E. (Ed.). (1989). *Cooperative management of local fisheries. New directions for improved management and community development*. Vancouver, BC: University of British Columbia Press.

52 <http://www.fao.org/DOCREP/005/v9878s/v9878s00.htm>.

53 Ibid.

54 Coordination agreement between SAGARPA and the State of Baja California Sur. Official Gazette of the Federation. October 29, 2002.

55 CONAPESCA creation agreement.

56 http://www.diputados.gob.mx/LeyesBiblio/ref/lgpas/LGPAS_orig_24jul07.pdf.

57 Ibid.

58 *Ley Federal de Transparencia y Acceso a la Información Pública Gubernamental* (Federal Law of Transparency and Access to Public Government Information). Available at: <http://www.diputados.gob.mx/LeyesBiblio/pdf/244.pdf>.

4. Instruments promoting fisheries

a) Subsidies

Support for fishing activities in the Federation's expenditure budget⁵⁹ (PEF in Spanish) for 2007 amounted to US\$ 103,097,345 and was mostly oriented towards the promotion of aquaculture and adding value to seafood through processing and commercialization rather than through expanding fishing fleets. The federal government has set up several support programmes such as: technical training and advice; development and strengthening of value networks; National Program of Support to Rural Aquaculture; National Program of Aquaculture Sanity and the Network of Diagnosis Laboratories; Alliance for food producers (Aquaculture and Fishing).⁶⁰

In addition, the government has introduced subsidies for energy sources, oil and diesel used in small and large vessels, as well as for the electricity used in aquaculture farms. Economic resources dedicated to marine diesel⁶¹ amounted to US\$ 66 million in 2005. In 2006-2007 the subsidy was Mex\$ 2.00 pesos/litre of marine diesel.⁶²

Shrimp-fleet buy-back programmes have been implemented recently, aimed at increasing the efficiency of this important fishery, both in economic and biological terms. The fleet buy-back programme consisted of buying each vessel at US\$ 88,495.

In general, inshore fisheries appear to be in a worse

financial situation and their beneficiaries are more scattered compared to the large tuna companies receiving government support for fleet operations.

b) Market organization

With the liberalization of Mexico's economy, only a few products are still subject to price controls (e.g., gasoline, electricity). In the 1970s, sardine was considered a popular high-protein food product, so a price-control policy was set up (i.e., a maximum price to the public). Today, this control no longer exists and, for example, the most widely consumed tuna product is canned tuna, and its price is based on supply and demand, as with all other fish products.

The domestic market shows a considerable concentration of fish products in major population centres such as Mexico City, Guadalajara and Monterrey, along with a significant seasonal element, with high consumption rates during religious festivities like Easter and Christmas.

On the other hand, most trading of fish products is done through a long chain with too many middlemen,⁶³ where dealers in landing areas impose the price upon producers,⁶⁴ as in a monopsonistic market structure. There is therefore the potential for increasing fishing sector efficiency through vertical integration of companies (harvesting, processing and commercialization).

5. Instruments of fisheries management

a) Access and catch restrictions

To engage in marine fishing, a licence is required according to both the 1992 and the new 2007 fishing laws. This licensing system is supplemented by other

management measures, like setting maximum catches when the MSY is reached for the Yellowfin tuna (total quota),⁶⁵ applying restrictions to fishing gear like those aimed at reducing tuna-related dolphin deaths, etc.

59 http://www.diputados.gob.mx/LeyesBiblio/pdf/PEF_2007.pdf.

60 http://www.conapesca.sagarpa.gob.mx/wb/cona/cona_organizacion_y_fomento.

61 http://www.conapesca.sagarpa.gob.mx/work/sites/cona/dgppe/dieselmarino2003_2005.pdf.

62 http://www.conapesca.sagarpa.gob.mx/work/sites/cona/recursos/LocalContent/3297/2/DOF_30NOV06.pdf.

63 Instituto Tecnológico Autónomo de México ITAM – SAGARPA. (2003). *Estudio de Competitividad del Sector Pesquero Mexicano*. Centro de Estudios de Competitividad.

64 Dr Luis Felipe Beltrán Morales, CIBNOR, S.C. Personal communication.

65 National Fisheries Chart, *supra*, note 8.

Although Total Allowable Catch (TAC) schemes are not systematically employed in Mexico, there are several fisheries such as the tuna, abalone and clam fisheries which are subject to a kind of TAC regime. The quota is based on technical criteria (e.g., population assessment, setting of a baseline, determination of reproduction rates, etc.) more than on economic criteria.⁶⁶ For some fisheries such as clams, harvest quotas are supplemented with other management measures like minimum catch size, closed seasons, and effort control, among others. In Mexico, the individual transferable quota (ITQ) has not been formally introduced.

As regards licence duration, the new law sets forth that these be granted for up to 20 years, according to the assessment derived from technical and economic studies, as well as to the magnitude and recovery of the investment. A shorter-term licence (2-4 years) is granted when the magnitude of the investment does not warrant technical and economic studies.

The fishing law sets out the basic legal terms of permits, licences and concessions. A permit bestows the right to catch just for the specific action permitted, for instance for the oneoff catch of postlarvae for hatcheries. A licence gives the right to catch or harvest for a period of 2-4 years, for instance for scale fish, clam fish, shark or squid. A concession bestows the right to catch for up to 20 years, for instance for tuna fishing carried out by industrial vessels, for abalone, and in some areas for lobster. The time period granted depends on the level of investment and the time needed to recover it. In conjunction with the fishing law, a legal ordinance has been issued by the Federal Executive Power that contains detailed provisions to enact the general terms of the law. Lastly, the Mexican Official Standards are even more explicit for each fishery in terms of fishing administration and management.

As regards decision making, participative processes are being used with increasing frequency to set

management measures and analyze the state of fishery resources from relevant data like technical and scientific information.⁶⁷ Likewise, agreements have been established to achieve greater participation of fishermen groups and coastal state governments (e.g., Baja California Sur).⁶⁸ Abalone and lobster fisheries on the Baja California peninsula's western coast are examples where participative fishing management is being practised.^{69, 70}

Costs of licences and permits vary from year to year according to the Federal Law of Rights⁷¹ in accordance with Article 191-A Section I and 191-C in force at the time of issue. Based on this law, the following fees apply after May 2007:

- a) *US\$ 653 for a 20-year licence (concession), plus an annual fee for the right to use the licensed fishing resource (i.e., abalone: US\$ 47.75).*
- b) *A clam fishing licence – the most expensive – costs US\$ 40.18/year/vessel, whereas a shark licence – the cheapest – costs US\$ 1.06/year/vessel. In both cases, an additional US\$ 59.56 must be paid to the federal government.*
- c) *In the case of sport fishing (for Mexicans or foreigners), the costs of individual non-transferable licences are: US\$ 7.84/day; US\$ 19.65/week; US\$ 29.52/month; and US\$ 39.38/year.*
- d) *For foreign fleets that are granted a fishing licence through an exemption permit, this will cost US\$ 199.12 for fishing rights per vessel and per trip of up to 60 days, as per Article 191-C of the above mentioned law.*

The Mexican government could clearly earn significantly higher levels of income from authorizing access to the country's fisheries resources.

66 Ibid.

67 Hernández and Kempton, *supra*, note 39.

68 Coordination agreement between SAGARPA and the State of Baja California Sur, *supra*, note 54.

69 SAGARPA, *supra*, note 25. Electronic version.

70 SAGARPA, Instituto Nacional de la Pesca. *Sustentabilidad y pesca responsable en México. Evaluación y manejo*. 2006. *La Pesquería de Langosta en la Península de Baja California*, pp.155-210. Electronic version.

71 <http://www.diputados.gob.mx/LeyesBiblio/pdf/107.pdf>.

A number of protected natural areas have been established in Mexico, involving legal provisions (e.g., management plans) aimed at protecting marine ecosystems and including regulations to exploit fish resources, like approval and monitoring of these activities by several government offices in addition to the fishing authorities.

b) Enforcement and compliance issues

The main penalties included in the new Fishing Law (2007) encompass 31 infringements in article 132 of this law. These include fishing and farming activities without the corresponding concession, licence, permit or authorization; exploiting a species or group of species at volumes outside the technical and economic standards set forth in the corresponding title; issuing invoices for seafood outside the terms set forth in the licence, permit or authorization; transferring the rights derived from licences or permits without the Ministry's (CONAPESCA) approval; extracting, harvesting, possessing, transporting or trading species during the closed season; extracting, harvesting, possessing, transporting or trading species of sizes/weights below the minimum size set forth by the Ministry (CONAPESCA); catching any species from sanctuaries or population recovery areas or locations; intentionally catching sea turtles or marine mammals or species in danger of extinction or without complying with the technical standards in force, and without the Ministry's (CONAPESCA) approval, among others.

Just as in many countries around the world, illegal fishing in Mexico is a matter of great concern, mostly as regards high-value inshore resources like shrimp, lobster and abalone.⁷²

Although there is a reasonably sound set of regulations and sanctions for the use of fisheries resources and the conditions for use in terms of minimum sizes, closed seasons, quotas, fishing gear, and other harvesting conditions, often compliance with

these ordinances is either limited or nil. The main reasons underlying this are: a shortage of surveillance staff relative to the coastline (11,500 km), a lack of equipment for surveillance authorities, the poverty of the coastal communities that leads them to fish without a licence, and corruption.

c) Coherence with relevant international agreements

Mexican legislation is consistent with international laws including the UN Convention on the Law of the Sea (UNCLOS – CONVEMAR in Spanish),⁷³ which addresses access to surplus production.

As regards the EEZ, the new Fishing Law (Article 62)⁷⁴ states that: “The Ministry of Fisheries (particularly CONAPESCA), in line with the national interest and the international treaties and agreements that Mexico has signed, will determine and, if applicable, rule whether there is a surplus by species; under such situation, it will grant an exemption for foreign vessels to participate in the harvest of such surplus in the exclusive economic zone, provided there is compliance with the requirements and conditions set forth by this agency. In any case, this will be governed by strict reciprocity in all cases.”

For example, Cuban vessels have been allowed to fish in the Gulf of Mexico based on this concept and the Mexico-Cuba bilateral agreement.⁷⁵

Mexico has participated in the FAO's Fishing Committee since 1978, and actively participates in the works currently ongoing aimed at ensuring compliance with the provisions set forth in the Code of Conduct for Responsible Fishing, as well as with international action plans. Likewise, Mexico is engaged in activities promoting the development of aquaculture, freeing the fishing trade from restrictive tariff barriers and technical obstacles, and agreeing on quality control systems for fish products.⁷⁶

72 Ponce-Díaz, G., Sánchez-Hernández, S., Moctezuma-Cano, T., Olguín-Espinoza, I., Serviere-Zaragoza, E., Pérez-Enríquez, R., Hernández-Llamas, A., Ramade-Villanueva, M., Lluch-Cota, D., Lluch-Cota, S., Hernández-Vázquez, S., de Anda-Montañez, A., González-Angulo, M., Soria-Martínez, G., García-Domínguez, G., Beltrán-Morales, L.F., Flores-Quintana, E. and González-Becerril, A. (2003). *Estudio de la Cadena Productiva de Abulón*. CONAPESCA, CIBNOR, BANCOMEXT.

73 *Convención de Naciones Unidas sobre Derecho del Mar*.

74 General Law on Sustainable Fishing and Aquaculture. Official Gazette of the Federation. June 24, 2007.

75 SAGARPA. (2005). *Asuntos Internacionales. Acuerdo bilateral México-Cuba en materia pesquera* (Foreign Affairs. Mexico-Cuba bilateral agreement on fishing matters). Available at: http://www.conapescasagarpa.gob.mx/work/sites/cona/dgppe/informe_de_actividades_2005.pdf.

76 Ibid.

In Mexico, open-sea fishing, particularly tuna fishing, has expanded in recent years following criteria proposed by multilateral bodies such as the Inter

American Commission of Tropical Tuna (CIAT in Spanish), as well as other guidelines issued by international organizations such as FAO.

6. Foreign fishing activities and the purchase of fish

The fisheries management schemes that are starting to be applied in Mexico are in line with global trends and agreements set between multilateral bodies.

a) Foreign activities in Mexico

Foreign investment

Bilateral cooperation with various countries in issues of fishing and aquaculture is focused on environmental, technical-scientific and economic-commercial problems rather than on investment in technology and equipment. Actions taken by Mexico are oriented towards supporting other countries in the region for their own fishing development and promoting foreign capital investments and co-investments in Mexico's fisheries for capitalization, access to new technologies, and up-to-date production processes.⁷⁷ Foreign investments in fisheries are restricted to 49% maximum of capital with 51% Mexican investment, whereas foreign capital investment in aquaculture and marine product processing may be as high as 100%.

During 2005, cooperative fishing projects were carried out with the USA, Cuba, Honduras and Guatemala, among others; additionally, licence programmes for foreign researchers and grants for overseas training were supported.⁷⁸

Fishing by foreign vessels

A licence or permit issued by the Ministry of Fisheries is required to fish in waters under Mexican jurisdiction. Only Mexicans and Mexican companies working in vessels flying the Mexican flag may be granted such licences or permits. In exceptional circumstances, permits may be issued to persons operating vessels

flying a foreign flag which provide a number of places for Mexican workers for fishing in the EEZ.⁷⁹

In 1976, Mexico and Cuba signed a Fisheries Agreement relating to fishing for groupers and snappers, among others, within Mexico's EEZ. Mexico's naval authorities have the right to stop and board any vessel flying the Cuban flag that is fishing in the area, in order to inspect it. The Mexican government can impose measures and sanctions, under the terms set forth in its law, on Cuban ships that infringe Mexican legislation. Measures and sanctions may include seizure of catch and fishing gear, fines, vessel detention and application of sureties.⁸⁰

No information is currently available that the Mexican government has granted fishing licences to foreign fleets other than the Cuban fleet.

b) Purchase of fish by foreign food companies

National laws regulating sales of fish to other countries Regarding trade with the European Union, CONAPESCA carries out activities to support Mexican fishing exports in coordination with the Ministry of Health. Mexican fishing companies, in close communication with officials from the Comisión Federal para la Protección contra Riesgos Sanitarios (COFEPRIS – Federal Commission against Sanitary Risks), took the necessary actions and measures to allow for the certification of vessels and seafood-processing plants, and their inclusion in the EU Register of Approved Facilities for Exports. Today, 24 octopus, lobster, tuna, crab, shrimp and squid plants have been certified.⁸¹

77 Ibid.

78 Ibid.

79 NAFTA. Official Gazette of the Federation. December 20, 1993.

80 Organisation for Economic Co-operation and Development (OECD). (2005). *Why Fish Piracy Persists. The Economics of Illegal, Unreported and Unregulated Fishing*. Paris: OECD.

81 SAGARPA, supra, note 75.

The main seafood product exported from Mexico is shrimp. This is exported mainly to the USA. However, access to this market is restricted as a result of a series of conditions set forth by US legislation aimed at protecting sea turtles. The Mexican government maintains a permanent protection policy for sea turtles, which has allowed them to maintain continuity in shrimp exports. The National Program for Sea Turtle Protection contains a number of provisions to protect sea turtle species coming to Mexican coasts to breed, and to assist in the recovery of their populations.⁸²

The Mexican fleet has been able to maintain shrimp exports to the USA due to its satisfactory performance in implementation of sea turtle-protection involving excluders in trawls – these exports amount to US\$ 250-300 million each year.

Voluntary quality-control schemes

The demand for seafood in Mexico, particularly outside Mexico City, can occasionally be high, at specific times of the year (e.g., Easter and Christmas). The rest of the year is characterized by low consumption due to ignorance of fish products and their properties. The seafood consumer is not yet ready to influence, from the demand end, fishing methods, the types of gear used, fishing during closed seasons, etc. However, this is not specific to the seafood market alone, but applies to many other products. Promotion of smart consumption is needed, to encourage consumers to be more aware of price and quality, and of their potential

impact on markets and production through demand. To date, only a few small steps have been made to alert the consumer to more conscious consumption practices.

In 2004, the Baja California Regional Federation of Fishing Cooperatives (FEDECOOP in Spanish) obtained Marine Stewardship Council (MSC) certification for their Red lobster fishery. This was the first eco-certified fishery awarded to a developing country, for passing the strict and independent inspection following international criteria for sustainable and well-administered fisheries. FEDECOOP registers about 1,200 members operating in zones concessioned for lobster, abalone and other marine resources, stretching from Isla de Cedros to Punta Abreojos along the Baja California peninsula's western coast.

The MSC eco-label offers consumers the certainty that the seafood was harvested from a sustainable and well managed fishery, thus helping to improve the condition of oceans and solve the crisis that fisheries are facing throughout the world. More than 100 seafood dealers worldwide have committed to purchasing MSC-certified products, including large supermarket chains in France, Germany, Switzerland, United Kingdom and the USA. Certification empowers the consumer to express his/her desire to stop overfishing and creates market incentives aimed at achieving healthier fisheries and hence healthier seas when sea products are mass consumed.⁸³

III. Case study: the Gulf of California

The Gulf of California is an ecosystem of global importance where multiple productive and economic activities are conducted along the coastline (e.g., agriculture, aquaculture, tourism) and adjacent waters (industrial fisheries, sport fishing) of this basin.

This large marine ecosystem (LME) is bordered by five states: Baja California, Baja California Sur, Sonora, Sinaloa and Nayarit.

In the year 2000, the total population of these five states was 8,585,406 inhabitants.⁸⁴ The population working in primary activities like agriculture, raising livestock, forestry and fishing, relative to the total labour force was: Baja California, 6%; Baja California Sur, 12%; Sonora, 16%; Sinaloa, 28%; and Nayarit, 28%, on average,⁸⁵ showing the economic importance of resource extraction activities in this region, including fisheries. Their contribution to GDP by State in 2004,

82 Ibid.

83 http://www.wwf.org.mx/wwfmex/archivos/gc/040428_certifPesqueria.php.

84 INEGI. (2001). *Censo General de Población y Vivienda, 2000* (2000 General Census on Population and Housing). Aguascalientes, Ags.

85 Ibid.

relative to the national figures, was: Baja California, 3.23%; Baja California Sur, 0.58%; Sonora, 2.66%; Sinaloa, 2.05%; and Nayarit, 0.54%, amounting to a total of 9.07%.⁸⁶

There are four major fisheries in the Gulf of California, namely shrimp, sardine, squid and tuna. Of these, shrimp represents the main source of income in the fishing sector, in terms of economic value. In 2002, shrimp production in the five states was 63,521 tons (coastal lagoons and estuaries, open seas and farming), representing approximately US\$ 319,198,402, using ex-vessel prices in all cases. Sardine production in these five states was 499,978 tons and reported an income of US\$ 7,266,361. Squid production was 86,143 tons with an income of US\$ 16,966,932. Lastly, tuna with an ex-vessel production of 107,292 tons in these five states corresponds to an income of US\$ 70,267,455.⁸⁷

There is a Marine Ecological Management Program for the Gulf of California, an environmental policy instrument through which the government and society jointly contribute to a regional management process. This process was formally initiated on June 5, 2004, through the signing of the Coordination Agreement between the federal government (represented by six federal agencies: SEMARNAT – environment; SAGARPA – agriculture and fisheries; SEGOB – interior; SEMAR – maritime affairs; SECTUR – tourism; and SCT – communications) and five coastal state governments (Baja California, Baja California Sur, Nayarit, Sinaloa and Sonora).⁸⁸

This management process for the Gulf of California involved the participation of various stakeholder sectors: government, industrial fisheries, inshore fisheries, conservation organizations, tourism, aquaculture, indigenous groups and academia.

As a first step, all available environmental and social data for the Gulf of California at a regional level were collected. The study area was regionalized into marine

environmental units, defined as areas sharing similar features. Likewise, since activities conducted on land can have a major impact on the sea, terrestrial influence units were also identified and defined, based on hydrological basins and State borders. As a result, 123 marine environmental units and 32 terrestrial influence units were determined.⁸⁹

This management process aimed to identify the suitability of different areas for fostering or allowing the development of sectorial activities (e.g., tourism, fishing, conservation) and to identify when a given area displayed high suitability values for two or more such sectors, and therefore risked a potential conflict in terms of competing resource uses.

In order to facilitate actions in the study area, 22 Environmental Management Units (UGA in Spanish) were created which share homogeneous characteristics in terms of regional stress, fragility and vulnerability patterns. Of these, 15 are coastal and are designated inshore management units (UGC in Spanish), and seven are located in oceanic areas, and are hence designated oceanic management units (UGO in Spanish) (see Figure 2).⁹⁰

The integral management of marine resources involves acknowledging all uses and the economic, environmental, social and cultural values associated with activities conducted in the marine environment. As a holistic approach, it enables the establishment of policies and schemes to guarantee the maintenance of the ecosystem's structure and functioning, as well as to improve the living standards of the populations dependent on these resources. The inter-sectorial approach involves raising the need to articulate the generation and implementation of different public policy instruments leading to sustainable use and protection of marine and inshore environments, their resources, and the environmental services they provide. It must be ensured that coordinated actions are taken by government agencies and that the economic,

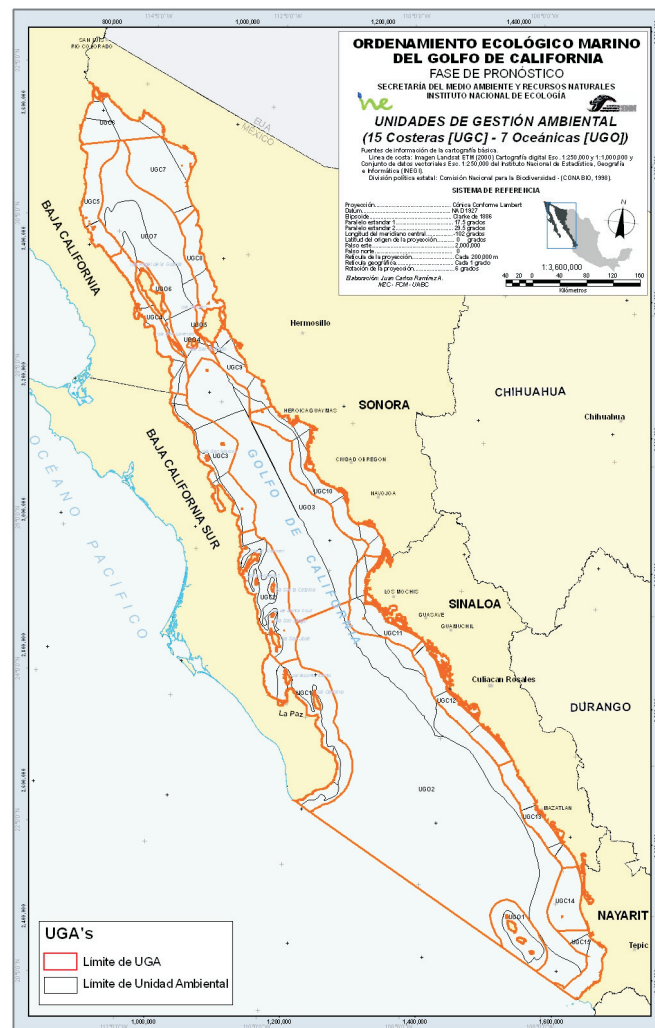
86 Banamex/Citigroup. Division of Economic Studies. GNP Estimates. 2004.

87 SAGARPA. (2004) *Anuario Estadístico de Pesca*. Estimaciones de ingreso elaboración propia en este trabajo.

88 AGREEMENT that issues the Gulf of California's Marine Ecological Management Program. Official Gazette of the Federation. December 15, 2006.

89 Ibid.

90 Ibid.

Figure 2. Environmental management units in the Gulf of California

Source: Agreement that issues the Gulf of California's Marine Ecological Management Program. Official Gazette of the Federation. December 15, 2006.

environmental, social and cultural values associated with the various sectorial activities within a region are incorporated.⁹¹

The Marine Ecological Management Program for the Gulf of California is a good example of this. It specifically aims to implement a number of actions to be applied at a regional level by sector, oriented towards developing sustainable productive activities in the Gulf of California, and brings together the relevant federal agencies (Ministry of the Environment and Natural Resources; Ministry of Tourism; Ministry of Agriculture, Livestock, Rural Development, Fisheries and

Food; Ministry of Communications and Transportation; Ministry of Energy; Ministry of the Interior; National Council of Science and Technology), as well as the state authorities of Baja California, Baja California Sur, Sonora, Sinaloa and Nayarit.

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91 Ibid.

6 Promotion and Management of Marine Fisheries in the European Community

Till Markus

Summary

The Community's Common Fisheries Policy (CFP) was established to ensure that the exploitation of living aquatic resources in Community waters and by Community fisheries is carried out at sustainable levels. However, since its inception in 1970, the CFP has pursued conflicting objectives. On the one hand, it has tried to manage fisheries by establishing and implementing a complex system of conservation, control and enforcement measures. On the other hand, it has heavily subsidized its fisheries sector to secure food supplies, increase employment and the sector's competitiveness as well as to further economic development in coastal regions.

Given that many fish stocks exploited by Community fisheries are overfished and catches continue to decline, it could be argued that Community management and promotion measures have generally failed. Conservation measures, such as total

allowable catches, effort restrictions, and technical measures often encourage fishing at unsustainable levels; and control and enforcement measures have lacked effectiveness. Subsidies have, in many cases, increased the fishing and processing capacities of the Community's fisheries industry. However, high capacity in the sector demands high catch rates, putting pressure on marine capture resources. It has only been recently that the CFP has really begun to adjust its support practices to correspond to the situational and legal management requirements. Nevertheless, such subsidies continue even under the new European Fisheries Fund.

It is the purpose of this report to: (a) explain the CFP's complex management and promotional regimes; (b) identify problems and failures in both systems, and (c) find out how consistency between promotion and management can be increased.

I. Environmental, socio-economic and political background of the European Common Fisheries Policy

Different influences shape the Community fisheries regime and its implementation. In general, the environmental condition of Europe's marine territories and coastal zones forms the overall basis for policy decisions. To illustrate the forces directing the CFP, the ensuing

section will present a brief overview of the multiple demands and pressures on the Community's coasts, marine waters and fish stocks. Following this description will be an explanation of the political and public discourse on fisheries.

1. Overview of multiple demands and pressures on the EC coastal zones and marine ecosystem

The Community has a coastline of approximately 68.000 km¹ and its EEZ is the world's largest,

covering over 25 million km².²

1 European Commission. (2006). *Maritime Facts and Figures*, p.3. Luxembourg: Office for Official Publications of the European Communities.
2 See EUROPA Glossary, available online at <http://europa.eu/scadplus>.

1.1 Overview of human activities affecting Europe's coasts and marine waters

The European Environmental Agency (EEA) states that urban settlements on Europe's coasts are comprised of about 280 cities with more than 50,000 inhabitants in each.³ About 70 million EU citizens live in coastal regions, with approximately 16 % of the population living on about 11 % of the total land mass.⁴

Furthermore, the tourist industry in coastal areas and acquisitions of second homes for urban residents have increased sharply over the last decades. Since many tourists visit the coasts, this industry has been one of the prime commercial activities contributing to coastal development. For example, France, Spain and Italy together received about 174 million tourists in 2004, many of them visiting the Mediterranean.⁵

About 20% of the Community's industry is located on the coasts, with one-third on the North Sea. Many of these enterprises depend on seaways or ocean resources, such as oil, gas and fish, or water and wind power. During the 1990s the marine transport of passengers and goods within Europe rose steadily, an increase of about one-third to about 1,270 billion tonne-kilometres.⁶

All these activities put pressure on Community fish habitats, contributing to, for example, oil spills, the introduction of alien species through marine transports, chemical pollution and eutrophication.⁷

1.2 Overview of the nature and socio-economic significance of the Community fisheries sector

According to Eurostat, the *per capita* consumption of fish varies greatly throughout the Community's 27 Member States. While the average consumption of an EC citizen is 20.3 kg per year, each Spaniard, Portuguese and Lithuanian consumes about 43.3, 54.5 and 36.7 kg per year, respectively, while Slovenians, Bulgarians and Romanians only eat about 6.5, 3.1 and 2.6 kg per year.⁸

Currently, marine catching and aquaculture production amounts to approximately 4% of the world's total. Since 1993, total EU-27 production declined by about 17%. The Community accounts for 6% of the world total catch (5.6 million tonnes), a decline over the period 1993-2005 of about 22%. The Community share of the world's aquaculture production was only 2% or 1.27 million tonnes.⁹

The Community has a negative trade balance in fishery products, both in terms of volume and value. France, Germany, Italy, Spain and the United Kingdom are the Community's major importers. Imports have risen to 6.23 million tonnes in 2006, equalling €17.2 billion.¹⁰

In 2006, the EU-25 fleet comprised 87,004 fishing vessels. However, the mere number of vessels is not an accurate indicator of overall fishing power. Tonnage and engine power are considered to be more reliable factors in this regard. In 2005, these two accounted for 1,955,879 gross registered tonnes (GRT) and 7,068,471 kW for the then 25 Member states. It is necessary to mention that the fleet is structured differently throughout the Community. The fleets of Greece, Portugal, Italy and Finland tend to maintain a

3 European Environment Agency (EEA). (2007). *Europe's environment – The fourth assessment*, pp.210-250. Luxembourg: Office for Official Publications of the European Communities; see also European Environment Agency. (2005). *The European environment – State and outlook 2005*, pp.132-167, 380-391. Luxembourg: Office for Official Publications of the European Communities.

4 EEA, 2007, *supra*, note 3, p.240.

5 EEA, 2005, *supra*, note 3, p.149.

6 *Ibid.*, pp.150-151.

7 *Ibid.*, pp.152-153; EEA, 2007, *supra*, note 3, pp.215-217.

8 The average annual *per capita* consumption for Iceland is 91.5 kg, and 48.7 kg for Norway. In contrast, the average *per capita* fish consumption on the African continent in 2002 was 7.8 kg; Eurostat. (2007). *Fishery Statistics – Data 1990-2006*, pp.8-61, at 58. Luxembourg: Office for Official Publications of the European Communities; FAO. (2004). *The State of World Fisheries and Aquaculture*, pp.39-43. Rome: FAO.

9 Eurostat, *supra*, note 8, pp.18-19, 22-23.

10 *Ibid.*, pp.44-45.

large number of small-scale fishing vessels. Countries like Belgium and the Netherlands have a few large ships in terms of engine power and tonnage.¹¹ The fleets belonging to France, Spain and the UK maintain many small-scale vessels, as well as a few high-powered vessels.¹²

Due to variances in assessment methods across the Member States, employment rates in the fisheries sector are somewhat imprecise.¹³ Nevertheless, in 2006 the Commission published a comprehensive study¹⁴ which found that the total number of people employed in the fisheries sector in 2002/2003 was estimated to be about 421,000 persons, of whom 405,000 were involved in the marine fisheries sector. Approximately 209,000 people had actually worked as fishermen on board fishing vessels (approximately 99,000 on small-scale coastal vessels and 110,000 on off-shore vessels). The number of fishermen has declined by 4% since 1996 to 5%. Aquaculture provided for about 65,400

of these jobs and the processing industry for about 147,000.¹⁵

Aquaculture production in the Community rose from 642,000 tonnes in 1980 to 1,374,000 tonnes in 2006, now accounting for 19% of overall volume and 30% of total fishery production.¹⁶ The aquaculture sector basically consists of three groups: freshwater fish farming, marine mollusc farming, and marine fish farming.

In 1998, the value of the whole production chain (i.e., fishing, aquaculture, processing and marketing) was estimated at € 20 billion, approximately 0.28% of the Community's gross domestic product.¹⁷ Despite this relatively small share, many coastal communities rely heavily on fishing as a source of jobs and income. In some areas in Scotland and Spain, the fishery sector provides for more than 10% of the overall employment.¹⁸

2. State of the marine environment and fish stocks throughout the Community

The European Environmental Agency (EEA) report on Europe's environment draws the following conclusions for 2007:

Of those stocks that had been assessed, 14% in the Arctic were outside safe biological limits, whilst for the North-East Atlantic and Baltic Seas this was 26%. Within the North-East Atlantic, the North Sea was the most severely affected with 44% of the assessed commercial stocks outside safe biological limits, followed by the Celtic Sea with 30% outside them [...]. In the Mediterranean Sea, the percentage

*of assessed commercial stocks outside safe biological limits in 2005 ranged from 10-20% with Aegean and Cretan being in the worst condition. [...] Bluefin tuna stocks both in the eastern Atlantic and Mediterranean Seas have been identified as being near collapse.*¹⁹

A further problem is that many of the exploited stocks are insufficiently monitored. For example, the EEA states that, in 2006, 81% of Arctic, 67% of Baltic Sea and 54% of North-Eastern Atlantic commercial fish stocks remained unassessed.²⁰

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- 11 European Commission. Communication Green Paper on the Future of the Common Fisheries Policy, vol. II b, p.5. Com(2001) 135 final.
 - 12 Ibid. pp.25-40.
 - 13 Eurostat, *supra*, note 8, p.57.
 - 14 Salz, P., Buisman, E., Smit, J. and de Vos, B. (2006). *Employment in the Fisheries Sector*. Brussels: EC; for older data, see European Commission. (2000). *Regional Socio-economic Studies on Employment and the Level of Dependency on Fishing*. Brussels: EC.
 - 15 Salz et al., *supra*, note 14, p.17; European Commission, *supra*, note 14, pp.30-31.
 - 16 European Commission. Strategy Paper for the Sustainable Development of European Aquaculture, pp.3-4. Com(2002) 511 final; European Commission. (2006). *Facts and Figures on the CFP 2006*, p.16. Luxembourg: Office for Official Publications of the European Communities.
 - 17 European Commission, *supra*, note 11, vol. II b, p.4. In 2005, GDP at current prices stood at • 10,817,000 million for EU-25, see Eurostat. (2007). *Eurostat Yearbook*, pp.50, 151. Luxembourg: Office for Official Publications of the European Communities.
 - 18 EEA, 2005, *supra*, note 3, p.147.
 - 19 EEA, 2007, *supra*, note 3, p.223; more numbers are provided in European Commission. Communication from the Commission to the Council on Fishing Opportunities for 2008 – Policy Statement from the European Commission, p.5, Com(2007) 295 final; ICES. (2003). *Environmental Status of the European Seas*, pp.37-42. Copenhagen: ICES.
 - 20 EEA, *ibid.*, p.223; European Commission, *ibid.*, p.5.

Overfishing has been widely identified as one of the most important factors causing the depletion of fish stocks. However, as mentioned above, other factors also influence the state of fisheries resources, both

directly and indirectly. It is also important to note that overfishing decreases the resilience of stocks against such influences.²¹

3. Formation of the Common Fisheries Policy

Various political actors and interest groups contributed to the development of the CFP. One must particularly note that the Community is a compound of nations and not a sovereign state. Member States' fisheries ministers and the Commission negotiate the CFP and adopt pertinent legislation within the Community's central legislative organ, i.e., the Council.²² They decide on all important matters concerning fisheries management, structural policy, market organization

and other external concerns, to the extent that these duties have not been delegated to the Commission.²³ Thereby, they are influenced and supported by various scientific bodies, as well as non-governmental interest groups. To gain a full picture of the CFP, it is important to understand the different perspectives that these different actors hold on fisheries issues. Before briefly describing these actors, an overview of the elements of the CFP will be given.

3.1 The central elements of the Common Fisheries Policy

The CFP is concerned with the sustainable exploitation of living aquatic resources and Member States' fisheries sectors. This requires a broad range of political and legislative actions in a range of policy areas.

To guarantee that Community fishermen do not fish at unsustainable levels, the Community limits fishing opportunities. Currently, it does so by adopting total allowable catches (TACs), effort limitations, technical and control measures. It also apportions the available resources among its Member States, which then allocate their share to their own fishers. When imposing catch limitations, the Community increasingly takes environmental concerns into consideration, for example, requiring the use of environmentally friendly fishing gear or prohibiting fishing in environmentally sensitive areas.

Rules adopted under the CFP also relate to the structure of the Community's fisheries sector.

'Structure' basically refers to the equipment required for the production of fisheries products and the organization of the production process.²⁴ The primary aim of such structural policies is to support the sector in adapting its production capacities to correspond to available resources, thereby guaranteeing efficient and sustainable production. It also aims at increasing the competitiveness of the sector, and working towards socio-economic stability and social cohesion within different fishing regions.²⁵ Just like catch limitations, structural measures increasingly consider environmental aspects.²⁶ Public financial transfers under the structural policy are considerable. From 2000-2006, over € 4.1 billion had been allocated to the Community's fisheries sector.²⁷ Financial transfers from 2007-2013 lie at approximately € 3.8 billion.²⁸

Another area of the CFP is the common organization of the market for fisheries products. Different objectives are pursued in this regard. Given

21 Pauly, D., Christensen, V., Dalsgaard, J., Froese, R. and Torres, F. (1998). 'Fishing down the marine food webs'. *Science* 279: 860-863; EEA, *ibid.*, pp.237-239.

22 Article 202, Article 37(2), paragraph 3 of the Treaty and Article 29 Regulation (EC) 2371/02.

23 Articles 203, paragraph 2 and 202, paragraph 3 of the Treaty, Article 211, paragraph 4, Article 37(2), paragraph 2 of the Treaty.

24 Churchill, R.R. (1987). *EEC Fisheries Law*, p.203. Dordrecht: Martinus Nijhoff.

25 Council Regulation (EC) 1198/06 on the European Fisheries Fund, OJ 2006 No. L223/1.

26 *Ibid.*, Article 25 (6)(c),(d), (7),(8); Articles 30 (2)(a)-(c) and 35 (1)(d); Articles 37 and 38; Articles 40 (3)(d),(f); Articles 43 (2)(c), 44 (1)(b),(f); Articles 30 (2)(d), (4)(d) and 38 (2)(c).

27 European Commission, *supra*, note 16, p.25.

28 European Commission. (2006). *The European Fisheries Fund 2007-2013*, p.10. Luxembourg: Office for Official Publications of the European Communities.

the unstable supply of fisheries resources, the Community takes measures to stabilize markets.²⁹ It also aims to match supply with demand. To this end, the Community intervenes in the market by establishing common marketing standards, producer organizations, and a system of trade with third countries. The system was introduced in 1970 and has, to this day, not been modified substantially.³⁰

To effectively limit fishing activities, structure the sector and stabilize markets, the Community is also

responsible for the external promotion of its fisheries policies (i.e., with non-Member States).³¹ It has concluded several international agreements, which allow Community vessels to fish in the waters of third countries.³² Furthermore, the Community is currently a member of 11 international fisheries organizations (IFOs), which are concerned with the management of fisheries resources on the high seas.³³ Finally, the Community controls the implementation of CFP measures by Member States.³⁴

3.2 The structure of the political debate

The political debate on the CFP is largely determined by the legal framework that supports the adoption of legislation under the CFP. Article 37(2), paragraph 3 of the Treaty establishing the European Community (Treaty) provides that '[...] the Council shall, on a proposal from the Commission and after consulting the European Parliament, acting by a qualified majority, make regulations, issue directives, or take decisions [...]']

In fact, most political initiatives connected with the CFP find their origin in the Community's executive

branch, the Commission. The latter relies heavily on scientific advice from external institutions (e.g., the International Council for the Exploration of the Seas (ICES)) and its internal Scientific, Technical and Economic Committee for Fisheries (STEFEC) for legislative purposes. In addition, stakeholder committees, other Commission departments, as well as the European Parliament are consulted. When these consultations are over, the Commission draws up a final proposal and forwards it to the Council.

3.3 The interests of the Member States and negotiations in the Council

The Council is the central body within which Member States negotiate the CFP and adopt pertinent legislation.³⁵ It is comprised of the Ministers responsible for fisheries policy within their respective Member State. It decides on all important matters concerning fisheries management, structural policy, market organization and other external concerns, to the extent that these duties have not been delegated to the Commission.³⁶ Even though the CFP only constitutes

a minor portion of the Community's gross domestic income, it has often proven to be a cumbersome and difficult policy area to manage. In the Council, Member States particularly divide up the available fish stocks. In this distributive bargaining situation, Member States tend to promote their respective national economic interests rather than the common Community interest. This frequently leads to the adoption of exploitation rates that are unsustainable.

29 Regarding market stability see Reasons (4), (11) and (27); regarding increasing profitability see Reason (6) and Articles 2 and 3; regarding increasing the variety of supply, see Reason (8) of Regulation 104/2000 on the common organization of the markets in fishery and aquaculture products, OJ 2000 No. L017/22.

30 See Articles 7-16 of Regulation 2142/70 on the common organization of the market in fishery (and aquaculture) products, OJ 1970, No. L236/5; Articles 8-17 of Regulation 100/76, OJ, 1976, No. L020/1; Articles 9-18 of Regulation 3796/81, OJ 1981, No. L379/1; Articles 9-21 Regulation 3687/91, OJ 1991, No. L354/1; Articles 8-18 of Regulation 3759/92, OJ 1999, No. L388/1.

31 Cases 3, 4 and 6/76, Kramer and others [1976] ECR 1279, paras 30-33.

32 Rijn, T., van. (2004). 'Fischereipolitik – Kommentar nach Article 38 EG'. In: von der Groeben, H. and Schwarze, J. (Eds). *Kommentar zum Vertrag über die Europäische Union und zur Gründung der Europäischen Gemeinschaft*, pp.1251 *et seq.* Baden-Baden: Nomos.

33 See European Commission. Communication from the Commission to the Council and the European Parliament – Community Participation in Regional Fisheries Organizations (RFOs), Com(1999) 613 final.

34 See Articles 16(1), 23(4), 26(3), 27 of Regulation 2371/02. See also Council Regulation (EEC) 2847/93 establishing a control system applicable to the Common Fisheries Policy, OJ 1993, No. L261/1 as amended.

35 Article 202, Article 37(2), paragraph 3 of the Treaty and Article 29 Regulation (EC) 2371/02.

3.4 The Commission's role in the CFP

Under the Community's institutional framework, the Commission has been assigned three basic tasks, which help to shape its own political agenda regarding the CFP. According to the Treaty, the Commission initiates Community policies, takes decisions delegated to it and supervises the implementation of EC legal acts by Member States.³⁷ Its primary political motivation is to further the European integration process, to act as a mediator for Member States in the Council, and to stabilize its own powers.³⁸

The Commission's strong legislative power, *inter alia*, derives from its right to initiate proposals, from the fact that the Council may only overturn the Commission's proposals by unanimous vote as well as it's the right to adopt provisional measure in case

Member States cannot agree in the Council.³⁹ It has been observed in a range of policy areas that the Commission often anticipates Council preferences, mirroring them in its own proposals.⁴⁰ Under the CFP, for example, the Commission regularly proposes higher TACs than recommended by ICES, which are then once more increased by the Council.⁴¹

Nevertheless, the Commission's approach to the CFP tends to be more integrated, comprehensive and conservation-oriented, than the legislation that is finally adopted. The Commission often tries to integrate other important aspects into its fisheries policy such as, for example, Integrated Coastal Zone Management,⁴² biodiversity,⁴³ environmental policies⁴⁴ and good governance.⁴⁵

3.5 The political dialogue with the European Parliament

Article 37(2), paragraph 3 of the Treaty only requires that Parliament be *consulted* during the legislative process. Moreover, it does not have the right to initiate legislative procedures itself, but may only request that the Commission submit a proposal on matters on which it considers a Community act is legally necessary for the implementation of the Treaty.⁴⁶

Parliament's assent is required, however, whenever the Community enters into an agreement with foreign

states or international organizations to 'establish an association involving reciprocal rights and obligations, common actions and special procedure'.⁴⁷ The Parliament also substantially influences the CFP through its powers regarding the yearly adoption of the Community budget.⁴⁸ Compared to the number of regulations adopted under the CFP such cases are few and thus both opinions and requests for proposals are also important instruments for Parliament's participation in the CFP.

36 Articles 203, paragraph 2 and 202, paragraph 3 of the Treaty, Article 211, paragraph 4, Article 37(2), paragraph 2 of the Treaty.

37 Ibid., Article 211. In principle, the Commission is the sole organ of the EC that initiates legislative proposals. However, the Council and Parliament can request that the Commission submit proposals to the Council, pursuant with Article 211, Article 208 and Article 192, paragraph 2 of the Treaty.

38 Smyrl, M.E. (1998). 'When (and how) Do the Commission's Preferences Matter?' *Journal of Common Market Studies* 36: 79-99; Conceição-Heldt, E. da (2004). *The Common Fisheries Policy in the European Union: A Study in Integrative and Distributive Bargaining*, pp.46-47. New York/London: Routledge.

39 See Articles 10, 211 and 250(1) of the Treaty; Garret, G. (1992). 'International Co-operation and Institutional Choice: The European Community's Internal Market'. *International Organization* 46: 533-60. An exception intervenes in cases of co-decision of the European Parliament. But as fisheries legislation is no matter of co-decision the exception does not apply.

40 Pollack, M.A. (1997). 'Delegation, agency, agenda setting in the European Community'. *International Organization* 51: 99-134.

41 See Chapter on Fisheries Management under the CFP in this report.

42 European Commission. Communication from the Commission to the Council and the European Parliament on integrated coastal zone management, pp.5-7, 14, 15-16, Com(2000) 547 final.

43 European Commission. Communication from the Commission to the Council and the European Parliament – Biodiversity Action Plan for Fisheries, pp.4-32, Com(2001) 162 final.

44 European Commission. Communication from the Commission to the Council and the European Parliament – Elements of a Strategy for the Integration of Environmental Protection Requirements into the Common Fisheries Policy, pp.3-22, Com(2001) 143.

45 Since the reform in 2002, the CFP is supposed to be guided by four principles of good governance laid down in Article 2(2) of Regulation 2371/2002.

46 Article 192, paragraph 2 of the Treaty.

47 Ibid., Article 300(3), paragraph 2 and Article 310.

48 Ibid., Article 272(3)-(8). The powers of the Parliament are laid down in Section 38, Annexes, IV, VI of the Interinstitutional Agreement of 6 May 1999 between the European Parliament, the Council and the Commission on budgetary discipline and improvement of the budgetary procedure, OJ 1999 No. C172/1-22.

Parliament's Committee on Fisheries, which is composed of parliamentarians from different European parties from different Member States, is the forum that deals with the opinions, reports and requests for proposals. These Parliamentarians are mainly perceived to be 'intermediaries for the fishing industry's territorialized interests in the Community sphere'.⁴⁹ Nevertheless, environmental NGOs try to exert their

influence by lobbying 'green' parliamentarians.⁵⁰ Parliament also organizes informal 'Intergroups' consisting of members from different political parties and factions with an interest in particular issues. Some Intergroups are concerned with fisheries issues, such as the Intergroups on Fisheries, on Animal Welfare, on Sustainable Development and on Maritime Affairs.⁵¹

3.6 Public perception and its integration in the CFP

There are no empirical studies specifically dedicated to the topic of public awareness of fisheries issues. Thus, the following section will attempt to describe how affected non-governmental actors perceive fisheries issues and how their perceptions and interests influence political discourse.

In general, the European fishing industry tends to regard the CFP as hierarchical ('top-down'), and out of touch with the realities of the business.⁵² They often complain that the Commission proposals overstate overfishing, and that their own knowledge about the state of fisheries resources is not given enough weight by the Commission's scientific advisors.⁵³ In many cases, their views may be characterized as being one-sided, and determined by their own (often short-term) economic interests. In pursuit of these interests, industry members often lobby government at the regional and national, but increasingly also European levels.⁵⁴ However, interest representation activities in the commercial fisheries sector (unlike the agricultural sector) are rather disassociated. Due to the range of institutional structures and manifold interests at

national and regional levels, a strong and united European lobby has not yet developed.

Environmental, development and consumer NGOs pay much attention to overfishing and other threats to marine living resources.⁵⁵ NGOs are often very critical of the CFP. They conduct research, review Community legislation, issue reports and opinions to the Community institutions and organize public campaigns and educational programmes, in order to draw attention to problems in the industry. Formal communication with the Commission mainly takes place through the Consultative Committee for Fisheries and Aquaculture (ACFA) and the Regional Advisory Councils. In the reform of the ACFA in 1999, environmental, development and consumer groups were given three of the 21 seats in the assembly. In the Regional Advisory Councils they are allotted not more than one-third of the seats.⁵⁶ Communication with the Parliament is informal, often through individual parliamentarians, especially members of the Green Parties as well as through Intergroups.⁵⁷

49 Lequesne, C. (2004). *The politics of fisheries in the European Union*, p.40. Manchester: Manchester University Press.

50 Ibid.

51 See for example www.ebcd.org/EPISD.html. Article 2 (b) Annex 1 of Parliament's Rules of Procedure requires the chairmen of such groups to declare any support they receive.

52 Holden, M. (Ed.). (1994). *The Common Fisheries Policy*, pp.1-2. Oxford: Fishing News Books.

53 Garrod, D. (1994). 'The Common Fisheries Policy – Now'. In: Holden, supra, note 52, pp.270-271.

54 Examples for Germany, Scotland and the Netherlands are Bundesverband der Deutschen Fischindustrie und des Fischgroßhandels, see online at www.fischverband.de; The Scottish Fishermen's Association, see online at www.sff.co.uk; and the Productschap Vis, see online at www.pvis.nl. See also www.europêche.org.

55 Friends of the Earth Europe online at www.foeeurope.org; Greenpeace Europe Unit online, available at <http://eu.greenpeace.org/issues/oceans.html>; WWF, available online at www.panda.org; Oceana, available online at www.oceana.org. A network of smaller, more locally oriented NGOs is Seas at Risk, see online at www.seas-at-risk.org.

56 Article 31(2) Council Regulation 2002/2371/EC; Article 5(3) Council Decision 2004/585/EC; Articles 2, 3(1)(2), 7 Commission Decision 1999/478/EC and Article 1 Commission Decision 1999/478/EC.

57 Lequesne, supra, note 49.

II. Institutional and organizational structures

The following chapter will outline the institutional and legal structure of fisheries governance in the European Community. It will describe the substantial and territorial powers claimed by the Community in

secondary legislation and outline the division of competences between Member States and the Community.

1. Community competences under the Treaty

The Treaty Establishing the European Community provides the legal foundation on which the Community builds its fisheries policy. It regulates the distribution of competences between the Community and the Member States, and allocates competences to the Community organs. In accordance with its rules,

the Community has adopted legislation in the area of fisheries management, structural policies, market organisation and external relations, i.e., international fisheries access agreements or fisheries management agreements.

1.1 Legal base

According to the fundamental ‘principle of conferred powers’, the Community may act only where it has been authorized to do so under the Treaty.⁵⁸ Thus, each legislative act of the Community must be based on a Treaty provision that confers upon it legislative powers.⁵⁹ Different policy areas are supported by different legal bases under the Treaty (horizontal competence order). In its early days, there was concern about finding the right legal base to support a Community fisheries policy. However, today the Community bases its fisheries policy on the provisions on agriculture in Articles 32-38 of the Treaty – particularly Article 37(2), third paragraph.

The Community is entitled by Article 6 of the Treaty to include environmental conservation aspects in fisheries legislation. Article 6 provides that ‘environmental protection requirements must be integrated into the definition and implementation of other Community policies and activities,’⁶⁰ ‘particularly with a view to promoting sustainable development’. The principle is based on the assumption that environmental policies cannot be viewed as separate from other policies.⁶¹

1.2 Territorial scope

According to Article 299(1) and (2), the Treaty, in principle, applies in all Member States as well as the Azores, Canary Islands, Madeira and the French overseas departments. Some overseas territories, in particular, Greenland, listed in Annex II of the Treaty, are excluded.⁶² Article 299(1) refers to the Member

States as legal entities, but does not explicitly mention their territories. Nevertheless, the use of the term *Member States* implies that the Treaty applies to all territories under their sovereign control, including their inland waters, ports and territorial seas,⁶³ the latter being determined by Article 2 of 1982 UNCLOS.

58 Articles 5(1) and 249(1) of the Treaty.

59 Bogdandy, A. von and Bast, J. (2005). ‘Article 5 EGV’, para. 7. In: Grabitz, E. and Hilf, M. (Eds). *Das Recht der Europäischen Union – Kommentar*. München: Beck.

60 Those mentioned in Article 3 of the Treaty.

61 Krämer, *EC Environmental Law*, p.19.

62 Van Rijn, *supra*, note 32, pp.1251-1252.

63 Case C-286/90, *Anklagemydigheden v Poulsen and Diva Navigation Corp.* [1992] ECR I-6019, para. 24; see also Schröder, M. (2004). ‘Article 299 EG’. In: von der Groeben, H. and Schwarze, J. (Eds). *Kommentar zum Vertrag über die Europäische Union und zur Gründung der Europäischen Gemeinschaft*, p.1554. Baden-Baden: Nomos; and Van Rijn, *supra*, note 32, pp.1251-1253; and Fischer, R.C. (1996). ‘Die gemeinsame Fischereipolitik’. In: Grabitz, E. and Hilf, M. (Eds). *Kommentar zur Europäischen Union*, pp.5-6. München: Beck; and Proelß,

Since sovereignty does not extend to the marine areas beyond the territorial sea, neither the EEZ nor the high seas would be included here. Thus, Article 299(1) of the Treaty does not justify the application of the Treaty beyond the territorial sea. However, the European Court of Justice (ECJ) has made clear that whenever rule-making competences are conferred on the Community by the Treaty, these competences extend to maritime areas insofar as Member States have similar powers under public international law.⁶⁴ Given the fact that Member States are empowered by public international law to exploit fisheries resources on the high seas as well as to exploit fisheries resources exclusively within their own EEZ, the Community's

competence to regulate their use and their conservation applies to these areas accordingly. Thus, fisheries governance in the EEZ and the high seas is not based on Article 299, but on Article 37(2), third paragraph of the Treaty.

Based on this decision, Churchill and others have correctly concluded that the CFP rules apply to: (a) all vessels engaged in fishing activities in the territorial sea or the EEZ of the Member States, (b) all vessels registered in the Member States fishing on the high seas (as well as those fishing on the continental shelf for sedentary species),⁶⁵ and (c) all vessels registered in the Member States fishing in third country waters.⁶⁶

1.3 Exclusive and shared competences

It has been explained above that the CFP consists of different policy areas, i.e., fisheries management, structural policies, market organization, control policies, external relations. Only with fisheries management does the Community hold an exclusive competence. In the other areas, legislative powers are *shared* between the Community and its Member States. In such areas Member States are generally not excluded from lawmaking by the Community's exercise of legislative powers. However, the principle of primacy of Community law⁶⁷ provides that Community law outranks Member States' law. Thus, Member States' competences in areas in which no exclusive competence

exist, are thus determined by the existing secondary legislation.⁶⁸ In some cases secondary legislation has, in fact, become so comprehensive that there is very little or no room for Member States to legislate. This effect is often referred to as '*terrain occupé*' or '*pre-emption*'.⁶⁹ This is particularly true for legislation on structural policy and market organization. However, Member States are still competent to implement and enforce Community law.⁷⁰ Only in very few cases does the Commission hold direct implementation powers. Finally, to effectively implement the policies assigned to it, the Community's external competences mirror its internal powers.

A. (2004). *Meeresschutz im Völker- und Europarecht*, p.278. Berlin. Czybulka questions the Community's competence to exclusively regulate fisheries within their territorial sea. He argues that Member States have not yet conferred their 'aquitorial' powers of the territorial sea to the Community, see Czybulka, D. (2006). 'Forschungsbedarf im marine Fischereirecht'. In: Bauer, H., Czybulka, D., Kahl, W. and Vosskuhle, A. (Eds). *Wirtschaft im offenen Verfassungsstaat*, pp.808, 811 and 824. München.

64 Kramer and others, *supra*, note 31. The decision says that it 'nonetheless follows from Article 102 of the Act of Accession, from Article 1 of the said regulation (i.e., Regulation 2141/70 – brackets inserted by the author) and moreover from the very nature of things that the rule-making authority of the Community *ratione materiae* also extends, insofar as the Member States have similar authority under public international law – to fishing on the high seas'.

65 See Article 77 (1) and (4) of 1982 UNCLOS.

66 Churchill, *supra*, note 24, p.68. Regarding situation (c), Churchill notices that CFP rules are concurrent with the third country's fisheries rules. The third country, of course, has the sole right to enforce rules within its waters; see also van Rijn, *supra*, note 32, p.1253 Fn. 50; and also Vitzthum, W.G. Graf von. (2006). 'Begriff, Geschichte und Rechtsquellen des Seerechts'. In: Vitzthum, W.G. Graf von. (Ed.). *Handbuch des Seerechts*, p.57. München: Beck.

67 Búrca, C. and Witte, D. (2002). 'The Delimitation of Powers between the EU and its Member States'. In: Arnall, A. and Wincott, D. (Eds). *Accountability and Legitimacy in the European Union*, p.210. Oxford: Oxford University Press.

68 Jarass, H.D. (1996). 'Die Kompetenzverteilung zwischen der Europäischen Gemeinschaft und den Mitgliedstaaten'. *Archiv des öffentlichen Recht* 121(2): 173-199, pp.185-189.

69 Regarding the CFP's common market organization, some authors put forward three reasons which suggest the existence of an exclusive competence in this area: firstly, Article 34(2) of the Treaty obliges the Community to coordinate the various national market organizations. Secondly, only the Community may effectively achieve this goal. Thirdly, secondary legislation pre-empts Member States from adopting legislation within the entire political field; see Boof, 'Article 32 EGV', p. 15; and Fischer, *supra*, note 63, p.4; and Kopp, 'Article 37 EGV', p.552.

70 Pühs, W. (1997). *Der Vollzug von Gemeinschaftsrecht*, p.74. Berlin: Duncker & Humblot.

An exceptional case is the Community's trade policy in fisheries products. Trade policy has traditionally not been grouped into the CFP. It is concerned with (a) trade between Member States and

(b) trade between Member States and third countries.⁷¹ In this area, the Community also holds exclusive competences.

2. Substantive and territorial scope of CFP secondary legislation

Article 1 of the current CFP Regulation 2371/02 sets out the substantial scope of the CFP, and presents a good overview of the areas in which the Community has made use of its above described powers under the Treaty. According to Article 1, the CFP should achieve the following:

1. It shall cover the conservation, management and exploitation of living aquatic resources, aquaculture, and the processing and marketing of fishery and aquaculture products where such activities are practised on the territory of the Member States or in Community waters or by Community fishing vessels or, without prejudice of the primary responsibility of the flag state, nationals of the Member States.
2. It shall provide for coherent measures concerning:
 - (a) conservation management,

- (b) limitation of the environmental impact of fishing,
- (c) conditions of access to waters and resources,
- (d) structural policy and the management of fleet capacity,
- (e) control and enforcement,
- (f) aquaculture,
- (g) common organization of the markets, and
- (h) international relations.

According to Article 32(1), the CFP shall extend to the *trade* in fisheries products as well as to products of first-stage processing directly related to these products.

In principle, CFP measures of secondary law have the same territorial scope as the Treaty.⁷² However, the Community has adopted several regulations, providing management measures for different marine areas, as, for instance, specific technical measures for the Baltic Sea and the Mediterranean.⁷³

3. Distribution of tasks – centralization v. decentralization

Even though the Community has an exclusive competence with regards to the conservation of marine resources and comprehensive powers regarding the

governance of the fisheries sector, Member States retain certain administrative and legislative powers.

3.1 Re-delegated powers⁷⁴

Member States are allowed to take so-called 'emergency measures' in waters falling under their sovereignty or jurisdiction.⁷⁵ They may do so where there is evidence of a serious and unforeseen threat to the conservation of living aquatic resources, or the marine ecosystem as a result of fishing activities.

Within 12 nautical miles of their baseline, Member States can go beyond Community measures aimed at the conservation and management of fisheries resources and the conservation of marine ecosystems.⁷⁶

⁷¹ Churchill, *supra*, note 24, pp.255 *et seq.*

⁷² Schröder, *supra*, note 64, p.1565.

⁷³ See below.

⁷⁴ Where the Community within its legislative competences assigns tasks to Member States, this is regarded as a re-delegation of powers. See Jarass, *supra*, note 69, p.186; Churchill, *supra*, note 24, p.92; and Long, R. and Curran, P.A. (2000). *Enforcing the Common Fisheries Policy*, p.59. Oxford: Blackwell Science.

⁷⁵ Article 8 of Regulation 2371/02.

⁷⁶ *Ibid.*, Article 9(1); see also Reason (11). See also: Article 45(2) of Council Regulation (EC) 850/1998 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms, OJ 1998, No. L125/1.

Member States have the same powers in their EEZ provided that the measures apply solely to fishing vessels flying the flag of the particular Member State and registered with the Community.⁷⁷

While according to Article 17(1) of Regulation 2371/02 the vessels of all Member States have *equal access* to resources within all Community waters, this right can be restricted by Member States within waters up to 12 nm from their baselines under their sovereign control or jurisdiction.⁷⁸ Thus, Member States can restrict fishing to fishing vessels that 'traditionally fish in those waters from ports on the adjacent coasts'.⁷⁹

While the Council sets TACs and allocates quotas annually, Member States themselves determine the method of distributing the assigned fishing opportunities to vessels being registered within their territory and flying their flags.⁸⁰ Insofar, they are free to pursue their own political and regulatory aims.⁸¹ The Commission must be notified of the proposed allocation method.

The activities of Member State in the area of market organization are basically limited to the financial and administrative support of producer organizations and the ability to ensure they fulfil their tasks. Producer organizations form the backbone of the common market organization.⁸² They have the

competence to implement catch plans, promote the concentration of supply, and stabilize prices.⁸³ Within this area of competence, the Member States are only allowed to require producers which are not members of the producer organizations to apply those rules they adopt.⁸⁴ Member States may also grant financial support to the organizations to offset the costs arising from their formation and of their production and marketing planning.⁸⁵

Member States have some discretionary powers regarding the implementation of the Community structural measures. Such powers concern the allocation of available Community funds to the different segments of their sectors. However, thereby they have to strictly abide by the framework provisions adopted at Community level. The system will be described in more detail below. The ability of Member States to grant additional state aid is also limited. According to Article 88(3) of the Treaty, Member States must notify the Commission of their intention to hand out state aid. To reduce the administrative workload, the Commission has established a Regulation that exempts aid granted to small- and medium-sized enterprises from the notification obligations under certain conditions. It also lays down guidelines outlining the criteria it applies when evaluating Member States' state aid proposals.⁸⁶

3.2 Unregulated fisheries issues

The Community has deliberately refrained from regulating in specific areas in order to leave particular competences to the Member States.

The Community has, for example, refrained from

adopting measures on non-commercial fishing. Only in the Mediterranean Member States are required to ensure that non-commercial fishing activities do not jeopardize CFP conservation and management efforts.⁸⁷

⁷⁷ Article 10 of Regulation 2371/02.

⁷⁸ The principle of free access is also limited by Community measures listed in Articles 4-10 of Regulation 2371/02. Particularly important in this respect are the annual allocations of stock-specific TAC quotas. Quotas are assigned to specific areas that subdivide Community waters, i.e., the so-called ICES areas. Quotas can only be fished in these specific areas. ICES areas can be viewed online at www.ices.dk.

⁷⁹ Article 17(2) of Regulation 2371/02.

⁸⁰ Ibid., Articles 20(3) and 3(d).

⁸¹ Fischer, *supra*, note 63, p.14.

⁸² Reason (9) of Regulation 104/2000.

⁸³ Ibid., Article 5(1).

⁸⁴ See Article 7(1) of Regulation 104/2000; Case 207/84, *de Boer v. Produktschap voor Vis en Visprodukten* [1985] ECR 3203, paras 32-33.

⁸⁵ See Article 15(1) of Regulation 2792/1999 and Article 10 of Regulation 104/2000.

⁸⁶ Commission Regulation (EC) 1595/2002 on the application of Articles 87 and 88 of the EC Treaty to State aid to small and medium-sized enterprises active in the production, processing and marketing of fisheries products, OJ 2004 No. L291/3. The Commission has also published *Guidelines for the Examination of State Aid to Fisheries and Aquaculture*, OJ 2004 No. C229/5.

⁸⁷ Article 17 of Regulation 1967/2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) 2847/93 and repealing Regulation (EC) 1626/94, OJ 2006 No L409/11

Another area of Community responsibility, which remains largely unregulated at the Community level, is the management of freshwater fisheries in inland

waters,⁸⁸ where only a few market rules and structural measures currently exist.⁸⁹

3.3 Participation rights of stakeholders within the CFP legislative process

The Community has established two different kinds of political committees: the Advisory Committee on Fisheries and Aquaculture (ACFA)⁹⁰ and the Regional Advisory Councils (RACs)⁹¹ (the latter having been established in the course of the 2002 Reforms). These committees grant stakeholders participation rights within the CFP legislative process. RACs in particular have provoked criticism. Firstly, they are only *consulted*

by the Commission.⁹² Secondly, given that the current state of fish stocks mainly results from the activities of the fishing industry (including lobbying), it has proved controversial that industry representatives clearly dominate both ACFA and RACs. Thirdly, scientists are not granted any voting rights.⁹³ Fourthly, they are not granted access to Community courts to have the Council's fisheries legislation reviewed.⁹⁴

III. Fisheries management under the CFP

1. Fisheries management instruments

The Community fisheries management regime, which includes control and enforcement measures, aims at

guaranteeing sustainable fishing.

1.1 Quantitative catch and effort limitations

Articles 20(1) and 4(2)(d) and (f) of Regulation 2371/2002 provide that the Council, acting by qualified majority, will decide on 'catch and/or fishing effort limits', the conditions associated with those limits, as well as the allocation of fishing opportunities among Member States. Setting maximum catch limits for specific stocks (total allowable catches or 'TACs') is the main management tool established in Community law. In addition, since 2002, effort limitations have played a growing role.

1.1.1. Total allowable catch and quotas

According to Article 3 (m) of Regulation 2371/02, 'catch limit' means a quantitative limit on landings of a stock or group of stocks over a given period.

a. The annual setting of TACs

The Council sets maximum catch limits annually for specific stocks based on the Commission's proposals.⁹⁵ TACs are fixed for stocks located in Community waters

88 Fischer, *supra*, note 64, p.8; Article 2 of Regulation 3760/1992 and Articles 1 and 30 of Regulation 2371/2002. Regulation 2371/2002 does not explicitly reiterate this limitation. There is no indication that the existing practice will be changed, see van Rijn, *supra*, note 32, pp.1252-1253 at cc) and footnote 46.

89 See Article 1 of Regulation 104/00 and Article 13 of Regulation 2792/99.

90 Legislation establishing and modifying the ACFA Committee: Commission Decision (EC) 864/2004 amending Commission Decision 1999/478/EC of renewing the Advisory Committee on Fisheries and Aquaculture, OJ 2004 No. L370/91.

91 Article 31 of Regulation 2371/02; Council Decision (EC) 585/04 establishing Regional Advisory Councils under the Common Fisheries Policy, OJ 2004, No. L256/17.

92 Article 31(4) of Regulation 2371/02, Article 2 Commission Decision 478/99, Article 3(3) of Council Decision 585/04; Hatchard, J. and Gray, T. (2003). 'The 2002 Reform of the Common Fisheries Policy's System of Governance – Rhetoric or Reality?' *Marine Policy* 27: 545-554, pp.546-550.

93 Ingerowski, J.B. and Salomon, M. (2006). 'Ein kritischer Blick auf die aktuellen Entwicklungen in der Gemeinsamen Fischereipolitik unter Einbeziehung der neu geschaffenen regionalen Fischereibeiräte'. *Natur und Recht*: 540-541.

94 Markus, T. (2009). *European Fisheries Law – From Promotion to Management*, Chapter 6. Groningen: Europa Law Publishing.

95 See, for example, Council Regulation (EC) 40/08 fixing for 2008 the fishing opportunities and associated conditions for certain fish stocks and groups of fish stocks, applicable in Community waters and, for Community vessels, in waters where catch limitations are required, OJ 2008 No. L19/1.

as well as for stocks exploited by Community vessels on the high seas and in third country waters (where catch limits are required). Around June of each year, the Commission starts to draw up its proposals. The first step of this process involves informal consultations with stakeholders through meetings with regional committees, workshops, and internet communications, as well as formal deliberations in RACs. At the end of October, the Scientific, Technical and Economic Committee for Fisheries (STECF) receives data from different institutions, such as the ICES, international fisheries organizations (IFOs), Member States and third countries.⁹⁶ Based on the STECF recommendations and the information compiled from informal and formal consultations, the Commission prepares a proposal for a regulation. Before sending the proposal to the Council, the Commission sometimes consults its own environmental, social or regional departments. Following this, Council working groups, composed of national officials and experts as well as at least one member of the Commission, examine the proposal and send it to the European Parliament's Committee on Fisheries, Committee for the Regions, and Economic and Social Committee for consultation. After receiving Parliament's comment,⁹⁷ the Council, generally at the end of each year, decides on the TACs for the forthcoming year.⁹⁸ If the Council is not able to agree with the Commission's suggested course of action, it can institute provisional TACs which are applicable only until the Council is able to decide on new TACs.⁹⁹ TAC regulations are sometimes modified over the course of the year.

With regards to the exploitation of fisheries resources on the high seas, TACs are established with reference to the relevant IFOs such as, for example, NEAFC, NAFO or ICCAT, etc.¹⁰⁰ Many IFOs adopt binding TACs and other management measures; however, the Community (as well as the other members of the IFOs) maintain(s) the right to opt out of these decisions within a certain time period.

b. Quotas and quota flexibility

The resources listed in each TAC regulation are divided according to the *principle of relative stability*, according to which each Member State receives a given percentage of the stock in the TAC. A set amount of quota is assigned to specific marine areas in Community waters ('ICES areas'). Fishing up to the quota may only take place in the ICES areas listed in the TAC regulations. Quota is also referred to as 'fishing opportunities', meaning 'a quantified legal entitlement to fish, expressed in terms of catches and/or effort'.¹⁰¹

After having received the annual quota, Member States allocate it to individual fishers. Member States can apply their own methods for distributing TAC quota,¹⁰² deciding, for example, to allocate it to producer organizations or directly to individual fishers.¹⁰³ The grant of quota may be contingent upon the fisher meeting certain licensing requirements. The Netherlands has devised a system of individual tradeable quotas (ITQs), which gives fishermen the choice of either exploiting or trading their specific quotas.¹⁰⁴ Whatever system is adopted, Member States must notify the Commission of their choice.

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- 96 Arrangement in the form of an exchange of letters between the European Economic Community and the International Council for the Exploration of the Sea, OJ 1987 No. L149/14.
- 97 See Article 37(2), paragraph 3 of the Treaty.
- 98 See Article 3(m) of Regulation 2371/02; see Council of the European Union, Press Release 15479/05 (Presse 349), regarding 2702nd Council Meeting, Brussels, 20-22 December 2005.
- 99 Booß, 'Article 37 EGV', in Grabitz and Hilf (ed.), *Das Recht der Europäischen Union*, (München: 2003), pp.19-23; Fischer, *supra*, note 64, pp.4-5; since the CFP has become an exclusive Community competence, disagreements between the Commission and the Council have only arisen on two occasions; see Becker, C. and Spurzem, K.J. (2005). 'Brüsseler Rituale'. *Mare* 51. Available online at: <http://www.mare.de>.
- 100 North East Atlantic Fisheries Commission, Northwest Atlantic Fisheries Organization, International Commission for the Conservation of Atlantic Tunas.
- 101 Articles 3(q) and 20(1) of Regulation 2371/02. The term quota has been defined in Article 3(b) of Council Regulation (EC) 40/08: 'Quota means a proportion of the TAC allocated to the Community, Member States or third countries'.
- 102 Article 20(3) of Regulation 2371/02.
- 103 Churchill, *supra*, note 24, p.118.
- 104 Smit, W. (1997). 'Common Fishery Policy and National Fisheries Management'. *Marine Resource Economics* 12: 355-359. Transferability of and market in fishing rights exist *de facto* in other Member States, too; see Laxe, F.G. (2006). 'Transferability of fishing rights: The Spanish case'. *Marine Policy* 30: 379-388. On the United Kingdom, see OECD. (2006). *Using Market Mechanisms to Manage Fisheries*, pp.279-287. Paris: OECD. See European Commission. Communication from the Commission on rights-based management tools in fisheries, pp.3-4, Com(2007) 73 final.

Greater flexibility in the quota system is built into the system by providing for a quota exchange among Member States.¹⁰⁵ The term *exchange* implies that Member States do not buy and sell quota.¹⁰⁶ Furthermore, under certain circumstances, Member States can carry over unused quota to the forthcoming year.¹⁰⁷

c. Legal commitment to sustainability, precaution and ecosystems

When setting TACs (and other management measures),¹⁰⁸ the Council has to balance conservation and socio-economic considerations. In doing so it must respect the material standard set by Article 2(1) of Regulation 2371/02 which states that the CFP ‘shall ensure exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions’. One interpretation of this article is that economic and social priorities can override environmental ones; and in practice the Council regularly downgrades environmental concerns when adopting TACs. However, it must be noted that the economic and social state of the fishing industry is contingent on the health of fish stocks. Therefore, ‘sustainable economic, social and environmental conditions’ can only be guaranteed where stocks are not exploited at levels which ultimately lead to their collapse.¹⁰⁹ This interpretation of Article 2(1) is supported by Article 3(e) of Regulation 2371/02, which defines ‘sustainable exploitation’ as ‘exploitation of a stock in such a way that the *future exploitation of the stock will not be prejudiced* and that it does not have a negative impact on the marine ecosystem’.¹¹⁰ ‘Sustainable’ in this case means that the exploitation

of stocks at any given time cannot render future takes impossible and cannot negatively impact the marine ecosystem. From this perspective, the Council’s discretion to balance economic, environmental and social objectives must be regarded as limited, preventing it from adopting one-dimensional measures which favour economic interests over conservation objectives and threaten the long-term survival of fish stocks. Fisheries scientists agree that in order to *not prejudice the future exploitation of stocks*, TACs must be set at levels that are within safe biological limits (i.e., catch rates must not exceed the critical point at which stocks are threatened by a substantial decline or collapse, the so-called F_{lim} reference level).¹¹¹ Scientists also agree that exploiting fish stocks *continuously* beyond the MSY (Maximum Sustainable Yield) level will eventually put stocks at this critical reference point.¹¹² As a result, the sustainability criteria in Article 2 of Regulation 2371/02 should be interpreted as requiring the Council to abide by the following minimum management requirements: in principle, catch rates adopted by the Council, and in some cases the Commission, shall not exceed the MSY level. However, where there are compelling socio-economic grounds, Community organs are granted discretion to weigh economic and social objectives higher than environmental factors. In such exceptional cases, the Council or the Commission may set catch rates above MSY levels. Ultimately, however, it must be regarded as a clear violation of Article 2 of Regulation 2371/02 if Council and the Commission grant fishing opportunities which cause stocks to fall below safe biological limits (F_{lim}) or which maintain stocks within these limits.¹¹³

105 Article 20(5) of Regulation 2371/02.

106 Churchill, *supra*, note 24, pp.117-118. These numbers are not published by the Commission, see Proelß, *supra*, note 63, p.382.

107 Article 4 of Council Regulation (EC) No. 847/96 introducing additional conditions for year-to-year management of TACs and quotas, OJ 1996 No. L115/3.

108 The objectives of Article 2 of Regulation 2371/023 apply to all management actions taken under CFP.

109 See Winter, G. (2008). ‘A Fundament and Two Pillars’. In: Bugge, H.C. and Voigt, C. (Eds). *Sustainable Development in International and National Law*, pp.24-45. Groningen: Europa Law Publishing; and also Winter, G. *Towards a legal clinic for fisheries management*, p.38. [Forthcoming]. See also arguments of Markowski, M. *Allocation and management of fisheries resources: an in-depth analysis of instruments in comparative perspective*, p.11. [Forthcoming].

110 Italics have been inserted by the author.

111 Hubold, G. (2003). ‘Wege zu einer Nachhaltigen Fischerei’. *Zeitschrift für Umweltrecht* 14(5): 338-342, pp.338-339; European Commission. Communication from the Commission to the Council and the European Parliament – Application of the precautionary principle and the multi-annual arrangements for setting TACs, pp.4-5, Com(2000) 803 final; see also ICES. (2007). *Report of the ICES Advisory Committee on Fishery Management, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems – Book 1*. Copenhagen: ICES, available online at www.ices.dk. Note that the term ‘safe biological limit’ is defined differently in Article 3(l) of Regulation 2371/02.

112 Kura, Y., Revenga, C., Hoshino, E. and Mock, G. (2004). *Fishing for Answers – Making Sense of the Global Fish Crisis*, p.91. Washington, DC: World Resources Institute; Ludicello, S., Weber, M. and Wieland, R. (1999). *Fish, Markets, and Fishermen – The Economics of Overfishing*, pp.45-47. London: Earthscan.

113 This would be in accordance with the UNCLOS requirements as interpreted by: Rat von Sachverständigen für Umweltfragen (SRU). (2004). *Meeresschutz für Nord- und Ostsee – Sondergutachten*, p.126. Baden-Baden: Nomos.

The meaning of the phrase 'exploitation under sustainable economic, environmental and social conditions' found in Article 2(1), para. 1 is, again, qualified by Article 2(1), para. 2, which states that 'the Community shall apply the precautionary approach in taking measures designed to protect and conserve living aquatic resources [...]'. Article 3(i) of Regulation 2371/02 states:

[The] precautionary approach to fisheries management means that the absence of adequate scientific information should not be used as a reason for postponing or failing to take management measures to conserve target species, associated or dependant species and non-target species and their environment.

As a start, sustainable exploitation requires that fish stocks be maintained *at minimum* within safe biological limits. The precautionary approach should be taken where reliable information on stocks is lacking (i.e., the safe biological limits of stocks are unknown). Therefore, in general, a *safety margin* or *precautionary buffer* that takes into account the unpredictable nature of stock levels and uncertainties in the assessment must be factored into the exploitation rate.¹¹⁴ This applies in particular to underassessed stocks.¹¹⁵ Under the CFP, TACs for such species are based on 'intelligent and educated guesswork'.¹¹⁶ In these cases, safety margins must be particularly large, meaning that exploitation rates may not exceed the limit that scientists consider to be *clearly sufficient* to protect stocks from falling below the F_{lim} level.

Finally, Regulation 2371/02 requires the Community to aim at a progressive implementation of an ecosystem-based approach to fisheries.¹¹⁷ The wording of its provisions, however, do not establish a clear legal obligation. The most important features of ecosystem-based management are listed in several Commission Communications on fisheries management and nature conservation in the marine environment, as well as in the Biodiversity Action Plan.¹¹⁸ In these documents, the Commission lists a number of important measures and objectives such as, *inter alia*, protecting habitats, other species (particularly by reducing bycatch and discards), animals and coastal areas particularly by space-time limitations, etc.¹¹⁹ With regards to quantitative catch limitations, the Commission has recognized the importance of reducing fishing pressure and the need for improved scientific research. Where information is lacking, efforts must be made to improve on current levels of understanding.¹²⁰ The implementation process must be monitored and revised based on a system of indicators.¹²¹

d. Critique and perspectives

There has been much criticism of the use of TACs as the central management instrument in the CFP. In general, using TACs and quotas as management tools is problematic, particularly with respect to the CFP.

Firstly, setting TACs at proper levels is difficult and cost-intensive. Given the general unpredictability of the development of fish populations in combination with uncertainties in scientific data, TACs are based

114 Arguing similarly: Wolff, N. (2002). *Fisheries and the Environment*, p.152. Baden-Baden: Nomos; ICES, *supra*, note 111, p.2. See also Winter, *supra*, note 109, pp.38-39.

115 European Commission, *supra*, note 19, p.5.

116 Karagiannakos, A. (1996) 'Total Allowable Catch (TAC) and quota management system in the European Union'. *Marine Policy* 20: 235-248, p.244.

117 The protection of ecosystems is considered in Articles 2(1), second paragraph, 4(1) and (2)(g)(iv), 5(2), 6(2), 7(1), 8(1) of Regulation 2371/02.

118 European Commission. Communication Com (1999) 363 final on Fisheries Management and Nature Conservation in the Marine Environment; European Commission, *supra*, note 44, pp.11-29; see also European Commission, *supra*, note 45, pp.9 and 22; European Commission. Communication from the Commission to the Council and the European Parliament – final Action Plan to Integrate Environmental Protection Requirements into the Common Fisheries Policy for Fisheries, Com(2002) 186 final.

119 Other measures mentioned are the improvement of the selectivity of gear, developing new technical conservation measures to reduce fishing impact, vocational training, information initiatives and consultation activities, and improving the level of coherence between CFP and environmental measures, European Commission, *supra*, note 45, pp.13-14.

120 Ibid.

121 Ibid., pp.20-21.

on broad assumptions.¹²² According to the Commission,¹²³ in 2007 only 29 of 126 Community TACs were based on 'full assessment and forecast'. In contrast, 62 TACs were based on 'relevant quantitative advice'; and 35 TACs were not based on scientific advice at all.

Secondly, TACs are often considered as unsuitable for application to multi-species fisheries. However, many of the commercially important stocks harvested in Community fisheries are multi-species fisheries.¹²⁴ If fishers exhaust one of their quota, they are often inclined to continue fishing until all of their quotas are exhausted. Given that Community law still requires catches of excess of quotas (or juvenile undersized fish) to be discarded, the species which is part of quota that has been exhausted first is often wasted.¹²⁵ Ultimately, this creates a major problem with regards to the implementation of an ecosystem approach.¹²⁶

Thirdly, as explained above, setting TACs and national quotas does not by itself eliminate the incentive for fisheries to 'race for fish'. Well defined and enforced individual (or collective) quotas are necessary to accomplish this. However, under the CFP, the implementation and enforcement of individual quotas is primarily the responsibility of Member States,¹²⁷ which do not enforce individual fishing quotas in a uniform and strict manner. Against this background, fishers may get the impression that exploiting the quota before the Commission declares it to be exhausted is the right strategy.¹²⁸ Where the race to fish continues, it is likely to cause the oversupply

of fish markets early in the fishing season, with a resulting undersupply later on in the year. Another danger associated with the 'race to fish' is that fishers are driven to fish under all conditions, leading to an increase in accidents.¹²⁹

Another critique of the CFP management system is that despite the sustainability criteria laid down in the basic Regulation, the Council often favours short-term economic gain over long-term conservation (and economic) interests. Council decisions are often politically motivated, as no fisheries minister wants to tell its national electorate that there will be losses due to quota reductions. This is the main reason why the Council regularly sets catch limits at levels higher than recommended by scientists.¹³⁰

The Community should consider ways to reduce the negative factors at work under a TAC and quota system. It will need to improve scientific assessment and strengthen its control and enforcement system. However, a better course of action would be to modify the TAC system itself. To this end, it should *continue* to move away from the setting of annual TACs towards a multi-annual approach with incremental reductions of TACs allowing fishers to plan ahead and adapt their effort.¹³¹ TACs must also consider the multi-species nature of many Community fisheries, for example, by adopting multi-species TACs and banning discards.¹³² The Community may also try to increase the economic efficiency and transparency of the TAC system by allocating clearly defined individual tradable fishing rights to fishers, communities or cooperatives, etc.¹³³

122 Karagiannakos, *supra*, note 116, p.244.

123 European Commission, *supra*, note 19, p.5.

124 Symes, D. (1997). 'The European Community's Fisheries Policy'. *Ocean & Coastal Management* 35: 137-155, p.147.

125 European Commission. Communication from the Commission to the Council – A policy to reduce unwanted bycatches and eliminate discards in European fisheries, Com(2007) 136 final.

126 WWF. (2007). *WWF Mid-term Review of the EU Common Fisheries Policy*, pp.39-41. Brussels: WWF.

127 European Commission. Communication, Report from the Commission to the Council and the European Parliament on the monitoring of the Member States' implementation of the Common Fisheries Policy 2003-2005, Com(2007) 167 final of 10 April 2007.

128 A similar argument was put forward in the following paper: European Commission. (2003). 'A level playing field for better enforcement of CFP rules'. *Fishing in Europe* 19: 3-6.

129 Kura et al., *supra*, note 112, p.91.

130 See, for example, European Commission, *supra*, note 19, p.5; ICES, *supra*, note 19, pp.37-42; European Commission, *supra*, note 11, Vol. 1, pp.6-8; Holden, *supra*, note 52, p.57-60; Karagiannakos, *supra*, note 116, p.244.

131 See critiques on the current practice of the Council with regards to the multi-annual approach paragraph on recovery and management plans below. See also European Commission, *supra*, note 11, Vol. 2, pp.6-8.

132 European Commission. Communication from the Commission to the Council and the European Parliament – On a Community Action Plan to reduce discards of fish, pp.9-10, Com(2002) 656 final.

133 The Commission started an initiative in 2007 on rights-based management, see European Commission, *supra*, note 104, pp.3-4.

Another suggestion would be to shift the power of setting TACs to the Commission or an independent expert agency to depoliticize the process (diagonal competence shift).¹³⁴

1.1.2. Effort limitations

Generally speaking, regulating fishing effort could involve limiting all factors that enable fishing vessels to exploit fisheries resources (input-regulations). Such measures may include the limitation or reduction of the number of fishing vessels, together with decreases in size and engine power, a change of fishing gear, and reduced catching times or areas.¹³⁵ In 2001 the Commission declared that the Community's fleet was much too large with respect to the available resources. Overcapacity had led to overfishing, and neither TACs, fleet reductions nor technical measures were regarded as sufficient to guarantee effective conservation.¹³⁶ To supplement TACs, fleet reduction schemes and technical regulations, the Community adopted a special regime aimed at reducing overall fishing effort.¹³⁷

With the adoption of Basic Regulation 2371/02, the Council opted for a Community-specific definition of fishing effort. Article 3(h) of Regulation 2371/02 and Article 2(b) of Regulation 1954/03 refer to fishing effort as the 'product of the capacity and the activity of a fishing vessel; for a group of vessels it is the sum of the fishing effort of all vessels in the group'. While capacity is expressed in tonnage or engine power, fishing activity is expressed in days spent at sea. This definition does not include input factors like gear, the volume of fish-holds, freezing capacity of vessels or catching areas.¹³⁸

Regulation 1954/03 provided a general system for the management of fishing effort in the Western Waters and Irish Box (ICES areas V, VI, VII, VIII, IX and X, and CECAF division 34.1.1, 34.1.2. and 34.2.0). It required Member States to assess different fisheries in each of these areas between 1998 and 2002.¹³⁹ Then, Member States were called on to ensure that fishing effort – for all vessels 15 m or less in length – was kept at the average fishing effort level which existed during this period.¹⁴⁰ With regards to the catching of demersal species, certain molluscs and crustaceans as well as fishing in the areas around Ireland, the Council has fixed the maximum annual fishing effort for each Member State based on the information provided by Member States.¹⁴¹ The Council sets maximum levels of fishing effort (total allowable effort – TAE) for groups of species, fishing areas and fishery, and by Member State. For example, demersal fisheries carried out by German vessels in ICES area VII are limited to 233,560 (i.e., the product of kw (x) fishing days).¹⁴² Fishing-effort levels may be modified by the Commission upon the request of a Member State where such an adaptation enables them to use up their TACs or continue fishing where there is no TAC.¹⁴³ Further amendments are to be adopted, where the Council adopts recovery plans.¹⁴⁴

For the waters up to 100 nm from the baselines of the Azores, Madeira and the Canary Islands, the Member States in this area may reserve fishing to vessels registered in the ports of these islands.¹⁴⁵

Article 7 requires Member States to establish a list of vessels flying their flag which participate in fisheries

134 Rat von Sachverständigen für Umweltfragen (SRU), *supra*, note 113, p.127; more general, see Winter, *supra*, note 109, pp.39-40.

135 Holden, *supra*, note 52, p.196; Kura et al., *supra*, note 112, pp.90-91.

136 European Commission, *supra*, note 11, vol. I, pp.8-11; vol. II, pp.5-9 and 18-19.

137 The fleet reduction schemes are described in the chapter on promotion.

138 See European Commission. Communication from the Commission to the Council and the European Parliament on improving fishing capacity and effort indicators under the Common Fisheries Policy, Com(2007) 39 final.

139 Articles 3, 4 and 6 of Regulation 1954/03.

140 *Ibid.*, Articles 3(4) and 4(1)-(3); these provisions include detailed exceptions.

141 *Ibid.*, Articles 10 and 11; see Council Regulation (EC) 1415/04 fixing the maximum annual fishing effort for certain fishing areas and fisheries, OJ 2004 No L258/1.

142 Annex I of Council Regulation (EC) 1415/04.

143 Article 12 of Regulation 1954/03.

144 *Ibid.*, Article 3(3).

145 *Ibid.*, Article 5.

mentioned in the effort regulation. They must take the necessary measures to regulate a fishery's effort where it exceeds the total effort allocated to it. This requires that Member States monitor fishing effort.¹⁴⁶ They are also obliged to issue special fishing permits to vessels which engage fisheries mentioned in the effort regulation.¹⁴⁷

However, difficulties with regard to the application of TAEs exist. In general, it is very difficult to establish precisely the fishing effort of a fishing vessel and to convert it to a specific rate of fishing mortality.¹⁴⁸ Moreover, just like TACs, effort limitations rely on expensive biological information on stocks which is difficult and costly to provide. In particular, effort limitations do not solve all problems that arise when the Council limits fishing for individual stocks in mixed fisheries (particularly for demersal).¹⁴⁹ Another problem is that it is difficult to measure engine power,

particularly where engines are already installed; and these figures are easy to manipulate.¹⁵⁰ Moreover, effort limitations (like TACs) are devised using the same deficient political process in the Council. The best thing one may say about the limiting of fishing effort as a management instrument is that, even though effort regulation is susceptible to manipulation, compared to TACs, they are generally perceived to be easier to control and enforce, particularly through the use of satellite monitoring systems.¹⁵¹ However, the Commission stated in 2007 that the control of fishing effort was being implemented only reluctantly by Member States. They do not use their satellite monitoring systems effectively to monitor fishing effort.¹⁵² The Commission concludes that 'there is no evidence that the reduction in fishing effort has compensated for over-capacity in the fleet, even taking into account the effect of decommissioning schemes'.¹⁵³

1.2 Licensing system

Licences have different functions in fisheries management. Firstly, states use them as a regulatory tool, imposing certain legal requirements such as, for example, the payment of royalties or the professional qualification of fishers, etc. By linking these conditions to licences, states can implement different political objectives. Secondly, licences are a useful tool when fishing has to be restricted. For instance, by limiting the number of licences issued, overall fishing effort can be reduced.¹⁵⁴ Thirdly, licences can serve as vehicles for implementing TACs, effort limitations or gear restrictions by requiring their application when handed out to fishermen. Fourthly, licences assist with

monitoring when imposing certain informational requirements on fishers.¹⁵⁵

A comprehensive Community-wide licensing system has never been adopted. Instead, the Community has only required that Member States meet certain minimum requirements.¹⁵⁶

To legally gain access to Community waters, every fishing vessel must hold a licence.¹⁵⁷ Fishing licences must contain certain information about the vessel, the licence holder and other particulars related to fishing capacity such as engine power, tonnage, length and

146 Ibid., Article 8.

147 Article 8(3) refers to Council Regulation Article 2(1)(a) of Regulation 1627/94, see OJ 1994, No. L171/7.

148 Holden, *supra*, note 52, p.196.

149 *Ibid.*, p. 197.

150 Long and Curran, *supra*, note 74, p.178.

151 Holden, *supra*, note 52, p. 198, see also European Commission, *supra*, note 19, p.6.

152 European Commission, *supra*, note 127, pp.9-10; see also European Court of Auditors, Special Report 7/2007 on the control, inspection and sanction system relating to the rules on conservation of Community fisheries resources, OJ 2007 No. C317/1.

153 *Ibid.*

154 Kura et al., *supra*, note 112, p.90.

155 Berg, A. (1999). *Implementing and Enforcing European Fisheries Law*, pp.49–50. The Hague: Kluwer Law International.

156 Council Regulation (EC) 700/06 repealing Regulation (EC) 3690/93 establishing a Community system laying down rules for the minimum information to be contained in fishing licences, OJ 2006 No L122/1; this regulation gives effect to Commission Regulation (EC) 1281/05 on the management of fishing licences and minimal information to be contained therein, OJ 2005 No L203/3; Council Regulation (EC) No 700/2006 of 25 April 2006 repealing Regulation (EC) No 3690/93 establishing a Community system laying down rules for the minimum information to be contained in fishing licences.

157 Article 22(1)(a) of Regulation 2371/02.

gear.¹⁵⁸ Member States are required to update this information on a regular basis and ensure that the information is consistent with what is stated in the Community fishing fleet register.¹⁵⁹ Member States must temporarily suspend the licence of vessels which are subject to temporary immobilization decided by that Member State.¹⁶⁰ Licences must be withdrawn permanently where a vessel is affected by capacity adjustment measures under Article 11 (3) of Regulation 2371/02, i.e., when capacity withdrawals have been

supported by public aid.¹⁶¹

The general licensing system is supplemented by a special licence system. Fishers who want to fish in waters where the effort regimes apply or in third country waters are required to obtain these special licences. For instance, fishing in the Western Waters, the Irish Box or third-country waters requires a special permit.¹⁶²

1.3 Technical measures

Under Community law, technical measures supplement TACs and effort limitations. Technical measures aim at protecting juvenile fish, non-target species, and the marine environment.¹⁶³

Article 4 (2)(g) of Regulation 2371/2002 lists technical measures adopted under the CFP:

- (i) measures regarding the structure of fishing gear, the number and size of fishing gear on board, their methods of use and the composition of catches that may be retained when fishing with such gear;¹⁶⁴
- (ii) zones and/or periods in which fishing activities are prohibited or restricted including for the protection of spawning and nursery areas;
- (iii) minimum size of individuals that may be retained on board and/or landed;

- (iv) specific measures to reduce the impact of fishing activities on marine ecosystems and non-target species.

The Community has adopted different technical measures for different marine areas, e.g., the North Sea and Atlantic,¹⁶⁵ the Mediterranean,¹⁶⁶ the Baltic Sea,¹⁶⁷ and Antarctic waters.¹⁶⁸ General provisions on driftnets are laid down in Regulation (EC) 894/97;¹⁶⁹ and measures adopted under NAFO are included in the annual regulations establishing fishing opportunities. All of these regulations, to a certain extent, make use of the above-mentioned technical measures. Given the fast pace of developments in fisheries management, technical regulations are regularly amended.

The Community's technical measures have been criticized on various grounds. The Commission, for example, indicated in 2001 that technical regulations have become increasingly complex and difficult to

158 Article 5(1) and Annex of Regulation 1281/05.

159 Ibid., Article 5(2)(a) and (3); the Community's fleet register is accessible at: <http://ec.europa.eu/fisheries/fleet/index.cfm>.

160 Ibid., Article 6(1).

161 Ibid., Article 6(2).

162 Council Regulation (EC) 1627/94 laying down general provisions concerning special fishing permits OJ 1994, No. L171/7; Council Regulation (EC) 3317/94 laying down general provisions concerning the authorization of fishing in the waters of a third country under a fisheries agreement, OJ 1994 No L350/13.

163 See, for example, European Commission. Communication from the Commission to the Council and the European Parliament on Implementation of Technical Measures in the Common Fisheries Policy, pp.1-2, Com(95) 669 final.

164 See also Commission Regulation (EC) 129/03 laying down detailed rules for determining the mesh size and thickness of twine of fishing nets, OJ 2003 No. L22/5.

165 Council Regulation (EC) 850/1998 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms, OJ 1998, No. L125/1.

166 Council Regulation (EC) 1967/06 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) 2847/93 and repealing Regulation (EC) 1626/94, OJ 2006 No L409/11.

167 Council Regulation (EC) 2187/05 for the conservation of fishery resources through technical measures in the Baltic Sea, the Belts and the Sound, amending Regulation (EC) 1434/98 and repealing Regulation (EC) 88/1998, OJ 2005 No L349/1.

168 Council Regulation (EC) 60/04 laying down certain technical measures applicable to fishing activities in the area covered by the Convention on the conservation of Antarctic marine living resources, OJ 2004 No L97/1.

169 Council Regulation (EC) 894/97 laying down certain technical measures for the conservation of fisheries resources, OJ 1997 No L132/1.

apply,¹⁷⁰ and that they do not sufficiently address environmental concerns.¹⁷¹ The obligation to return undersized species to the sea in Article 19 of Regulation 850/1998 is particularly problematic.¹⁷² There is also extensive criticism of the rules on mesh sizes which are regarded as not ambitious enough to protect juvenile fish.¹⁷³ Some Member States have also been reluctant to properly implement mesh size regulations.¹⁷⁴ Furthermore, in practice it is difficult for fisheries inspectors to measure the exact size of the mesh. This is due to the fact that the gauges used for measurement of mesh sizes are not very precise control instruments.¹⁷⁵ Fishers may also easily undermine mesh size regulation

by intentionally placing heavy objects in the nets to diminish mesh sizes.¹⁷⁶ Another problem is that, in some cases, fishers are allowed to carry gear on board which they are not allowed to use. According to the conditions set out in the control regulation,¹⁷⁷ this gear must be lashed and stowed.¹⁷⁸ However, given the problems with enforcing the CFP, fishers may be tempted to use that gear.¹⁷⁹ Finally, scientists argue that more no-take zones should be established to protect nursery grounds and sensitive marine areas against fishing activities. Froese and Pauly, for example, have proposed that almost 40% of the North Sea area be closed for fishing.¹⁸⁰

1.4 Recovery and management plans

To improve and accelerate the cumbersome decision-making process within the CFP management system, CFP measures provide for different procedural instruments. Articles 5 and 6 of Regulation 2371/2002 lay down the legal structures for the so-called multi-annual recovery and management plans.¹⁸¹ In addition, according to Articles 7 and 8 of Regulation 2371/2002, under specific conditions the Commission and Member States may adopt emergency measures.

The Commission has promoted the adoption of a multi-annual approach to fisheries management to (a) foster the use of objective criteria in the Council's political processes, (b) improve long-term planning in the commercial sector, and (c) to make it easier to link fleet policies to management schemes.¹⁸²

Recovery plans are adopted if stocks are found to be outside safe biological limits and face collapse. The overall objective of the recovery plans is to ensure the return of fish stocks back to safe biological limits.¹⁸³ The plans are multi-annual and should indicate the expected time frame for reaching the established targets.¹⁸⁴ They must also include *conservation reference points*,¹⁸⁵ defined in Article 3(k) as 'values of fish stock population parameters (such as biomass or fishing mortality rate) used in fisheries management, for example with respect to an acceptable level of biological risk or a desired level of yield'. These reference points serve as the basis for assessing the recovery process. Reference points can relate to targets such as population size, long-term yields, fishing mortality rates, and stability of catches. Recovery plans are to be drawn up

170 European Commission, *supra*, note 11, Vol. 2, p.10.

171 *Ibid.*, Vol. 1, p.23.

172 Ingerowski and Salomon, *supra*, note 93, p.539.

173 Sissiwine, M. (2007). 'Part 1 – Challenges, Performance and the Future'. In: Sissiwine, M. and Symes, D. (Eds). *Reflection on the Common Fisheries Policy – Report to the General Directorate for Fisheries and Maritime Affairs of the European Community*, pp.26-27. Available online at: <http://www.seas-at-risk.org/Images/Midterm%20review%20Sissiwine%20and%20Symes%202007.pdf>; on the history of the setting of mesh sizes and gear measures, see Holden, *supra*, note 53, pp.72–84.

174 Case C-64/88, *Commission v French Republic*, [1991] ECR I2727.

175 Long and Curran, *supra*, note 74, p.170. This has given rise to disputes before the ECJ, see Case C-348/88, *Criminal proceedings against Hakvoort* [1990] ECR I-1647.

176 Long and Curran, *supra*, note 74, pp.165-166.

177 Article 20 of Regulation 2847/93.

178 Article 4(2)(d) of Regulation 850/98.

179 This used to be a serious problem throughout the 1980s and early 1990s, see Holden, *supra*, note 53, pp.72-73; Long and Curran, *supra*, note 74, pp.165-166.

180 Froese, R. and Pauly, D. (2003). 'Dynamik der Überfischung'. In: Lozán, J.L., Rachor, E., Reise, K., Sündermann, J. and von Westernhagen, H. (Eds). *Warnsignale aus Nordsee & Wattenmeer – Eine Aktuelle Umweltbilanz*, pp.288, 294. Hamburg: Parey.

181 Reason (7) of Regulation 2371/2002.

182 European Commission, *supra*, note 112, pp.3, 8-17.

183 Article 5(1) and (2) of Regulation 2371/02.

184 *Ibid.*, Article 5(3), third paragraph.

185 Articles 3 and 5 of Council Regulation (EC) 423/04 refer to conservation reference points as target and minimum levels.

in accordance with the precautionary approach, taking into account the so-called *limit reference points* recommended by the pertinent scientific bodies. Limit reference points are defined in Article 3(j) as 'values of fish stock population parameters (such as biomass or fishing mortality rate), which should be avoided because they are associated with unknown population dynamics, stocks collapse or impaired recruitment'. Targets *may* relate to other living aquatic resources and the maintenance or improvement of the conservation status of marine ecosystems. The plans should emphasize the use of fishing effort as a management tool.¹⁸⁶

Management plans are adopted in cases where the Council considers it *necessary* to maintain stocks within safe biological limits.¹⁸⁷ Accordingly, the main objective of the management plans is to 'maintain stocks within safe biological limits for fisheries exploiting stocks at/ or within safe biological limits'.¹⁸⁸ From a technical point of view, the difference between recovery and management plans is that management plans do not primarily refer to effort limitations as the central instrument to limit fishing activities.

2. Community control and enforcement measures

To be effective, fisheries laws must be properly applied, controlled and enforced.¹⁹¹ The competence in this regard generally lies with the Member States,¹⁹² although the Community is also involved in control and enforcement. In particular, the Community has adopted a comprehensive control regime which requires Member States to undertake certain control actions. In addition, the Community itself controls the

Several points provoke criticism. First, Article 5(3) merely provides that 'recovery plans shall be drawn up on the basis of the precautionary approach to fisheries management and *take account* of the limit reference points recommended by relevant scientific bodies'.¹⁸⁹ Thus, the Council is left with a wide margin of discretion and every recovery plan is still adopted against the background of a struggle in which Member States push for high exploitation rates. Secondly, the Council can increase exploitation rates under recovery plans.¹⁹⁰ Doing that, it must take into account the target levels established in the multi-annual plans. However, whenever the Council decides to change exploitation rates, this can erode the (potential) benefits of using a multi-annual approach. Thirdly, the Council has inserted a loophole into Article 5(4), paragraph 2, which gives it the discretion to reject any effort restrictions which are 'not necessary to achieve the objectives of the plan'. Article 5(4) thus leaves open the possibility that some Member States in the Council will reopen negotiations on effort limitations even if stocks are not within safe biological limits.

application and control and enforcement of CFP rules by Member States. If Member States do not properly apply control and enforce CFP rules, the Commission may initiate infringement procedures before the ECJ, as well as take preventive measures, cut financial aid or, in case of quota-overfishing, reduce Member States' quotas.

186 Article 5(4) of Regulation 2371/02.

187 Currently, management plans for 10 stocks have been adopted or proposed, see WWF, *supra*, note 127, p.25.

188 Article 6(1) of Regulation 2371/02.

189 Italics have been inserted by the author.

190 See, for example Articles 5-7 of Council Regulation (EC) 423/04. According to Article 6(1), the Council is to decide each year the total allowable catches for each cod stock under the recovery plan.

191 See objectives set out in Article 21 of Regulation 2371/02; see also European Commission. Communication from the Commission to the Council and the European Parliament – Towards uniform and effective implementation of the Common Fisheries Policy, Com(2003) 130 final.

192 This Community law principle is reiterated in Article 23(1) of Regulation 2371/02.

2.1 The Community control regime

The first control regulation was adopted in 1982 and consolidated and repealed in 1987.¹⁹³ A new and more comprehensive control regime was adopted in 1993,¹⁹⁴ i.e., Regulation 2847/93 establishing a control system applicable to the Common Fisheries Policy.¹⁹⁵ This Regulation is still in force, and applies to ‘all fishing activities and associated activities’, including the control of management, structural and market measures under the CFP. The regulation applies to Community vessels fishing in the territorial seas and EEZ of all Member States, the high seas and third country waters. With regards to third country waters, the Regulation applies ‘subject to the special provisions contained in fisheries agreements [...] or in international conventions’.¹⁹⁶ It also covers third country vessels fishing in Community waters.

A satellite-based vessel monitoring system (VMS) was introduced in 1998 for a limited number of vessels.¹⁹⁷ Since 2005, all Community fishing vessels exceeding 15 m in overall length, except those used exclusively for aquaculture or inland fisheries, must have a VMS on board when leaving a port.¹⁹⁸

To properly implement the TAC system, the Community has adopted several measures on the monitoring of catches, referred to as Catch Registration System.¹⁹⁹ These measures require detailed documentation of the ‘history’ of catches by

participants of the production process. Masters of vessels are required to keep a logbook,²⁰⁰ landings have to be registered at the place of landing,²⁰¹ buyers and sellers must issue and submit sales notes, transport documents or take over declaration.²⁰² There are also rules on transshipment.²⁰³

Just like the TAC system, the effort regime must be monitored. Effort control requirements vary according to the areas and species of fish targeted. When Community vessels, for example, fish for demersal species in areas in which effort limitations apply (Western Waters, Irish Box),²⁰⁴ the masters of these vessels must compile an ‘effort report’. This report must include information, for example, on the vessel, its location, and on catches. Member States are required to collect and record data on fishing effort deployed by vessels flying its flag.²⁰⁵ To enable the Commission to tell Member States when their quotas are exhausted, Member States provide this information to the Commission regularly and in a timely manner.²⁰⁶

The control regime also provides that Member States are to monitor the fishing activities of their vessels where they fish outside Community waters.²⁰⁷ This provision applies without prejudice to fisheries agreements and international treaties.²⁰⁸

193 Council Regulation (EEC) 2057/82 establishing certain control measures for fishing by vessels of the Member States, OJ 1982 No. L220/1; Council Regulation (EEC) 2241/87 establishing certain control measures for fishing activities, OJ 1987 No L207/1.

194 Long and Curran, *supra*, note 74, p.79.

195 OJ 1993, No. L261/1.

196 Article 1(3) of Regulation 2847/93.

197 By Council Regulation (EC) 686/97 amending Regulation 2847/93 establishing a control system applicable to the Common Fisheries Policy, OJ 1997 No. L 102/1.

198 Article 22(1)(b) of Regulations 2371/02 and Articles 2 and 4 of Commission Regulation (EC) 2244/03 laying down detailed provisions regarding satellite-based Vessel Monitoring Systems, OJ 2003 No. L230/17.

199 Long and Curran, *supra*, note 74, p.117.

200 See also Commission Regulation (EEC) 2807/83 laying down detailed rules for recording on Member States’ catches of fish, OJ 1983 No L276/1 as amended by Commission Regulation (EC) 1804/2005, OJ 2005 No. L290/10.

201 Article 8 of Regulation 2847/93; Long and Curran, *supra*, note 75, p.122.

202 *Ibid.*, Articles 9 and 13.

203 *Ibid.*, Article 11.

204 Special effort control provisions for the Baltic can be found in Council Regulation (EC) 1098/07 establishing a multi-annual plan for the cod stocks in the Baltic Sea and the fisheries exploiting those stocks, amending Regulation (EEC) 2847/93 and repealing Regulation (EC) 779/97, OJ 2007 No 248/1.

205 Articles 19f,g,h of Regulation 2847/93.

206 *Ibid.*, Article 19i.

207 *Ibid.*, Article 17(1).

208 *Ibid.*, Article 17(3).

Member States are also authorized to control vessels flying their flags in all Community waters.²⁰⁹ They are entitled to inspect fishing vessels flying the flag of other Member States in international waters.²¹⁰ Finally, Member States can be authorized by other Member States or the Community to carry out inspections in their waters.²¹¹

The regime also provides monitoring requirements for third country vessels fishing in Community waters. They in particular must obtain a fishing licence and a special fishing permit and abide by specific identification and reporting obligations.²¹² The Commission, in cooperation with the Member States, is responsible for controlling the activities of vessels from third countries fishing in Community waters.²¹³

The control regime also lays down control requirements relating to technical measures. For example, catches that are retained on board must comply with the species compositions set out in the technical regulations.²¹⁴ Nets on board must be stowed in accordance with the specific conditions. Net changes and species compositions at the moment of that change must be entered into the logbooks and landing declarations.²¹⁵

The implementation of structural measures is also subject to monitoring rules. Control measures primarily

aim at providing a clear picture of the status and the development of the fleet and the aquaculture sector, particularly with a view to sector adjustments. In order to ensure compliance with the Community fleet adjustment objectives, each Member State must organize regular checks of all persons concerned by the implementation of structural measures.²¹⁶ In practice, control measures carried out by Member States may involve paper checks or actual physical control (e.g., the assessment of tonnage, length and engine power measurements, etc.).

Just like structural measures, the monitoring of market-related provisions is also provided under the control regulation. Each Member State is required to organize on its own territory regular checks of all persons involved in the application of the measures.²¹⁷ Member States are to carry out comparisons between the documents relating to the first placing on the market of the quantities referred to in sales notes and landing declarations, particularly as regards their weight.²¹⁸ Where minimum sizes have been fixed for a certain species, operators responsible for the selling, stocking or transporting of batches of products of that species smaller than the minimum size must be able to prove their geographical area of origin or the provenance from aquaculture of the products at all time.²¹⁹

2.2 Community control over Member States

A uniform and coherent application of the Community fisheries regime is a prerequisite for effective fisheries management. Management rules must be applied and enforced in all Member States to ensure that no

European fisher has an advantage over another. However, *the power to implement, control and enforce Community fisheries law lies primarily with the Member States.*²²⁰ Throughout the history of the CFP, Member

209 Article 28(3), para. 1 of Regulation 2371/02.

210 Ibid., Article 28(3), para. 3; Commission Regulation (EC) 1042/06 laying down detailed rules for the implementation of Article 28(3) and (4) of Council Regulation 2371/02 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy, OJ 2006 No. L187/14.

211 Article 28(3), para. 2 of Regulation 2371/02.

212 Article 28b and 28c of Regulation 2847/93. See also Article 9 of Regulation 1627/94.

213 Article 26(5) of Regulation 2371/02.

214 See Article 20(1) of Regulation 2847/93 still referring to Council Regulation (EEC) 3094/86. The latter has been replaced by Regulation (EC) 894/97 and provisions in Council Regulation (EC) 850/1998; Council Regulation (EC) 1967/06; Council Regulation (EC) 60/04.

215 Article 20(2) of Regulation 2847/93.

216 Ibid., Article 24 still refers to the objectives set out under Article 11 of Regulation 3760/92 (the former basic regulation).

217 See Article 28(1) of Regulation 2847/93, still referring to Regulation 3759/92 which has been replaced by Regulation 104/00 on the common organization of the markets in fishery and aquaculture products, OJ 2000 No. L17/2.

218 Article 28(2) of Regulation 2847/93.

219 Ibid., Article 28(2a).

220 See also Article 23(1) of Regulation 2371/2002.

*States have often shown themselves to be unable or unwilling to fulfil these obligations.*²²¹ Against this background, the Community has developed a particular interest in monitoring Member States' control and enforcement practices. Thus, while it is the role of the Member States to apply, control and enforce fisheries rules, the Community monitors the effectiveness of the Member States in carrying out its duties ('dual vigilance').²²² The Community's competent organ in this respect is the Commission.²²³

The Commission's control competences include, *inter alia*, the power to initiate and carry out audits, inquiries, verifications and inspections concerning the application of the rules. Besides, Member States also have to fulfil reporting duties. The Commission particularly gathers information to evaluate the 'national quota uptake'.²²⁴ There is also a group of Community inspectors nominated by the Member States.²²⁵ In April 2005, the Council established the Community Fisheries Control Agency by Regulation 768/05 which operates out of Spain.²²⁶ The main objective of the Agency is to 'organize operational coordination of fisheries control and inspection activities by Member States and to assist them to cooperate so as to comply with the rules of the Common Fisheries Policy in order to ensure its effective uniform application'.²²⁷

The Community has also adopted rules on enforcement. Where CFP rules have been infringed,

Member States are required to take appropriate measures to effectively deprive the violators of the economic benefits gained from the infringement and discourage further offences.²²⁸ However, Member States are basically free to choose their own means to accomplish this objective. They may, for example, choose to impose administrative or criminal laws, and also determine how stringent sanctions should be.²²⁹

Finally, the Community may also impose sanctions. Articles 16(1), 23(4) and 26(3) of Regulation 2371/02 allow the Commission to penalize certain types of bad conduct, laying down the conditions under which the Commission can reduce the future fishing opportunities of a Member State, take preventive action, and suspend financial assistance. It may also choose to formally initiate infringement procedures before the ECJ under the conditions provided in Article 226 and 228 of the Treaty.²³⁰ In 2005, the ECJ decided a groundbreaking case. The Court found in 1991 that France had failed to enforce Community technical measures for the conservation of fish resources.²³¹ Subsequently, the Commission claimed that France had not complied with this judgment and referred this matter, again, to ECJ.²³² As a result, the Court ordered France to pay the Commission a lump sum of € 20,000,000, as well as an additional penalty payment of €57,761,250 for each six-month period from the delivery of the 2005 judgement on, at the end of which France has failed to comply.

221 European Commission. Report 1991 from the Commission to the Council and the European Parliament on the Common Fisheries Policy. SEC(1991) 2288 final, 18 December 1991; European Commission, *supra*, note 128.

222 Long and Curran, *supra*, note 74, p.62.

223 Article 26(1) of Regulation 2371/02.

224 See Article 15 of Regulation 2847/93.

225 Article 5(2) of Regulation 1042/06.

226 Council Regulation (EC) No. 768/2005 establishing a Community Fisheries Control agency and amending Regulation (EEC) No. 2847/93 establishing a control system applicable to the Common Fisheries Policy, OJ 2005 No. L128/1.

227 Article 1 of Regulation 768/05.

228 Article 25(1) of Regulation 2371/02. In general, see also Case 68/88, *Commission v. Greece* [1989] ECR 2965, paras. 24 and 25.

229 Article 25(1) of Regulation 2371/02.

230 Articles 226 and 228 of the Treaty. The action under Article 226 is 'objective in nature' as well as for the purpose of 'obtaining a declaration that a specific conduct of a Member State infringes Community law as well as to terminate that infringement', see Case 7/68, *Commission v. Italy* [1968] ECR 423, at 428; Cases 15 and 16/76, *France v. Commission* [1979] ECR 321, para. 27.

231 Case 64/88, *Commission v. France* [1991] REC I-2727.

232 Case 304/02 *Commission v. French Republic* [2005] ECR I-6263.

2.3 Implementation deficits

Despite the Community's continued efforts to overhaul and tighten its control and enforcement regime, implementation deficits have continued to exist throughout the entire history of the CFP. Non-compliances result both from fishermen's infringements of quantitative or technical conservation measures and Member States ineffective application of control and enforcement measures.²³³ Current evaluations of the implementation of CFP rules basically highlight the same implementation deficits that were targeted twenty years ago.²³⁴ Criticisms mainly concern the following issues: firstly, in many cases, Member States do not interpret and apply CFP rules in a uniform manner. One of the many examples: currently the concepts of

what is to be regarded as an 'inspection' vary throughout the Community.²³⁵ Secondly, Member States application of control and enforcement measures is often of poor quality. Thirdly, national sanctions may differ enormously from each other and in many cases are not a strong enough deterrent. Finally, in spite of some positive developments, coordination between Member States is generally regarded to be weak. Overall, the will of Member States to consistently and fully implement CFP conservation measures in many cases appears to be missing. Against this background, the Commission currently revises the entire CFP control system.²³⁶

IV. Community instruments promoting fisheries

The following chapter will describe the promotion of fisheries under the CFP. The promotional regime will

be explained by giving an overview of historical and current measures and sources of subsidies.

1. Sources of subsidies to the Community's fisheries sector

Financial aid to the Community's fisheries sector flows from two main sources: the Community and the Member States. Community support is granted primarily under the CFP's structural policy. Major contributions are also provided through fisheries access agreements. Comparatively small amounts have been allocated under the CFP's market organization, the European Regional Fund, the European Agriculture Guidance and Guarantee Fund, and the European

Social Fund. The Member States also provide large amounts of subsidies, mainly by co-financing Community measures, providing expensive general services (which they mostly do not recover from the fisheries sector), and through the grant of additional state aid. The author will focus here on subsidies granted under the Community's structural policy and its common market organization in fisheries products.²³⁷

2. Promotional measures within the Community's structural policies

Structural policies concern the production side. This includes all equipment required to catch and process fisheries goods.²³⁸ In the past, promotion in this sector has aimed at building up or modernizing the catching

and the processing industries. Today, management, environmental and social objectives increasingly play an important role.

233 See also Case 290/87, *Commission v. Netherlands* [1989] ECR 3083; Case 64/88, *Commission v. France* [1991] ECR I-2727; 244/89, *Commission v. France* [1991] I-163; Case 258/89, *Commission v. Spain* [1991] ECR I-3977; *Commission v. France*; Case 52/95 *Commission v. France*, para. 38.

234 European Commission, *supra*, note 127; Court of Auditors, *supra*, note 153.

235 *Ibid.*, p.8.

236 See Commission Communication COM(2008) 721 final, Proposal for an Council Regulation establishing a Community system for ensuring compliance with rules of the Common Fisheries Policy.

237 Other sources are explained by the author in Markus, T. (2009). *European Fisheries Law: From Promotion to Management*. Groningen: Europa Law Publishing.

238 Churchill refers to the object of the structural policies simply as the 'catching side of the industry'; see Churchill, *supra*, note 24, p.203.

2.1 Administrative aspect of the CFP's structural policy

To understand how the CFP's structural policy works, it is important to understand two pertinent features of the system: co-financing and the administration of the Community aid.

2.1.1. The co-financing system

In principle, the CFP's structural policy aims at providing a uniform and centralized allocation of financial aid to the fisheries sector. Structural measures set down the conditions under which aid can be requested by the fisheries sector for specific purposes. This does not imply that the Community provides all the funding. Since the early days of the CFP's structural policy, the availability of Community subsidies has been dependent on contributions of Member States and beneficiaries ('principle of joint funding/co-financing').²³⁹ The following example will help to illustrate this point:

Under the former structural measure, the Financial Instrument for Fisheries Guidance (FIFG), fishers were eligible for public aid for the construction of vessels.²⁴⁰ If a fisher intended to build a vessel in the fleet segment '0-10 GT', support was granted under the following conditions: firstly, an overall investment sum was determined. For example, for values between 0 and 10 GT, the investment sum was € 22,000 per GT + € 4,000.²⁴¹ This means that if a fisher wanted to build a vessel of 10 GT, the overall investment sum was € 260,000. The FIFG regulation required that the Community contribute 15% of this amount if at least 5% was provided by the Member State, and at least 60% by the beneficiary.²⁴²

This approach has two important consequences. Firstly, any public aid granted by the Community is,

in most cases, increased substantially by the contributions of the Member States. Secondly, participation rates determine significantly the attractiveness of private investments. While large contributions from the Community and Member States make investments attractive, high beneficiary participation rates have the opposite effect. Altering the participation rates is an important instrument for steering investments to specific parts of the sector and the fleet.

2.1.2. The administration of CFP structural aid

Throughout the history of the CFP, the competence to decide on the amount and the available forms of assistance has increasingly shifted towards the Community. In 1993, however, it was made clear that Member States were primarily responsible for implementing Community structural measures and determining how aid was actually to be used.²⁴³ From this point onward, Community law referred to the principle of 'shared responsibility'.

Under the current European Fisheries Fund (EFF) system, Member States submit to the Commission a *national strategic* plan for their fisheries industry. These plans have served as the basis for dialogue between the Commission and Member States with regard to structural support schemes for the period 2007-2013.²⁴⁴ Member States are to consult with relevant stakeholders when drawing up their plans. The plans should set out national priorities, objectives, estimates of financial resources required, and timelines for putting measures into effect.²⁴⁵ Member States are required to draw up an *operational programme* for implementing the policies that will be co-financed by the EFF. The programme has to be in line with the

239 European Court of Auditors. Special Report No. 3/93 concerning the implementation of the measures for the restructuring, modernization and adaptation of the capacities of fishing fleets in the Community together with Commission's replies ('Court of Auditors Report – 1993'), OJ 1994 No C2/1, para. 1.29.

240 See Article 9 of Regulation 2792/99.

241 Ibid., see Article 9(4) in combination with Annex IV; note that Article 9(4)(a) says that aid for the construction of vessels may not exceed *twice the scales in Table 1 of Annex IV*.

242 Ibid., see Table 3 of Annex IV.

243 Reason 6 of Regulation 2082/93. Prior to 1993, in many cases, the Commission itself decided on individual aid applications, see, for example, Case 514/93, Cobrecaf and other v. Commission, [1995] ECR, II-621.

244 Article 15(1) of Regulation 1198/06.

245 Ibid., Article 15(2).

national strategic plan objectives and include, *inter alia*, tables which detail the financial contributions of the EFF and the Member States and where they will be allocated.

The Commission then evaluates, e.g., whether the programmes contribute to EFF objectives²⁴⁶ and the guiding principles for the operational programmes laid down in Article 19 of Regulation 1198/06, and whether they take into account the national strategic plans. If, in its opinion, the programme is incongruent with CFP and EFF rules, it will ask the Member State to amend its programme accordingly. If the proposal is approved, the Commission will adopt an approving decision.²⁴⁷

Thus, the EFF leaves Member States a substantial margin of discretion as to how funds are actually allocated. For example, Germany's current (approved)

operational programme states that about € 12 million of EFF and national contributions will be set aside for the adaptation of its fleet.²⁴⁸ This money is designated for modernizing approximately 300 vessels.²⁴⁹ When granting aid, Germany must follow the strict conditions (e.g., participation rates and the capacity ceilings) laid down in the EFF regulation.

In the aid distribution process, Member States designate a managing and a certifying authority.²⁵⁰ Aid applicants turn to the managing authority, which decides whether the aid is granted or not and monitors the use of the funds. The certifying authority then draws up and submits applications for payment to the Commission. When the Commission accepts the application, the certifying authority receives the EFF funds from the Commission and hands them over to the applicant.²⁵¹

2.2 Promotion from 1970–2007

The following section will describe the promotional activities under the CFP from 1970–2007.

From 1970–1982,²⁵² the CFP's prevailing goal was to increase production to guarantee Europe's food supplies. This motivation arose from an acute awareness of the suffering experienced by Europeans as a result of starvation during and after World War II.²⁵³ Public funding, basically aimed at expanding the capture fisheries and aquaculture sectors. From 1980, due to a largely overcapitalized long-distance water fleet, the Community also began to 'externalize' its overcapacity problem by financing the conclusion of third-country access agreements with the Faeroe Islands, Norway, Senegal and Guinea Bissau.²⁵⁴

From 1983–1986, the Community continued existing promotional schemes and also introduced new types of subsidies. It promoted access to the fishing grounds of Guinea, Equatorial Guinea, Sao Tomé and Principe, and Madagascar,²⁵⁵ the exploitation of under- or unexploited fish species, and the temporary lay-up of vessels. It introduced support for marketing fisheries products and assistance for exploratory expeditions and joint ventures. Special financial grants were made available to poorer regions on the Mediterranean coasts for building up production capacities. Some financial assistance was granted for the protection of coastal areas and for the biological protection of marine areas and the creation of marine parks.²⁵⁶

246 Ibid., Article 4.

247 Ibid., Article 17(6).

248 See German Operational Programme, available online at the homepage of the DG Fisheries, pp.72, 80 and 120.

249 Ibid., p.81.

250 Articles 59 and 60 of Regulation 1198/06. Member States also install an audit authority reviewing the management and control of the operational programme, see Article 61 of Regulation 1198/06.

251 A different procedure applies under the market organization, see below.

252 Information for the time prior to this phase, see Song, Y.-H. (1995). 'The EC's Common Fisheries Policy in the 1990s'. *Ocean Development and International Law* 26: 31–55, pp.36–37; Holden, *supra*, note 52, pp.17–18. See also the 'first' proposal of the Commission for a CFP, i.e. 'Report on the Situation in the Fisheries Sector of the EEC Member States and the Basic Principles for a Common Policy', (67/196/EEC), OJ 1967, p.862.

253 M. Holden, *supra*, note 52, pp.21 and 39 *et seq.*

254 OJ 1980 No. L226/12; OJ 1980 No. L 226/47; OJ 1980 No. L226/16; OJ 1980 No. L226/33.

255 OJ 1983 No. L111/2; OJ 1984 No. L 188/2; OJ 1984 No. L54/2; OJ 1986 No. L73/26.

256 Regulation 2908/83, OJ 1983 No. L290/1 and OJ 1985 No. L197/1.

From 1987-1993, promotion schemes were altered to reduce the total production capacities. A capacity reduction programme, i.e., the second Multi-annual Guidance Programme (MAGP), aimed at reducing the fleet by 2% in terms of tonnage and 3% for engine power. On the other hand, the total amount of aid for the renewal and modernization of vessels was raised substantially, and included the financing of construction and modernization projects in Spain and Portugal. Furthermore, particularly to serve the Spanish and Portuguese fleets, the Community took over Spanish and Portuguese access agreements with third countries.²⁵⁷ In addition, support for processing and marketing as well as investments in fishing ports was bolstered.²⁵⁸ Overall, aid granted for purposes that negatively impacted fish stocks, still exceeded those amounts earmarked for conservation purposes.²⁵⁹

From 1994-1999, administrative structures and spending schemes were marginally improved. The Community increased its efforts to reduce fishing pressure under MAGP III and MAGP IV, setting more ambitious goals for the reduction of fishing effort. Accordingly, aid for the adjustment of the fleet was raised. Grants were provided for permanent reductions – scrapping vessels, the permanent re-assignment of vessels for other non-fishing purposes, and permanent transfer to third countries. The Community also became increasingly aware of the need to offset the social consequences of the restructuring process. Assistance was made available, for example, for early retirement schemes or compensatory payments to fishers who withdrew from fishing permanently. With regards to the construction and modernization of the fleet, the Community began channelling its financial assistance to different fleet segments, reducing support for the powerful large-scale vessels, in particular. A

special programme called the PESCA Programme was established, aimed at promoting the transformation, diversification and the redeployment of the sector's work force and also providing funds for coastal regions affected by the continuing decline of the fisheries.

From 2000-2006, substantive changes were introduced into the promotional regime. Aid was now particularly allocated to fishers affected by conservation management and structural measures, such as recovery plans and fleet reductions. There was also a push to phase out subsidies that were most harmful to natural resources. Throughout the reform process, the Community has tried to establish a system which better links investments in capacity to fishing effort limitations, i.e., the complex system of MAGPs, fleet segmentations and reduction targets were abolished in 2002, and replaced by a simpler entry-exit regime. Additionally, environmentally friendly fishing methods have been increasingly promoted. Premiums for the permanent transfer of vessels to third countries were phased out in 2004. However, not all harmful subsidies were eliminated. For example, from 2000-2006, the processing and marketing sector received € 634 million of aid, while € 248.8 million were granted to build facilities at fishing ports. In fact, even where subsidies for the modernization of vessels do not lead to an increase in fishing power, they do create incentives for fishers to remain in an overcapitalized industry, and even though aid for fleet renewal and modernization ended in 2004, the total amount paid in the fifth phase still added up to € 855.5 million.

Since the beginning of 2007, the EFF²⁶⁰ has replaced the FIFG and is attempting to implement the 2002 reforms²⁶¹ and bring about substantial changes in promotional policies.

257 USA, Seychelles, Mozambique, Gambia, Angola, Dominican Republic, Comoros, Mauritius, Sierra Leone, Cap Verde, Ivory Coast and Tanzania, see OJ 1984 No. L272/1; OJ 1987 No. L160/1; OJ 1987 No. L201/1; OJ 1987 No. L146/1; OJ 1987 No. L341/1; OJ 1993 No. L299/1; OJ 1988 No. L137/24; OJ 1989 No. L159/1; OJ 1990 No. L125/27; OJ 1990 No. 212/1; OJ 1990 No. L379/1; OJ 1990 No. L379/24.

258 Regarding the processing and marketing segments, new measures had been introduced in 1989; Regulation 355/77 had been replaced by Regulation 4042/89 on the improvement of the conditions under which fisheries and aquaculture products are processed and marketed, OJ 1989 No. L388/1.

259 See Table 3 a. See also, Report 1991, p.29.

260 Regulation 1198/2006, OJ 2006 No. L223/1.

261 See Reason (1) and Article 6 of Regulation 1198/06.

2.3 The European Fisheries Fund

In June 2006, the Council adopted a new core Regulation to govern the structural aspects of the CFP, entitled Council Regulation (EC) 1198/06 on the European Fisheries Fund (Regulation 1198/06).²⁶² The Regulation is expected to be in force from 1 January 2007-31 December 2013.²⁶³

2.3.1. Priority Axes

Projects eligible for assistance under the EFF are categorized under so-called 'priority axes'. A priority axis is 'one of the priorities in an operational programme comprising a group of measures which are related and have specific measurable goals'.²⁶⁴ Axes are listed as follows:

- Priority Axis 1: Measures for the adaptation of the Community fishing fleet
- Priority Axis 2: Aquaculture, inland fishing, processing and marketing of fishery and aquaculture products
- Priority Axis 3: Measures of common interest
- Priority Axis 4: Sustainable development of fisheries areas
- Priority Axis 5: Technical assistance

2.3.2. National Strategic Plans and National Programmes

Article 15(1) of Regulation 1198/06 requires each Member State to adopt and submit to the Commission, following an appropriate consultation with stakeholders, a national strategic plan on its national fisheries industry. As stated above, these plans serve as the basis for dialogue between the Commission and Member States with regard to structural support schemes over the period 2007-2013. They contain a

description of the national sectors, and set out national priorities, objectives, estimated financial resources required, and implementation deadlines.²⁶⁵

According to Article 17(1) and (2), each Member State must also draw up an operational programme to implement the policies and priorities to be co-financed by the EFF. The programme must be in line with national strategic plan objectives. Member States are required to involve regional, local, economic and social partners in the fisheries sector as well as all other appropriate bodies in the development of the national plan.

The Commission evaluates whether the programmes are in line with the EFF objectives laid out in Article 4, obey the guiding principles for the operational programmes in Article 19, and take into account the national strategic plans. Article 4 basically states that the EFF must support the CFP so as to ensure sustainable exploitation of marine capture, aquaculture and inland resources as well as protect the marine environment. Article 19 requires that the preparation and the implementation of the operational programme by Member States shall take into account a variety of guiding principles such as, for example, consistency with the principles of the CFP, etc.

2.3.3. Priority Axis 1: Measures for the adaptation of the Community fishing fleet

To achieve a stable and enduring balance between fishing capacities and fishing opportunities, Member States must establish a policy for adjusting fishing effort within so-called 'fishing effort adjustment plans'.²⁶⁶ These plans are integrated into the national strategic plans, and may refer to all promotional measures listed in Article 21. As a result, public aid may be provided for owners of fishing vessels and fishers affected by: recovery plans; emergency measures; the non-renewal of fisheries agreements; management plans; Member

²⁶² OJ 2006 No. L223/1.

²⁶³ See also Commission Regulation (EC) 498/2007 laying down detailed rules for the implementation for Council Regulation (EC) 1198/06 on the European Fisheries Fund, OJ 2007 No. L120/1.

²⁶⁴ Article 3(i) of Regulation 1198/06.

²⁶⁵ Ibid., Article 15(2).

²⁶⁶ Ibid., Article 22.

States' measures requiring higher environmental protection standards within their 12 nm zone; national decommissioning schemes; and the temporary cessation of fishing. Member States must give priority to those industry members affected by recovery plans under Article 5 of Regulation 2371/02.²⁶⁷

The EFF contributes to financing the permanent cessation of fishing activities where this is achieved by the scrapping of vessels, reassignment of vessels for non-fishing activities, and use for the creation of artificial reefs.

The EFF will finance aid measures for the temporary cessation of fishing activities. Aid is provided for fishers who are affected by management measures that stall fishing activities.²⁶⁸ Aid may also be granted for three months to firms facing economic difficulties during the period of replacement of engines.²⁶⁹ Finally, aid may be provided for up to six months in the event of natural disasters or where fisheries are closed by Member States for reasons of public health or exceptional occurrences.²⁷⁰

According to Article 25(1), the EFF may contribute to the financing of equipment and the modernization of vessels that are five or more years old. Investments may concern the improvement of safety on board, working conditions, hygiene, product quality, energy efficiency and selectivity. Aid is granted subject to the condition that the ability of vessels to catch fish is not increased, particularly not above levels provided in Article 12 of Regulation 2371/02. No aid will be granted for the construction of new fishing vessels or for the increase of fish-holds.²⁷¹

The EFF may contribute to financing the replacement of one engine per vessel, subject to the following scheme:²⁷²

- Vessels less than 12 m in overall length which do not use towed gear²⁷³ may receive aid, provided

that the new engine has the same power as the old one or less.

- Vessels 12-24 m in overall length may receive aid, provided that the new engine has at least 20% less power than the old one.
- Trawlers of more than 24 metres in overall length may receive aid, provided that the new engine has at least 20% less power than the old one, and that the vessel is subject to a rescue and restructuring plan for firms in difficulty, and uses less fuel-intensive fishing methods.

Secondly, according to Article 26(6), the EFF may finance equipment and modernization works which allow keeping catches on board which may no longer be discarded, cover the preparation or trial of new technical measure, reduce the impact of fishing on non-commercial species, reduce the impact on ecosystems and the sea bottom, and protect catches and gear from wild predators.

Thirdly, the EFF may support investments to achieve the selectivity of fishing gear, including up to two replacements between 2007-2013, provided that the vessel concerned is affected by a fishing effort adjustment plan, changes its fishing method and is leaving the fishery concerned to go to another fishery, or the new gear meets recognized environmental criteria and practices which go beyond the existing regulatory obligations under Community law.

The EFF increasingly promotes small-scale coastal fisheries by modifying existing promotional measures of general applicability and participation rates to benefit small-scale coastal fisheries. Article 26(1) defines small-scale coastal fishing as 'fishing carried out by fishing vessels of an overall length of less than 12 metres and not using towed gear [...]'.²⁷⁴ Article 26(2) sets out special participation rates for this sector, stating that where the EFF provides financial aid for investments

267 Ibid., Article 22(1).

268 Ibid., Article 24.

269 Ibid., Article 24(1)(vi) and Article 21(f).

270 Ibid., Article 24(1)(vii).

271 Ibid., Article 25(2).

272 Ibid., Article 25(3).

273 As defined in Table 3 of Annex I of Commission Regulation 26/2004 regarding the fishing vessels register of the Community, OJ 2004 No L5/25.

on-board fishing vessels and selectivity under Article 25, private participation rates may be reduced by 20%. Article 26(3) allows the EFF to finance socio-economic measures established in Article 27 to benefit small-scale coastal fishers. According to Article 26(4), the EFF may contribute to the payment of premiums for fishers and owners of fishing vessels involved in small-scale coastal fishing in order to:

- Improve management and control of access conditions to certain areas;
- Promote the organization of the production, processing and marketing chain of fisheries products;
- Encourage voluntary steps to reduce fishing effort for the conservation of resources;
- Encourage the use of technological innovations [...] that do not increase fishing effort; [and]
- Improve professional skills and safety training.

According to Article 27, the EFF may contribute to the financing of socio-economic measures, including economic diversification, the upgrading of professional skills in particular for young fishers, retraining in occupations outside sea fishing, early departure and retirement, and non-renewable compensation to fishers who have worked on a vessel for at least 12 months which is the object of permanent cessation.

2.3.4. Priority Axis 2: Aquaculture, inland fishing, processing and marketing of fishery and aquaculture products

The EFF also intervenes in the aquaculture and inland fishing sector, providing support for aqua-environmental, public health and animal health measures as well as productive investment.²⁷⁵ Member

States are also required to avoid counterproductive effects such as surplus production capacity, which adversely affects CFP conservation policy.²⁷⁶ EFF initiatives are also linked to environmental Community measures. Projects falling under Annex II of Council Directive (EEC) 337/85 on the assessment of the effects of certain public and private projects on the environment²⁷⁷ will only be supported where the information required in Annex IV of that Directive has been provided.²⁷⁸

2.3.5. Priority Axis 3: Measures of common interest

EFF provisions allow for the support of measures of common interest, described as measures having a 'broader scope than measures normally undertaken by private enterprises and which help to meet the objectives of the CFP'.²⁷⁹ Measures of common interest concern collective actions, protection and development of aquatic fauna and flora, fishing ports, landing sites and shelters, development of new markets and promotional campaigns, pilot projects and modifications for reassignment of fishing vessels.

2.3.6. Priority Axis 4: Sustainable development of fisheries areas

Due to reduced catches, the Community has attempted to reduce the economic dependence of coastal fishing areas on catching activities. To this end, support is granted to measures which accomplish the following:

- Maintain the economic and social prosperity in these areas and add value to fisheries and aquaculture products;
- Support diversification or the economic and social restructuring of areas facing socio-economic difficulties as a result of changes in the fisheries sector;

274 Not using towed gear as listed in Table 3 of Annex I of Commission Regulation 26/2004 regarding the fishing vessels register of the Community, OJ 2004 No L5/25.

275 Article 28 of Regulation 1198/06.

276 Ibid., Article 2(5).

277 OJ 1985 No. L175/40.

278 Article 28(6) of Regulation 1198/06.

279 Ibid., Article 36.

- Promote the quality of the coastal environment; and
- Promote national and trans-national cooperation between fisheries areas.

Areas eligible for aid must have a sea or lake shore, and include ponds or river estuaries.²⁸⁰ Assistance should target regions with a low population density, fishing areas in decline, or small fishing communities.²⁸¹

An important innovation is the implementation of support measures by local entities (the groups) representing local public and private partners from the various local relevant socio-economic sectors.²⁸² A group proposes and implements an integrated local development strategy based on a bottom-up approach in agreement with the relevant management authority.²⁸³ According to Article 45(4), the group itself determines how operations under the local

development strategy are to be conducted and correspond to measures in Article 44. It also requires that the greater part of the operations be led by the private sector. Territories covered by one group should be coherent and have sufficient critical mass in terms of human, financial and economic resources to support a viable local development strategy.²⁸⁴

2.3.7. Priority Axis 5: Technical assistance

Under the EFF regime, the Commission and the Member States can propose that aid for technical assistance to further the implementation of the EFF can be provided. On the initiative of the Commission and subject to a 0.8% ceiling of its annual allocation, the EFF may finance measures such as evaluations, expert reports, measures to disseminate information, and the installation of computerized systems for management, monitoring, inspection and evaluation.

3. Instruments promoting fisheries in the market organization

As explained above, the CFP is concerned with the organization of a common market in fisheries products. Promotional interventions under the market organization, however, only constitute a minor fraction of structural interventions (see Table 1). The market policy's objectives are: stabilizing the markets, guaranteeing and widening supplies as well as increasing the profitability of production.²⁸⁵ Currently, the market organization regime is laid down in Regulation 104/00 on the common organization of the markets in fishery and aquaculture products.²⁸⁶ According to this regulation, Community market policy in fisheries builds on four basic mechanisms: common marketing standards, producer organizations,

a common price system, and a system of trade with third countries. To make clear the promotional aspects of the common market policy, the structure of the common price system as well as the producer organizations must briefly be examined.

To stabilize prices, the Community will intervene in the market. To achieve this, it does not institute price guarantees, but instead modifies the supply and demand mechanism by increasing prices and thus creating artificial scarcity.²⁸⁷ This system was established in 1970 and has not been changed substantially.²⁸⁸ In instituting such measures, the Council will first, by qualified majority, determine guide prices for different

280 European Commission. (2006). *Fisheries and Aquaculture in Europe – European Fisheries Fund: driving sustainable development*, p.8. Brussels: EC.

281 Article 44(4) of Regulation 1198/06; areas shall be limited in size, i.e., they shall be smaller than NUTS Level 3 within the meaning of Regulation (EC) 1059/2003 of the European Parliament and of the Council on the establishment of a common classification of territorial units for statistics (NUTS), OJ 2003 No. L154/1.

282 Article 45(1) of Regulation 1198/2007.

283 Ibid., Article 45(2).

284 Ibid., Article 43(3). As a general rule, areas shall be smaller than NUTS Level 3 of the common classification of territorial units for statistics within the meaning of Regulation (EC) 1059/03 on the establishment of a common classification of territorial units for statistics (NUTS), OJ 2003 No. L154/1.

285 Regarding market stability see Reasons (4), (11) and (27); regarding increasing profitability see Reason (6) and Articles 2 and 3; regarding increasing the variety of supply, see Reason (8) of Regulation 104/2000.

286 OJ 2000 No. L17/22.

287 Churchill, *supra*, note 24, p.233.

288 See Articles 7-16 of Regulation 2142/70 on the common organization of the market in fishery (and aquaculture) products, OJ 1970, No. L236/5; Articles 8-17 of Regulation 100/76, OJ, 1976, No. L020/1; Articles 9-18 of Regulation 3796/81, OJ 1981, No. L379/1; Articles 9-21 of Regulation 3687/91, OJ 1991, No. L354/1; Articles 8-18 of Regulation 3759/92, OJ 1999, No. L388/1.

species before the beginning of each year.²⁸⁹ Prices are set for products at the first stage of marketing, i.e., the sale of fish from fishers to wholesalers or retailers.²⁹⁰ Guide prices are based on the 'average of prices recorded for a significant proportion of Community output on wholesale markets or in ports during the three fishing years immediately preceding the year for which the price is fixed'.²⁹¹ Next, the Commission fixes Community 'withdrawal prices', which cannot exceed 90% of the guide prices set by the Community.²⁹² Producer organizations also have the option of fixing withdrawal prices.²⁹³ When fish prices fall below withdrawal prices, fish can be removed from the market by the producer organizations.²⁹⁴ Producer organizations receive remuneration for a certain amount of their expenditure, only where they apply Community withdrawal prices (or a price close to the Community withdrawal price).²⁹⁵ They are also required to withdraw products meeting market standards.²⁹⁶ Withdrawn products have to be 'disposed of for purposes other than human consumption or in such a way as not to interfere with normal marketing of other products' as well as with the products in question.²⁹⁷ According to Article 21(3), remuneration can reach up to 85% of the withdrawal price. When 4% of the annual quantities of the product put up for sale are withdrawn, the producer organization receives

85% of the withdrawal price. Where 5-10% are withdrawn, remuneration rates range between 55-75% depending on the species. For withdrawn products that exceed 10% of annual quantities of the product put up for sale, no aid will be granted. Thus, increasing withdrawals results in decreasing remuneration. This degressive mechanism is intended to motivate producer organizations to match supply and demand. This system was introduced in response to a European Parliament's resolution objecting the fact that in 1980 more than 100,000 tonnes of fish had been withdrawn and destroyed.²⁹⁸

To complement the degressive remuneration system, keeping waste to an absolute minimum, the Community adopted a system of so-called 'carry-over aid'. According to Article 23, processing and storing withdrawn products can be eligible for aid. Products have to meet certain quality, size and presentation requirements. In addition, they have to be supplied by a member producer. Remuneration will, in principle, only be granted for withdrawals which do not exceed 18% of the annual amount put up for sale. The amount of aid may not exceed the costs of stabilization or storage.²⁹⁹ The Member States remunerate producer organizations, and are later refunded by the Community's Agricultural Funds.³⁰⁰

Table 1. Levels of Community assistance under the organization of markets, 1973–1998.³⁰¹

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total million ECU	1.19	1.19	1.18	9.43	10.61	8.09	17.21	23.04	28.02	?	25,45	14,59	18,49	17,23	17,45
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998				
Total million Euro	46.90	23.99	23.59	26.15	32.07	30.39	33.04	28.1	25.31	21.8	10.9				

289 Article 18(3) of Regulation 104/00.

290 Churchill, *supra*, note 24, p.233.

291 Article 18(2) of Regulation 104/00.

292 *Ibid.*, Article 20(3), referring to Article 38(2) which again refers to the management procedure under Articles 4 and 7 of the Comitology Decision, i.e., Council Decision 468/1999, OJ 1999 No. L184/23.

293 Article 17(3) of Regulation 104/00; Fischer, *supra*, note 64, p.28.

294 Articles 17 and 21 of Regulation 104/00.

295 *Ibid.*, Article 21(1)(a).

296 *Ibid.*, Article 21(1)(b).

297 *Ibid.*, Articles 21(2) and 17(2).

298 Churchill, *supra*, note 24, pp.235-236.

299 Article 23(3) of Regulation 104/00.

300 Since 2005, the 'European Agricultural Guidance and Guarantee Fund (EAGGF)' has been replaced by the 'European Agricultural Guarantee Fund (EAGF)' and the 'European Agricultural Fund for Rural Development (EAFRD)'. Article 35(1) of Regulation 104/00 in combination with Articles 1(2)(b), 2(2) and 5 of Regulation 1258/99, OJ 1999 No. L171/19.

301 See Holden, *supra*, note 52, p.36; and Lequesne, *supra*, note 49, p.95.

V. Integrated promotion and management

The following chapter proposes an integrative approach to promoting and managing fisheries. Subsequently, it will try to draw conclusions from the CFP experiences which complement the integrative approach provided here.

Traditionally, policy makers treat the promotion and management of fisheries as separate categories, drawing up their policy approaches in relative isolation from each other.³⁰² This has led to a lack of coherence in fisheries policy as a whole.³⁰³ In this author's opinion, in order to integrate the two policy areas, promotion should aim solely at adjusting consumption and production capacity to a level commensurate with sustainable exploitation limits. Pursuing other objectives such as increasing the relative size and competitiveness of the fleet or increasing supplies, threatens fish stocks by increasing overall production power. To guarantee the long-term economic and ecological viability of the fishing industry, both *management and promotion* policies must aim at maintaining fisheries resources at sustainable levels. *Management* policies must ensure that fish stock are not continuously exploited beyond MSY levels as qualified by ecosystem requirements. *Promotion* measures must reduce production capacity in the industry to levels commensurate with stocks available (under the sustainable management regime). Ideally, the sector should be of a size where it can produce efficiently, but where producers' demand for fish products does not contribute to overexploitation.³⁰⁴

Several components of an integrated approach to promotion and management of fisheries can be deduced from these premises. An 'ideal type integrated

approach' requires the following actions of coastal states:

First step:

- (Scientifically) assess the quantity of marine capture resources they can take from the seas (including their own as well as third-country waters) without jeopardizing the long-term existence of fish stocks and the ecosystem.
- Adopt and effectively implement sustainable exploitation limits which consider ecosystem requirements.

Second step:

- Assess the impact of the production sector on fish stocks, identifying which segment of the production sector puts pressure on which stocks.
- Restructure the sector to reduce production overcapacities to levels commensurate with the production potential of fish stocks, i.e., sustainable exploitation limits.

Third step:

- Assess whether national promotion schemes actually adjust production capacity so that it is more in line with management objectives and conservation measures.
- Change national promotion policies so that they accord with management objectives by progressively eliminating subsidies that contribute to the maintenance or build-up of unsustainable production powers.

302 See with regards to investments in fishing capacities, Greboval, D. (2000). 'The International Plan of Action for the Management of Fishing Capacity: Retrospect and Prospect'. In: Nordquist, M.H. and Moore, J.N. (Eds). *Current Fisheries Issues and the Food and Agricultural Organization of the United Nations*, pp.561-580, at p.563. The Hague: Martinus Nijhoff.

303 Song, Y.-H. (1998). 'The Common Fisheries Policy of the European Union: Restructuring of the Fishing Fleet and the Financial Instrument for Fisheries Guidance'. *The International Journal of Marine and Coastal Law* 13(4): 537-577; European Court of Auditors, *supra*, note 238, paras 1.18.-1.23; Schrank, W.E. (2003). *Introducing Fisheries Subsidies*, pp.32 *et seq.* FAO Fisheries Technical Paper 437. Rome: FAO; OECD. (2000). *Transition to Responsible Fisheries – Government Financial Transfers and Resource Sustainability: Case Studies*, pp. 6 *et seq.*, Paris: OECD.

304 A similar argument with regards to the adjustment of the fleet size is proposed in European Court of Auditors, *supra*, note 238, para. 1.22; see also Greboval, *supra*, note 302, p.569.

Fourth step:

- Repeat steps one to three periodically.
- Adjust policies, where management and promotion do not contribute to the attainment of sustainable management objectives.

It is obvious that an effective integration of promotion and management approaches requires appropriate scientific assessment and input. Scientific input is not only necessary for establishing safe exploitation limits, but must increasingly take into focus the effects of promotional measures on production sectors and the fisheries resources. When determining which segments of the production sector should be eligible for aid, it is important to understand the pressure each segment places on each fish stock. For example, the fleet must be categorized according to the exploited species, fishery zones and methods of fishing.³⁰⁵ Furthermore, policy makers must always take into account the technological progress of catching techniques which is estimated at about 2% per year.³⁰⁶

The history of the Community's promotional policies provides a set of experiences which supplement the implementation of this four-step approach.

It is particularly important that any new programme to reduce exploitation is simple, precise and binding. Thus, having experienced systems that were costly and difficult to administer (MAGPs),³⁰⁷ the Community currently manages fleet entries and exits using precise fleet reference levels and a clear and simple reduction formula.

The experience of the CFP also teaches that the competitiveness of the production sector should not be increased by so-called 'contrary spending'. Contrary spending grew out of the desire to pursue two opposing

objectives: increase competitiveness and efficiency of the production sector, on the one hand, and reduce the fleet size, on the other. As a result, for a long time the Community was financing both production increases and decreases. Gains in efficiency and competitiveness must be achieved through other means. They may be increased, for example, by managing stocks at MSY (or even the Maximum Economic Yield) levels or through the introduction of ITQs.

An integrated approach would include grants for social and environmental purposes. The Community, for example, has provided useful financial aid to buffer the consequences of limiting fishing opportunities or unforeseen natural occurrences.³⁰⁸ It has also provided funds to reduce the overall economic dependence of coastal fishing areas on catching activities. This supports the diversification and the economic and social restructuring of regional economies.

Promotion schemes can negatively impact third-country fisheries. Community subsidies for a long time aimed at expanding the capture fisheries and aquaculture sectors. This led to huge overcapacities. In response, the Community began to 'externalize' its overcapacity problem by financing the conclusion of international agreements which allowed Community fishers access to third-country waters. This externalization process has contributed to overfishing and resource depletion particularly in West African countries' waters.³⁰⁹ The Commission has recently stated that fisheries agreements must take into account 'the various and often complex circumstances of the third countries'.³¹⁰ It has also declared that Community financial contributions made in respect of access to third-country waters should increasingly go towards covering expenses linked to management, scientific assessment and control of the third-country fisheries.³¹¹

305 See critique on MAGP I in European Commission, *supra*, note 222.

306 Lindebo, E. (2005). 'Role of Subsidies in EU Fleet Capacity Management'. *Marine Resource Economics* 20: 445-466.

307 European Commission, *supra*, note 11, vol. I, p.11.

308 However, public funding (e.g., for the temporary lay-up of vessels) should not help to maintain existing overcapitalization.

309 Mbithi Mwikya, S. (2006). *Fisheries Access Agreements: Trade and Development Issues*. ICTSD Natural Resources, International Trade and Sustainable Development Series Issue Paper No. 2. Geneva: International Centre for Trade and Sustainable Development; Gorez, B. (2005). *Policy Study: EU-ACP Fisheries Agreements*. Brussels: Coalition for Fair Fisheries Arrangements.

310 European Commission. Communication from the Commission to the Council and the European Parliament on an integrated framework for fisheries partnership agreements with third countries, p.3, Com(2002) 637 final; European Commission, *supra*, note 11, vol. I, pp.17-19.

311 European Commission, *supra*, note 310, p.8.

An effective management regime as well as efficient allocation of public funds depends on transparency and public participation. Since 2002, the Community has started to include interested non-governmental parties in the political process leading up to the adoption of CFP measures. On the management side, RACs have increased stakeholder involvement.³¹² An inclusive approach has also been taken under the EFF. To achieve the best possible results, local public and private stakeholders are included in the planning and implementation of promotional funding restructuring fishing economies.

Finally, an integrated approach must recognize that it is not only the catching segment of the fisheries industry which creates pressure on the marine

resources. Policy makers and scientists have failed to acknowledge that *all* subsidies by reducing production costs also lower retail prices. Lower prices, in general, create demand for a product,³¹³ i.e., in the case of fisheries they increase pressure on marine resources. Thus, any evaluation of the production sector must take into consideration the relationship between *all factors* that contribute to rising exploitation. This may include the production sectors' *processing* powers as well as *consumption patterns*. Where the demand for fish is more than can be exploited on a sustainable basis, consumption and production sectors must be downsized so that it accords with the amount of exploitable resources. The adjustment process can be supported through public aid.

Conclusions

The purpose of this report was to: (a) explain the CFP's complex management and promotional regimes; (b) identify problems and failures in both systems, and (c) find out how consistency between promotion and management can be increased.

With regard to point (a) and (b), the report provided in-depth descriptions and explanations of the political and legal system of the CFP.

With a view to point (c), this report clearly indicates that promotion must be integrated into sustainable fisheries management, as the exploitation of marine capture resources ultimately depends on the level of available fish stocks. To guarantee the long-term economic and ecological viability of the fishing industry and the marine environment, both *management and promotion* policies must aim at maintaining fisheries resources at sustainable levels.

Based on experiences under the CFP, the report suggests an integrative approach. In a first step legislators need to identify and effectively implement the level of sustainable exploitation. Secondly, the impact of the production sectors on fish stocks should

be assessed and production capacity adjusted to levels required to obtain sustainable exploitation. Thirdly, taking into consideration the outcome of the first two steps, the effects of existing subsidies should be assessed and adjusted to attain sustainable exploitation patterns. These three steps should be repeated regularly and adjustments made where necessary.

Where legislators aim at adopting and effectively implementing this concept, they will inevitably meet political, legal and technical challenges. It has been pointed out, for example, that currently the political system allows Member States to promote their national fishing industries' exploitation interests at the expense of the common interest in preserving fish resources. TACs, TAEs and technical restrictions are difficult to implement and problems exist regarding the control and enforcement of CFP rules.

However, one must not forget that many of the CFP's conservation and promotion instruments have been reviewed and overhauled many times and that the Community's management system has been improved substantially over the years. For example, the Fisheries Control Agency, the simple entry-exit scheme

312 Although progress with the inclusive approach can be criticized for being rather modest, see Hatchard and Gray, *supra*, note 92, pp.545-554; Ingerowski and Salomon, *supra*, note 93, pp.539-542.

313 Ludicello et al., *supra*, note 112, p.60; see also Jehle, G.A. and Reny, P.J. (2001). *Advanced Microeconomic Theory*, p.54. Boston, MA: Addison Wesley. There are, of course, exceptions to this demand pattern, e.g., luxury goods.

on fleet management, and the stakeholder approach under the new EFF rules are promising mechanisms that will hopefully contribute to sustainable fisheries

management. These and other results of the CFP's tentative learning process can hopefully be an inspiration to other fisheries regimes in the future.

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PART C:

Summary and Suggestions for Reform

Towards a Legal Clinic for Fisheries Management

Based on case studies of Indonesia, Kenya, Namibia, Brazil, Mexico, and the European Union

Gerd Winter

Summary

This contribution summarizes the previous chapters, i.e. the country reports on Indonesia, Kenya, Namibia, Brazil and Mexico as well as the report on international standards for EEZ's.

Building on this material, the study develops a

proposal on a 'legal clinic' for fisheries management, creating a methodology for diagnosing problems in existing management systems and developing proposals for reform. Twelve rules of good fisheries governance are suggested as a guide for the legal clinic exercise.

I. Legal Inquiry into Fisheries Management

Ensuring the sustainability of marine fisheries is a concern that crosses many disciplines. Fish biologists, notably, have achieved a high level of expertise in assessing stocks of many species, analyzing ecosystems supporting them, monitoring catch activities, determining reproduction limits and predicting effects on populations of management measures such as marine protected areas.¹ Fisheries economists have valued fish resources and developed models correlating instruments for subsidising and managing fisheries with actual fishing behaviour.² Sociologists have studied the social structure of fishing communities, identifying forms and effects of self-regulation and participation as compared with centralized management.³

What can lawyers contribute to this rich field of knowledge? The study of law differs from other sciences, which concentrate on correlating variables to construct their theories. Legal jurisprudence is rather an art of solving problems in view of certain rules. Much like other professions, such as medicine, lawyers can offer a diagnosis of management failures and

suggest reforms to realize the goal of sustainable fisheries. Hence, the title of this project, 'legal clinic', refers to an approach that goes beyond mere suggestions for good fisheries governance expounded in the FAO *Code of Conduct for Sustainable Fisheries*; instead, it produces more specific recommendations.⁴ In short, the methodology of a legal clinic is as follows:

- Firstly, it identifies symptoms of management failure, such as harvesting beyond reproduction levels and the use of fishing techniques that damage ecosystems. This initial analysis depends on the availability of empirical data provided by fisheries biology.
- Secondly, symptoms must be traced back to their causes, such as underdeveloped fisheries regulation and deficient fisheries management practices. Such inquiry will often rely on educated guesswork (a legal skill) to accomplish this if empirical economic and sociological studies which provide more reliable footing are not available.

1 See the reports of Incofish workpackages 2-5, 7 and 9, available at <http://www.incofish.org/Workpackages/>

2 See the reports of Incofish workpackages 6 and 8, available at <http://www.incofish.org/>

3 See e.g., the case study in Figueredo, Mauro, 'Promotion and Management of Marine Fisheries in Brazil', in this volume.

4 FAO. (1995). *Code of Conduct for Responsible Fisheries*. Rome, Italy: FAO. See for an analysis of its content Moore, G. (1999). 'The Code of Conduct for Responsible Fisheries'. In: Hey, E. (Ed.) *Development in International Fisheries Law*, pp.85-105. The Hague, Netherlands: Kluwer.

- Finally, this process will yield recommendations for better governance, an undertaking that requires practical judgement (another legal skill). It should likewise be grounded in available economic and sociological findings on the effects of different instruments.

This practical exercise in legal inquiry can also contribute to scientific analysis. While the legal clinic is based on discrete cases, a comparison of several cases (and even an in-depth study of a single case) allows for the generalization of study findings on problems of fisheries management. As with the study of institutional economics, this approach can uncover the causal relationships between management forms and fishing behaviour. There is a difference in the underlying assumptions of law and economics, however.

Economists explain the response of individuals to institutions on the basis that the individual is an economically rational *homo oeconomicus*. Legal science takes a different view, preferring to construct the individual as a *homo socialis*, an actor acting on the basis of rational and non-rational (cultural, social, moral etc.) considerations. Due to the complexity of *homo socialis*, the relationship between management instruments and behaviour can be conceived of as rules of good practice based on educated guesses and practical judgement, rather than as a hypothesis to be tested.

The following paper will present a summarized account of six country case studies (section II) and then look more closely at the legal clinic and its rules of good fisheries management (section III).

II. Fisheries Management in Six Countries

The states examined in our case studies border the main oceans of the earth: the Pacific (Mexico), the South Atlantic (Brazil, Namibia), the North Atlantic (EU), the West Indian Ocean (Kenya) and the East Indian Ocean (Indonesia).

While the choice of cases was made in order to cover a broad geographical range, geography plays a limited role as the *explanans* of variations in fisheries management systems. More important are institutional factors like the degree of centralization within states, the size and thus fishing pressure of fishing capacity, and the professionalism of the administration. All of these factors are also represented in our sample of cases: in terms of centralization two states are unitary (Kenya, Namibia), two are federalist (Mexico, Brazil), one is unitary but decentralized (Indonesia), and one is an international organization with state-like features. Three of the states analyzed rank highly in terms of fishing capacity (EU, Mexico, Namibia) and three states are lower (Brazil, Indonesia, Kenya). Finally, administrative professionalism is highly developed in three states (EU, Mexico, Namibia), in the mid-range in one state (Brazil), and rather low in two states (Kenya, Indonesia).

The cases are presented using a common framework of issues, including:

- Fish stocks and fishing activities;
- Public perception of fisheries problems, communities and organizations of fishermen and the fish industry;
- The constitutional framework for fisheries;
- The formal quality of the relevant legislation;
- The structure and functions of the competent institutions;
- Legal instruments and practices in fisheries promotion;
- Legal instruments and practices in fisheries management;
- The control of fishing by foreign fleets;
- The enforcement of the law;
- A case study highlighting characteristic aspects of the given country; and
- A list of suggestions for reform.

1. Indonesia⁵

Indonesia is an archipelago with a coastline of 81,000 km, more than 10,000 islands (of which about 6,000 are inhabited), a total landmass of 1.9 million km², 3.1 million km² of archipelagic waters and territorial sea, and 2.7 million km² of EEZ. The climate is tropical, hot and humid at lower elevations, but cooler at higher ones. The population is about 215 million, and consists of 350 recognized ethnic groups, many of whom speak their own language. The total GDP of the country is about US\$ 230 billion, the fisheries sector contributing about 2.2% (not counting the important contribution made by the subsistence economy). Indonesia has the largest mangrove forests in the world, estimated at 4-9 million ha. Due to land conversion *inter alia* for aquaculture and illegal clearing, the average loss is as high as 200,000 ha per year. Indonesia is also rich in coral reefs, which extend over more than 50,000 km². However, due to various causes, including bottom trawling, land development, tourism and climate change, only about 25% of the reefs are in good condition.

The total sustainable potential of fish catch per year is estimated to be around 5.4 million tonnes. The actual overall catch has steadily increased, reaching 4.7 million tonnes in 2003. The total count however masks regional differences. While fish are still plentiful in the EEZ, they have been heavily overexploited in many coastal areas, in particular around Java, Bali and Sumatra. Fishing activities are mainly artisanal in the inshore areas, and commercial in the EEZ. Fishing in the EEZ is mainly conducted, not by Indonesian, but by foreign fleets. Foreigners are granted 70% of the licences for fishing in the EEZ. In addition, a great deal of illegal fishing also occurs there.

The overfishing of several inshore areas has only been an issue for public debate for about five years. More acute has been the interest in developing the catch capacity of the Indonesian fleet. Another topic of public interest is how to combat illegal fishing by foreign vessels in the Indonesian EEZ. Unsustainable fishing

practices like the use of explosives and poison are also debated.

Indonesian fisheries employ small-scale artisanal fishing using small vessels, often non-powered or with outboard motors, as well as commercial fishing on vessels with in-board engines of different sizes. Artisanal fishermen mostly sell their catch immediately on the local market. Where the catch is bought by retailers, fishermen are often pressed to sell at low prices. Commercial fishermen normally have a choice of where to sell their catch and thus have negotiating power.

Fishermen and the trade and processing industries are organized in a large number of associations. Although not formally involved in decision making, they nevertheless possess significant bargaining power in political terms. However, small-scale traditional fishermen are not adequately represented by these associations. They are usually organized in informal *Kelompok Neyalan* (fishers' groups) operating at the village level.

Traditional fishing communities in some areas, such as Maluku in the Indonesian east, live according to customary law (*hukum adat*). In relation to fisheries the so-called *sasi laut* contains rules on areas, seasons and fishing gear. Its implementation is supervised by the traditional police (*kewang*). However, the influence of such rules is declining due to economic competition and the development of modern governmental structures. Modern law does not incorporate customary laws and institutions within it, nor does it integrate them into a multi-level concept of sustainable management.

Indonesia was formerly a centralist state. With the Autonomy Laws of 1999 and 2004, the competence to make and execute laws to a significant extent shifted to the local government and some competences were shared, i.e., the Provinces, Districts and Municipalities. Today, the responsibility for the management of

⁵ Summary of Laode M. Syarif, 'Promotion and Management of Marine Fisheries in Indonesia', available at <http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php?WP=Legal%20instruments>. See also the abbreviated version in this volume.

fisheries belongs to the coastal Districts and Municipalities in an area up to 4 nm from the baseline, the Provinces for 4-12 nm from the baseline and the central government for 12-200 nm from the baseline. The relevant administrative bodies are the Ministry of Marine Affairs and Fishery (hereinafter DKP) at the central level, the Provincial Office for Marine Affairs and Fisheries (hereinafter POMAF) at the provincial level, and the District Office for Marine Affairs and Fisheries (hereinafter DOMAF) at the district level. DKP has local branches spread throughout the country for easy on-site access.

Fish resources are considered a common good. Their exploitation generates income not only for fishers, but also for the state. The Financial Balance Law of 2004 provides that any revenue from fees to be paid by fisheries shall be shared between the central and local governments, the former receiving 20% and the latter 80%.

The main legal instrument on the promotion and management of fisheries is the Fisheries Law of 2004. It makes the DKP the central institution responsible for fisheries. The DKP is entrusted with very broad powers to promote and manage fisheries. There is no precise delimitation of responsibilities between the DKP, POMAF and DOMAF. The DKP has taken the lead, with the other agencies following suit albeit showing little of their own initiative. This is due to old attitudes from previous centralist times and a general lack of administrative resources.

The DKP has been active in promoting fisheries by providing a range of fishing training programmes, mostly directed at the commercial sector. In addition, the DKP sponsors a specific training programme for traditional fishers called *penyuluhan*. Another tool to help traditional fishers is the Integrated Economic Development Programme for Villages which, together with other governmental agencies, provides micro-credits and technical assistance. They also benefit from fuel subsidies.

In terms of fisheries management the Fisheries Law grants the responsible agencies extensive powers to regulate allowable gear, delimit fishing areas, establish fish sanctuaries, limit catches, etc. Although it was only

established in 2004, the DKP has made extensive use of these powers. The Fisheries Law further provides that to conduct fishing activities on a commercial basis a person must obtain two licences, one to operate a fishing enterprise and one for the fishing vessel. Licences are issued for three years and can be extended. The fishing licence places conditions on the catching area and fishing gear. The fish species to be caught is not specified, but can be roughly determined by the conditions placed on the type of fishing gear permitted. The licence does not fix individual catch quotas. However, if the responsible agency believes that a particular fishery is overexploited, it will reject new applications and can also revoke existing licences. The authorities do not operate systematic total allowable catch (TAC) schemes. The process of granting licences has recently been streamlined. Licences can now be obtained electronically. This should help to reduce corruption, because under this process administrative officials do not have personal contact with the applicants. Individual fishing licences are not transferable. Traditional small-scale fishers are exempt from licence requirements.

Concerning fisheries in the EEZ, a specific law on the Indonesian EEZ, which is a restatement of the requirements in UNCLOS, mandates the protection of resources against overexploitation and allocates the sovereign right of exploitation of fish resources to the state. However, as stipulated in UNCLOS, if the Indonesian EEZ is not fully exploited by its own fleet, it must allow access to foreign fleets. The DKP actively supports building up the Indonesian fleet to exploit fish resources in the EEZ. While the general Fisheries Act and its instruments are also applicable to fishing activities in the EEZ, a DKP regulation imposes more detailed requirements. This regulation delimits nine fishery zones, which can be differentiated on the basis of the number of licences issued in accordance with the state of the stocks. The regulation also has provisions on fishing gear and techniques. However, due to the lack of systematic monitoring of stocks, there is no TAC scheme in place.

Regarding the issue of whether foreign countries are allowed to fish, Indonesia strives to ensure that benefits are shared. Foreign fishing companies can only operate in the Indonesian EEZ if they invest with

Indonesian partners in a processing plant. Foreign vessels are also required to land their fish in Indonesian ports.

The management of fisheries in the EEZ is characterized by a top-down approach. In contrast to coastal fisheries, which are managed by indigenous structures, the EEZ commercial fisheries sector is less organized and therefore less involved in decision making.

A major problem with EEZ fisheries is the lack of control. Although the DKP has powers to revoke licences and instigate criminal procedures in cases of illegal fishing, it lacks the personnel and equipment to monitor activities in the EEZ. Recently, however, the DKP has taken steps to improve control, in particular, by cooperating with the water police and navy, and requiring and subsidizing larger vessels to carry vessel monitoring systems (VMS). As a result, in 2005, 268 illegal fishing boats were detained and 98 cases were tried in court.

The history of the Bali Barat National Park highlights the differences in the top-down and bottom-up approaches to fisheries management, and demonstrates the substantial contribution that national parks or other nature protection zones can make to fisheries management. In the first phase of the management of the park, the authorities established strict catch regulations through top-down administrative regulation. However, fishermen and members of the tourism industry could easily circumvent these rules. Under a new approach suggested by environmental NGOs, industry stakeholders participated in a complex process to redesign existing management plans, establish cooperative enforcement structures and jointly finance administrative costs. The new approach proved to be rather successful. Although the new regulations were the same in substance as those imposed under autocratic rule, they were better respected in practice. Nevertheless, a high level of quality and commitment in administrative supervision are essential to ensure the long-term success of the scheme.

Assessing the law and practice of Indonesian fisheries management, the following conclusions can be drawn:

- The quality of the legislation is high. There is a Fisheries Code that outlines the basic approach to fisheries management, and governs the promotional and regulatory aspects as well as fisheries in the territorial seas and EEZ. However, the code mainly allocates powers to administrative bodies at different levels of government. Rights and obligations of individuals and companies involved in fishing activities are not elaborated. Substantive criteria designed to ensure sustainable fisheries, which could specify individual rights and duties and guide administrative management, are formulated in imprecise language. Likewise, the different instruments of regulatory action are vague. The Code also fails to elaborate on questions of transparency, participation in governmental decision making and legal protection. Finally, it does not consider how to involve local customary fisheries law and management (where it exists) into a concept that integrates the traditional and modern systems.
- Combining the competences for the promotion and regulation of fisheries and allocating them to a single administrative authority (both at the central and regional levels) is practicable, but improvements could still be made. The main thrust of the policy is on fisheries promotion, rather than sustainable management. This is justifiable insofar as DKP policies aim at empowering traditional fishermen to survive in the modernized fisheries world. Also justifiable is the policy to build up an Indonesian fleet capable of exploiting the fish resources in the EEZ, rather than leaving this to foreign fleets. However, fleet capacity should be promoted within the limits of resource reproduction in order to avoid overcapacity, which would increase industry pressure to overstretch catch quotas.
- There is a lack of information on fishing capacity and stocks. Although licence holders must submit reports on their fishing activities, this alone is insufficient. Independent scientific monitoring is necessary in order to provide reliable data on stocks.
- Regulation by central and local agencies is unsystematic. While the agencies in charge,

notably the DKP, have promulgated a significant number of regulatory measures, it appears that these are still triggered by *ad hoc* events and priorities. Systematic reflection on problems and options for measures that predict the effects and side-effects of each approach is warranted.

- There are gaps in law enforcement. As is the case in numerous other countries, law enforcement in Indonesia is hindered by many factors, including unqualified personnel, substandard equipment and corruption.
- The distribution of central and local competences is unclear. The Autonomy Law and the Fisheries Code allocate competences of the same kind to

all three levels of government. Accelerated by the reform movement of the late 1990s, the nature of fisheries management has moved away from a centralized approach, and now recognizes a role for provincial and district governments. A more precise delimitation of competences, which reserves an exclusive sphere of rights to provincial and district levels is recommended.

- Top-down decision making still prevails. The example of the Bali Barat National Park shows that involving fishermen, traders, the tourist industry and other stakeholders in the management plans and their enforcement is useful for making the rules more effective in practice.

2. Kenya⁶

Kenya has a coastline of about 640 km and an EEZ of 230,000 km². There are a variety of marine and wetland habitats along the Kenyan coast, including coral reefs, sea-grass beds, mangroves and salt marshes. The coastal climate is humid and wet, with variations influenced by the south-east monsoon of April to October (cooler temperature, heavy rain, rough seas) and the north-east monsoon of November to March (warm, light rain, calm seas).

The fishing sector contributes about 5% to the national GDP. Revenues from inland fisheries make up 95% of this contribution, in particular from Lake Victoria, and marine fisheries only 5%. The marine sub-sector employs 5,000-12,000 fishers in the primary sector, 95% of whom are artisanal. Fishing is mostly carried out in nearshore areas using simple boats. These depend heavily on the monsoon wind patterns. The annual catch has fluctuated between 4,000–10,000 tonnes over the last 20 years.

Fish catch in the coastal area has declined over recent years. The reasons for this are manifold, and include increased fishing effort as a result of population increases and non-fisher tribes moving into the area, the use of damaging fishing gear (often introduced by

non-traditional fishermen), and the destruction of habitats due to coastal development, mangrove harvesting and man-made or climate-induced decline of coral reefs.

In the EEZ, almost all fishing activities are discharged by foreign fleets. As yet, Kenya does not have an industrial fishing fleet able to exploit its EEZ resources.

In 1989 Kenya adopted a comprehensive Fisheries Act applicable both to marine and inland fisheries. The Act was specified by two major sub-legal regulations, one on fisheries in general and the other on foreign fishing. The Act and regulations implicitly take the view that fish resources are a common good, which in principle are to be freely used by the population. The law and regulations establish a regulatory framework for such use. They lay down rules on the administrative structure, the registration of vessels and licensing of fishing activities, and powers to make subordinate legislation. The Act is implemented by the Ministry of Fisheries and Livestock and a parastatal called the Fisheries Department (FiD). The Director of the FiD, under the directives of the Minister, is responsible for licensing, monitoring and surveillance, and making

6 Summary of Kamau, Evanson C., Wamukota, Andrew and Muthiga, Nyawira, 'Promotion and Management of Marine Fisheries in Kenya', available at <http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php?WP=Legal%20instruments>. See also the abbreviated version in this volume.

rules on gear and methods, fishing effort, allowable catch, protection of breeding areas, the landing of the catch, etc.

A second law of importance for marine fisheries is the Kenyan Wildlife Act. It is implemented by the Ministry of Environment and Natural Resources (MENR) and other government agencies such as the Kenya Wildlife Service (KWS). The Minister is empowered to declare suitable areas a national park or reserve, including marine areas.

The third law relevant to fisheries is the Forest Act. It is implemented by the MENR Forest Department and empowers the Minister to declare certain areas forest reserves, including mangrove forests.

Finally, the Environmental Management and Coordination Act (EMCA) is relevant because it mandates the MENR and the National Environmental Management Agency (NEMA) to prepare an inventory of biodiversity in Kenya, designate endangered species, protect indigenous rights, set rules on protected sites (including aquatic ecosystems), prepare a survey of the coastal zone, and declare protected coastal zones.

The promotion of Kenyan fishing activities is the responsibility of the FiD. According to the Fisheries Act, promotion shall be aimed at developing both the artisanal and industrial sectors and all levels of production from the catch to processing of fish. The FiD provides training services and supports fisheries research facilities. Transportation infrastructure in Kenya is still underdeveloped. The FiD can give financial assistance to modernize vessels and equipment. However, a scheme providing such assistance was suspended due to organizational failure. No subsidies are provided for small-scale credits for artisanal fishermen, who have to seek credit in the private banking sector. Banks, however, require security which they can hardly provide. Paradoxically, licensing operates as a means of promoting fisheries because the FiD grants an excessive number of licences in order to secure its own budget through licence fees.

Fishermen must register their vessels. The only requirement for registration is that the vessel is safe at sea. A modest fee, which depends on the size of the vessel, is to be paid to the FiD. Fishermen must also

obtain a licence to fish. The Director may attach conditions to the licence, which normally place restrictions on the species of fish to be caught, fishing gear, method of fishing and area for which the licence is valid. The licence can be modified or revoked if the state of fish resources so requires. However, the licence conditions and modifications are based on *ad hoc* assessments, rather than systematic knowledge and planning determined by the state of the resource. Hence, it is understandable why Kenya does not set TAC quotas nor allocate individual catch quotas.

The Fisheries Act establishes a general prohibition on catching sea turtles and mammals as well as the use of explosives. In addition, the Director can fix gear and fishing effort restrictions, although there is no systematic approach in place for this. Bottom trawling, beach seines, spear guns and other destructive practices are not currently banned.

On the southern coast, artisanal fishing is still widely based on traditional structures and rules. Whether these structures lead to a more sustainable use of resources is difficult to say. For instance, fishermen observe certain time and area restrictions as practised in modern fisheries management, but the reasons for these restrictions relate to traditional and religious beliefs. Some areas are closed to fishing because they are believed to be sacred and haunted by spirits. However, this is no guarantee of sustainable practices. It has been reported that some traditional leaders support the use of unsustainable gear. The situation is complicated by the fact that, in addition to traditional authorities, there are state-based local authorities. This duplication loosens ties with traditional authorities. The case of the Diani-Chale area shows that local self-regulation is likely not powerful enough to oppose the use of beach seines and spear guns.

Differences and tensions between the management approaches of the state, municipalities and traditional leaders have hindered clarity and the acceptance of fishing rules. In reaction to this stalemate, Beach Management Units (BMUs) have been proposed. Adopting a participatory approach, they are designed to combine state, local and traditional elements in a common structure.

At times there is tension between the FiD and the MENR, hindering coordination between these departments. When the MENR, assisted by the KWS and its forest department, decides to establish marine protected zones and mangrove forest reserves, and restrict fishing in these areas, licences to fish are nevertheless generously granted by the FiD. Such tensions could be mitigated if BMUs were created in national parks and nature reserves.

Kenya has as yet not entered into any agreement with foreign states allowing them to fish in the Kenyan EEZ. There are, however, plans to conclude such an agreement with the EU, likely one containing requirements to set up partnerships for fishing, monitoring and processing activities. The Fisheries Act provides the possibility to grant fishing licences to foreign vessels – even without an international agreement. Foreign vessels must pay US\$ 20,000 per year plus royalties calculated on the quantity and value of the catch. Royalties are considered to be comparatively low. The licence fixes the species and amount to be caught. This presupposes that the overall quantity of sustainable catch is known, which is not the case due to lack of monitoring and surveillance capacity. Therefore, the quantity of fish assigned to foreign fleets is rather arbitrary. Often it is not even precisely fixed, nor are time limits for fishing set out. Although the Fisheries Act requires that fishing plans be set up for fisheries operating in the EEZ, no such plans currently exist.

The surveillance of fishing activities in the EEZ is a major weakness of the Kenyan fisheries administration. It is suspected that huge quantities of fish are caught illegally and go unnoticed. Paradoxically, the KWS with its foreign aid money would have the financial and logistical means to assist in this respect (and is indeed sometimes called upon by the FiD to do this), but it lacks the competence to act on its own.

In conclusion, the following suggestions may be made:

- The Fisheries Act is commendable for comprehensively codifying the instruments of promotion and management of fisheries, as well

as setting up the structure and powers of administrative rule making and adjudication. However, it lacks substantive proposals on how to orientate promotion and management, such as establishing criteria for sustainable resource use, adopting the precautionary principle, and ensuring distributional justice.

- It appears that central government and local, especially traditional self-regulating structures, are not adequately linked. The proposed BMU could be a seminal initiative in this direction.
- At the state level, better coordination is needed in order to deal with the somewhat paradoxical situation that the fisheries department has the power but not the means to control fishing activity, while the environment department has (due to generous foreign aid) the means but not the power. Regarding nature reserves and national parks, rule making and licensing should fall within the exclusive competence of the environment department.
- State income from fisheries needs to be readjusted. The fees charged to those with artisanal fishing operations should only reflect the costs of licensing and enforcement. As long as an industrial sector has not developed, any further administrative costs (such as for monitoring stocks and high tech surveillance) should be borne out of the general budget.
- A Kenyan industrial fleet to operate in the EEZ should be built up as an alternative to letting foreign fleets exploit Kenyan resources. This could increase employment and revenues to the Kenyan economy. However, such promotion must be combined with the creation of strong monitoring and surveillance capacities to exclude illegal foreign fishing, as well as the political will to impose TAC limits, effort and gear restrictions, and delimit restricted zones. Furthermore, the royalties to be paid for industrial exploitation of the common resource must be adjusted in view of the value of the resources harvested and the governmental costs of management.

3. Namibia⁷

Namibia has a coastline of 1,752 km, most of it bordered by desert. The territorial sea and EEZ cover 580,000 km². The climate, as typical of semi-desert countries, has hot days and cool nights. The coastal regions are cooler due to the cold Benguela current that causes fog and inhibits rainfall.

Due to the Benguela current system, the Namibian EEZ is one of the most productive fishing grounds in the world. The commercial fisheries target about 20 species. When it became independent in 1990, Namibia inherited heavily overfished stocks. Today most of them have recovered; but some species are still overfished, such as the pilchard and the monkfish.

The fisheries sector contributes significantly to the national GDP, i.e., US\$ 372 million (7%) to a total of US\$ 5 billion. For a population of two million it provides 5,800 jobs in the primary and 7,900 jobs in the secondary sector. While the internal market for fish products is small, exports of fish and fish products are large and steadily increasing. Paradoxically, fish products are even imported into this resource-rich country.

Almost all fishing activities are industrial. Artisanal fishing barely registers. The Topnaar, a coastal tribe that (traditionally) practises small-scale fishing based on indigenous management rules, have been prevented from continuing their fishing activities under the colonial and post-colonial regimes.⁸ Many people of this tribe are now employed in the fishing industry. Significant small-scale fishing continues in the tourism sector. The fish caught during recreational fishing can only be kept for personal consumption. However, under the umbrella of recreational fisheries an informal small-scale sector has emerged. This sector has a significant impact on the state of resources due to the long life cycle of coastal species.

The public's concern with fisheries focuses on the economic development of the sector, such as job

creation in the primary and secondary sectors and increasing revenues from the export of products. Empowerment of the disadvantaged is also a public issue. The prevention of overfishing is debated more in scientific circles than by the public at large. Climate change and its possible impact on the beneficial Benguela current is a point of growing concern.

The fishing industry is organized in associations representing different target species. These are linked through the Confederation of Fishing Associations.

Namibia is a unitary state. Its constitution requires the government to maintain the health of ecosystems and ensure the sustainable use of living natural resources. A Fisheries Act was adopted in 1992, but replaced by the more comprehensive Marine Resources Act in 2000. The Act lays down the rights and duties of the fishing sector, and establishes the institutional structure of fisheries governance.

The Minister of Fisheries and Marine Resources is the main implementing body of the Act. The ministry is responsible for the creation of subordinate legislation as well as for adjudication in individual cases. It is competent both to promote and manage fisheries and the fishing industry. It is supported by the Fisheries Observer Agency, which provides fisheries inspectors and collects information from inspections of fisheries and the fish industry. The Minister is advised by the Marine Resources Advisory Council (MRAC) composed of experts representing other Ministries, the industry, trade unions and research institutions. Environmental groups are not invited to send members. In addition, there is the Namibia Maritime Fisheries Institute (NAMFI), responsible for training, and the National Marine Information and Research Centre (NatMIRC).

Namibia does not operate fishing subsidies schemes, neither directly nor through tax exemptions. This is noteworthy in comparison to other countries.

⁷ Summary of Rukoro, Raywood M., 'Promotion and Management of Marine Fisheries in Namibia', available at <http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php?WP=Legal%20instruments>. See also the abbreviated version in this volume.

⁸ See Mapaire, C. (2007). 'A failed success: natural acumen and sustainable traditional fishing among the Topnaar community'. Dissertation submitted to the Faculty of Law of the University of Namibia (on file with author).

However, the government puts much effort into providing a favourable infrastructure such as harbours, training, research, etc.

Through levies and fees, the fisheries sector is a source of income for the government. The funds are allocated to covering *inter alia* the costs of the inspection services of the Fisheries Observer Agency. Thus, the sector substantially contributes to its own surveillance costs.

Regarding fisheries management, the Marine Resources Act gives the Minister comprehensive powers to take measures: he or she can impose conditions on the place and time of harvesting operations, the characteristics and quantities of harvestable resources, and fishing methods and gear. The Minister may also designate an area as a marine reserve for the protection and regeneration of living resources. Most importantly, the Minister may fix total allowable catches for specific fish species. The decision must be based on best scientific evidence and the advice of MRAC. TACs are presently set for eight species.

An individual (usually a corporation) undertaking fishing needs to obtain two licences: one for harvesting fish and one for the vessel.

The right to harvest fish is issued for specified fish species. In principle, the quantity of allowable catch is not limited. If a TAC has been set for the species in question, however, the right-holder must apply for an individual quota deducted from the TAC. The Minister can revoke fishing rights, without compensation, if the state of the stock so demands.

The vessel licence is granted on conditions which do not clarify the core sense of this instrument of control. It seems that such conditions are meant to provide some kind of capacity control. For instance, the application can be rejected, if the approval is not in the interest of the fishing industry, or if the biological sustainability of a resource is threatened.

Foreign fishermen or companies undertaking fishing in Namibian waters also require two licences to fish. The basis for granting these licences is an international agreement between Namibia and the

foreign country. Only with states that are members of the South African Development Commission are allowed to conclude such agreements. No agreements have been concluded with 'Northern' countries. This is due to the governmental policy of Namibianization (or Africanization) of fisheries and fish processing.

Vessel licences must also be obtained for Namibian flag vessels fishing beyond the Namibian EEZ. The purpose of this requirement is to exert a sort of flag-ship state control in the EEZ. However, there are no specific legal requirements which specify what conditions can be placed on the licence, nor are enforcement measures foreseen by the Act.

Over the years, Namibia has introduced a monitoring, control and surveillance system (MCS) consisting of on-board observers, sea, air and shore patrols, monitoring of landings in the two ports, and reports on movements and catch by vessels. Namibia is presently installing a satellite-based vessel monitoring system. It has a history of strict but fair prosecution of foreign vessels that are fishing illegally in the Namibian EEZ.

Taking an evaluative stance, the following can be concluded:

- The legislation is of high quality. The Marine Resources Act is a comprehensive piece of legislation, which regulates the rights and duties of fishermen as well as the structure and competences of the relevant administrative bodies. However, the legal techniques could still be improved. The power to make subordinate legislation should be qualified by establishing objective criteria such as sustainability and the precautionary principle. The conditions, content and revocability of rights and licences should be framed in more precise language.
- The combination of competences for the promotion and management of fisheries in one ministry seems to function adequately. Through the integration of these policies, Namibia has been able to build up a national fishing industry and, at the same time, ensure sustainability by using TAC schemes for endangered species. The

government has been careful to introduce the scientific monitoring of stocks, although this could still be improved. The decision making on managing resources has been detached from the direct influence of interest groups. As the case of TAC for hake in 2006 shows, while the Minister did invite industry and other stakeholders to comment via the MRAC and in open debate, he remained independent when insisting on setting limits in the long-term interest of sustainable resource use.

- There is a significant informal small-scale fisheries sector which falls under the umbrella of tourist fishing. Legitimizing this sector would make it easier to control. One possible solution is to reserve coastal fisheries for small-scale fishermen. This might improve supplies to the domestic market,

and mitigate the fact that Namibia imports most of the fish consumed internally.

- Namibia has successfully appropriated its EEZ for exploitation by national industry. However, it appears that most of the capital shares and real influence are in Spanish hands. The only foreign fleets permitted to fish in Namibia's EEZ are neighbouring SADC states. This limitation is understandable, but it is doubtful whether it complies with the UNCLOS principle that surplus resources must be shared with other countries.
- The enforcement of laws and regulations is taken seriously. Sophisticated equipment and well-trained enforcement personnel seem to be available. However, while large ships seem to be well controlled, this is not the case with mid-sized vessels.

4. Brazil⁹

Brazil has a long coast of approximately 8,500 km with numerous islands, making a total of 3.5 million km² of territorial sea and exclusive economic zone (EEZ). The climate in the area is mostly tropical and subtropical.

Most of the fish species caught in the territorial sea are overfished. Fish resources in the vast EEZ are mostly not yet overexploited.

Although fishing activities do not contribute significantly to the country's gross national product, they do provide jobs for the coastal communities and are an essential food source for the nation. The total number of jobs directly related to marine fishing is estimated at 800,000.

Marine fishing can be divided into activities in the territorial sea and in the EEZ. Both artisanal fishermen and industrial companies operate fisheries in the territorial sea. Artisanal fishing is based on coastal communities which are not indigenous but were founded by European settlers. They are often illiterate and have a low average income. The vessels are small

or medium-sized, reaching a carrying capacity of 10 tons, and are normally owned by the fisherman themselves. Industrial fishing appears in two variants: One is that the vessel and equipment is owned by a so-called outfitter. The crew – fishermen, a machinist, freezer operator, cook etc. – lease the vessel. The catch is shared among the operators and the outfitter. The other mode is that the vessel is owned by a company that employs the crew and pays a salary and often gives a share in the catch. Industrial fishing in coastal areas has been a long-standing concern for artisanal fishermen. They blame industrial fishing as the main cause of overfishing in the area.

Fishing in the EEZ is conducted by industrial vessels. The Brazilian fleet is still modest in size, and so most of them belong to foreign countries. Brazilian companies also often operate leased foreign vessels.

The organizational infrastructure of the fishermen is highly complex. Fishermen are organized in so-called *colonias*. Colonias perform a social function, for example, channelling government social benefits to the individual recipient, providing training, and promoting

⁹ Summary of Figueiredo, Mauro, 'Promotion and Management of Marine Fisheries in Brazil', available at <http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php?WP=Legal%20instruments>. See also the abbreviated version in this volume.

the fishermen's interests in the political arena. Some are more active in this role, while others more passive, depending on the commitment of their leading personnel. Colonias form state federations and the national federation of colonias, called National Confederation of Fishermen (CNP). Fishermen are also organized in labour unions and other groups with political or religious aims. Overall, there is a lack of coherent organization causing inadequate political representation of the interests of fishermen.

The industrial sector is organized in associations, notably the Union of Fishing Companies, and councils such as the National Council of Fishing and Aquaculture.

Brazilian fisheries law is grounded in its Constitution, which calls on the state and its members to protect natural resources. It declares the territorial sea (together with other regions) a patrimony, which establishes a particular though unspecified duty of preservation. Competences for natural resource legislation including fisheries are allocated to the federation, the states and the municipalities, according to the principle of concurring competences. This means that the lower level must respect the higher level of legislation, but in the absence of higher-level legislation the lower level is entitled to legislate. In relation to fisheries almost all of the legislative powers are federal, including also subordinate rule making.

There is no all-encompassing code on fisheries. Rather, the central law is an organizational law (Law 10.683 of 2003) that allocates competences and powers to various administrative bodies. Two of these are of major importance for fisheries: The Secretaria Especial de Aquicultura e Pesca (SEAP) is mainly responsible for developing the national fisheries industry; it is empowered to make rules on developing the sector, and it is responsible for issuing licences for fishing activities. The second administrative body, the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renovaveis (IBAMA, Brazilian Institute for the Environment and Natural Resources), is a sub-department of the Ministry of the Environment. Together they have the task of ensuring the environmental sustainability of the industry. To this

end, IBAMA can regulate the catch of species that are overexploited or threatened by overexploitation.

Both the SEAP and IBAMA have taken an active role in achieving their respective regulatory mandates. The SEAP has initiated various programmes to encourage the building up of a national fishing fleet and support fishing activities (e.g., subsidising fuel costs). It has focused on developing industrial fishing rather than artisanal fishing. By contrast, IBAMA has imposed a variety of limits on fishing activities, including non-fishing periods and areas, minimum catch size, rules for the use of gear, total allowable catch for a small number of species, etc. Most of the restrictions are aimed at fisheries with operations in the territorial sea; the policy regarding fishing in the EEZ is still to develop the sector rather than restrict its activities. A TAC scheme has only been enacted for one species.

A critical assessment of the legal and organizational structures points to the following conclusions:

- A comprehensive code on marine fisheries is lacking. Such a code could set out the over-riding principles and policies on fisheries, including the rights and duties of fishermen, competences and powers of various administrative bodies, forms of representation of the fishing sector, sanctions, etc.
- There is much overlap in the legislative competences of the federal, state and municipal governments. It appears that the lower levels remain inactive because they trust that the federal government will take action; this is true even though the states and municipalities are better positioned to deal with the special conditions and problems of their coasts. With a more clear-cut separation of competences, the states and municipalities could be encouraged to engage with the issue of caring for their coasts. Fisheries management in the EEZ, however, should become the exclusive competence of the federation.
- There is an institutionalized conflict between promoting and restricting fisheries. The conflicting competences of the SEAP and IBAMA

should be reformulated; it is unreasonable to subsidize a fleet, on the one hand, whilst restricting its ability to realize its full catch potential on the other. Therefore, any subsidies aimed at increasing capacity must be tied to the availability of resources. It might also be advisable to merge these agencies into a single administrative entity. In that case, given the vulnerability of the resource, the ministry in charge of this body should be the Ministry of the Environment, rather than the Ministry of Agriculture.

- Participation of the fishing sector and of the public in general is underdeveloped. The present approach is very top-down. This is a major reason for the *de facto* non-compliance with fisheries regulations. Those subject to the rules ought to be better involved in the decision-making process.

5. Mexico¹⁰

Mexico has an EEZ of 3.15 million km² with a coastline of 11,500 km bordering two seas: the Gulf of Mexico and Caribbean Sea in the east, and the Pacific Ocean in the west. Fisheries (including aquaculture) account for 248,000 direct jobs, and 0.8% of the total GNP of US\$ 624 billion. The fishing trade is worth about US\$ 185 million in imports and US\$ 602 million in exports.

The total national catch has ranged between 1.2 and 1.5 million tons. Ninety percent of fishing activities are based on 99 fisheries, which harvest 636 species. Seventy-one fisheries are deemed exploited to their maximum, 17 can be further expanded and 22 are declining because of overfishing.

The fishing industry is represented by the National Chamber of the Fisheries Industry, while artisanal fishermen are organized in fisheries cooperatives and the Federations of Fisheries Cooperatives such as FEDECOOP Baja California, the organization for abalone and lobster fisheries. In both cases, these organizations have gained a certain degree of influence over governmental fisheries policies. There are a few

This would ensure that the rules were respected in practice. Support for this recommendation can be found in the example of the highly successful Arvoredo Biological Marine Reserve. The first phase of its establishment was marked by a top-down approach and very restrictive rules that were ignored in practice. In a move towards participation, the rules were revised following close cooperation with the fishermen and an environmental NGO. The result was more flexible rules that supported the artisanal fisheries and excluded industrial fishing from the core area. This had ancillary benefits, since catch limitations in the core zone led to an increase in stocks in the adjacent zones thus also serving the interests of industrial fishers allowed to fish in these zones. Moreover, having participated in the rule making, fishermen were more inclined to respect the rules.

indigenous communities of fishermen, such as the Yaqui and Mayo.

The Mexican public tends to focus on issues like overfishing and fleet overcapacity, and often debates the lack of compliance and control. Governmental monitoring of fish stocks is alleged to be inaccurate. There are conflicts between tourist and artisanal fishing interests in dorado fisheries; and clashes between commercial fishing and environmental interest groups on the question of trawling and its effects on endangered species such as the sea turtle. Another public issue of concern is foreign fleets fishing in Mexican waters, which is strongly opposed by the Mexican fishing industry.

Mexico is a federal state with 31 states and a federal district. Seventeen of these states are coastal. According to the Mexican constitution, fish resources in the coastal zone and EEZ belong to the nation as represented by the government, which is empowered to allocate use rights to individuals. The constitution states that fish resources are the exclusive sovereign right of the nation,

¹⁰ Summary of Ponce-Díaz, G., Arregín-Sánchez, F., Díaz-de León, A. and Torres, Porfirio Alvarez, 'Promotion and Management of Marine Fisheries in Mexico', available at <http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php?WP=Legal%20instruments>. See also the abbreviated version in this volume.

making access by foreign fleets dependent on express authorization by the Mexican government.

In 1992 the first comprehensive Law on Fisheries was introduced. It gave priority to modernizing the industry through competition and improved technology. Sustainability could be ensured through the requirement of a fishing licence. The law adopted a top-down approach, making central government primarily responsible for the regulation and administration of fisheries. The Law on Metrology and Standardization is also relevant to fisheries, forming the basis for the regulation of fishing gear, minimum fishing sizes, seasonal closures, etc.

In October 2007, a new Law on Fisheries and Aquaculture was promulgated. It aims at strengthening the principles of sustainability, devolving competences to lower levels, and increasing stakeholder participation.

The core administrative body responsible for the regulation, adjudication and surveillance of fisheries is the Ministry of Agriculture, Cattle-Raising, Rural Development, Fisheries and Food. This federal institution is advised by the National Commission of Aquaculture and Fisheries (CONAPESCA), a body that includes representatives from stakeholder groups in its decision making. The Ministry and CONAPESCA are also advised by the National Institute of Fisheries (INP). The INP carries out research on all natural, economic and social aspects of fisheries. In addition, the new Fisheries Law provides for Consultative Committees involving affected stakeholders. However, as their competences are small, they will not play a significant role. The new law also puts increased emphasis on improving the empirical basis of fishing activities and fish stock development.

The states have gained importance in the area of fisheries management in relation to their federal counterparts. Together the states have founded State Fishing and Aquaculture Councils to organize their input. However, they have largely failed, mainly due to their lack of technical expertise. Moreover, their competences are limited to giving advice. Competences to decide on fisheries regulation and licensing have not been devolved to them.

Fisheries promotion in Mexico centres on providing landing and marketing infrastructure, training of fishermen and granting credits to fishermen and aquaculture farmers. These programmes are largely maintained with federal funding and organized by CONAPESCA. The states provide additional support directed at fish processing and marketing, as well as gasoline subsidies. In general, small fishermen receive less support than the more powerful industrial fishing companies. A market organization providing for price and buy-off guarantees has never existed in Mexico – not even during the two US embargoes against Mexican tuna in 1980 and 1990.

Fisheries management lacks a firm basis in catch and stock monitoring. TACs are not systematically used as a means of control. However, for some fisheries, such as tuna, abalone and clams, TACs have been set. For tuna, these are based on the limits set by the Inter-American Commission of Tropical Tuna (CIAT). Fishing activities need to be licensed. It seems that licensing is a means of monitoring fishing capacity, but not of actually managing capacity with a view to preventing overcapacity. Licences are issued for up to four years and concessions for up to 20 years, depending on the size and amortization of the investment in the vessel or industrial infrastructure. Fees have been established to offset administrative costs, and are not viewed as a royalty scheme based on the use of the resource. For instance, a 20-year licence costs about US\$ 653 plus an annual US\$ 48 for abalone, US\$ 1 for shark and US\$ 60 for clams.

Indigenous fishing communities have preferential access rights to fisheries. They do not need a licence if they use traditional gear and practices. According to the law (although not necessarily in practice) they enjoy preferential treatment for any requests they submit and must be consulted on any matter of concern to their fisheries.

In relation to foreign involvement in the fishing sector, the Mexican government encourages technical-scientific cooperation and supports foreign investment, particularly in fish processing. Mexico has not concluded any bilateral agreements on access to Mexican seas, except with Cuba. In exceptional cases,

a fishing licence can be granted to foreign vessels if they provide a certain number of jobs for Mexican workers. However, illegal fishing by vessels flying foreign flags is common because of a lack of effective surveillance.

Generally speaking, although the law provides adequate means for monitoring fishing activities, enforcement of the rules is lacking. This is partially due to a shortage of qualified personnel and equipment, but also a consequence of corruption in some cases.

An example of regionalized and participatory coastal management is the Marine Ecological Management Programme for the Gulf of California. It is based on an agreement between the federal and five coastal state governments and involves stakeholders from the industrial and artisanal fisheries sectors, environmental associations, tourism, indigenous groups and academia. The programme was established to investigate the various uses of the coast and coastal sea, with further plans to develop an integrated management scheme. The result of this study was the creation of 22 Environmental Management Units (UGAs), of which 15 border the coastline and seven are located in the ocean. Sustainable use plans have been elaborated that give guidance to the governmental agencies that are responsible for regulating and administering the units.

Based on these findings some recommendations can be made on fisheries policy in Mexico:

- The new Fisheries Law of October 2007 is comprehensive and, in parts, very precise. It establishes general principles and aims, frames an institutional structure responsible for fisheries promotion and management, allocates competences, encourages policies on promotion, provides instruments of management, emphasizes surveillance and introduces sanctions for infringements. However, the substantive criteria framing administrative action are sometimes contradictory or too general. Instruments of promotion are not specified. Powers to introduce regulatory instruments (i.e., TACs, regulation of fishing practices and instruments, effort control) are not expounded. Furthermore, the law does little to improve transparency and encourage participation in governmental decision making.
- The combination of competences for promotion and regulation of fisheries in the Ministry for Agriculture, Cattle Raising, Rural Development, Fisheries and Food, i.e. in one and the same administrative structure is practicable. However, it appears that the law places priority on the promotion of fisheries without ensuring that fleet capacity remains at a sustainable size. The position of the Ministry for the Environment and Natural Resources could be strengthened; whilst the Minister has some decision-making power in relation to protected areas, in the other areas the role is consultative and Ministerial consent is all that is required to take a decision.
- While the new policy makes a move towards decentralization, actual decision-making competences are not devolved to the states and municipal levels. States and municipalities are only invited to comment on and implement central government decisions.
- It is somewhat strange that standardization competences for fishing technology lie with the general standardization bodies and follow the rules set up by the Law on Metrology and Standardization. It is doubtful whether the regulations sufficiently ensure the necessary technical quality and legal rigour of standards for sustainable fisheries.
- There is still a lack in systematic monitoring of stocks, catch and landings, especially in the Mexican EEZ.
- Although some fisheries appear to be adequately controlled, in general, fisheries management tools (e.g., TACs, restrictions on fishing methods and effort) are used only haphazardly.
- Surveillance and sanctioning of infringements appear to be highly deficient. Corruption sometimes hinders appropriate control. More

importantly, although the law is adequate to control fisheries, enforcement is hindered by a lack of qualified personnel and equipment.

- It is noteworthy that the Mexican red lobster fishery is one of the first fisheries certified under the Marine Stewardship Council scheme.
- The new fisheries law moves away from the

6. European Union¹¹

The coastline of the European Union (EU) is about 68,000 km long. Its maritime area covers an EEZ of 25 million km², making it the world's largest (in part, due to its overseas territories). The jagged coastline marks a perimeter that is three times longer than that of the USA and almost twice that of Russia.

In 2005 the population of the 25 EU member states (EU-25) comprised 460 million people. The GDP at that time was about € 10,800 billion. The value of the whole production chain (i.e., fishing, aquaculture, processing and marketing) was at estimated € 20 billion, representing approximately 0.28% of the Community's gross domestic product. Total employment in the marine fisheries sector is estimated at 400,000 persons with 210,000 working as fishermen. Despite this small share, many coastal communities rely heavily on fishing as a source of employment and income. In some areas in Scotland and Spain, the fishery sector provides for more than 10% of the total jobs.

In the EU-25, total annual catch has steadily decreased from 8.1 million tonnes in 1995 to 5.3 million tonnes in 2004. According to a 2007 assessment, the percentage of fish stocks outside safe biological limits was 14% in the Arctic, 26% in the Baltic Sea, 44% in the North Sea, 30% in the Celtic Sea, and 10–20% in the Mediterranean Sea. Bluefin tuna stocks both in the Atlantic and the Mediterranean seas were identified as near to collapse. In general, overfishing hits demersal and benthic fish harder than

traditional top-down management approach, and now provides for stakeholder participation. The effects of this policy are visible in CONAPESCA, the advisory body on fisheries, which provides for the participation of fishers and the fishing industry. Despite this positive first step, currently, environmental and artisanal interests are not sufficiently represented in administrative structures.

pelagic fish. Fish stocks are also under pressure from multi-source introduction of toxic and nutrient substances, invasive species, and climate change.

High demand for fish has caused the EU fleet to target the EEZs of southern countries, and fish imports from other countries are constantly increasing.

Public opinion on fisheries issues is split in the EU. Concerns about overfishing are constantly aired in the press. The allegation that TACs set by the Council of Fisheries Ministers are unsustainable is widespread; as is the complaint that EU fleets, after having overexploited EU seas, now target the EEZs of other countries. Environmental NGOs have been successful in keeping this topic alive. However, public education has done little to change the actual consumption patterns of EU consumers. Members of the fishing industry still tend to believe that they can better judge the state of fish stocks than scientists and policy makers. In recent years, however, the food industry has shown greater interest in strengthening stock preservation strategies to guarantee long-term supply.

The total fleet size of the 25 EU member states is about 87,000 vessels. Fleet size varies across member states; the fleets in Greece, Portugal, Italy and Finland are typically small-scale, mixed in France and Spain, and large in Belgium and the Netherlands. Some coastal states, such as Germany, have largely given up offshore fisheries and substantially reduced inshore fisheries.

11 Summary of Markus, T., 'Promotion and Management of Marine Fisheries in the European Union', available <http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php?WP=Legal%20instruments>. See also the abbreviated version in this volume. For a general but partially outdated analysis of the EU fisheries law, see Holden, M. (1994). *The Common Fisheries Policy. Origin, Evaluation and Future*. Oxford, UK: Blackwell.

The EU is an international organization operating through the European Community (EC) and its institutions. The EC is a quasi-federation with considerable supranational powers to legislate and administer with direct effect on EU citizens.¹² Legislation on fisheries is an exclusive competence of the EC. Therefore, almost all fisheries legislation consists of EC legal acts. The same is true for most of the executive rule making.

Primary legislation on fisheries is made by the Council, which acts on a proposal of the Commission and after consultation with the European Parliament. Executive rule making and decisions on routine matters are delegated to the Commission, which is assisted by committees comprised of government representatives of the member states. The more important executive rules (such as the regulation of TACs, licensing, effort and technology) are reserved for the Council acting on a Commission proposal. Consultative bodies representing commercial, consumer, scientific and environmental stakeholders, called the Consultative Committee on Fisheries and Aquaculture (ACFA) and Regional Advisory Councils, also have influence on EC policy making. In fact, the decision-making structure of EC fisheries policy is largely determined by the Council which represents the interests of the member states; the institutions representing the genuine European interest in preserving the European common fish stock (European Commission and the European Parliament) only play a secondary role.

Matters left open by EC legislation and executive rule making, such as the breaking down of the national catch quotas into individual fishing rights, are regulated by the member states. The member states are also responsible for dealing with individual cases, such as the granting of permits and the surveillance of fisheries. The Commission, however, has supervisory powers over the member states. It can order them to take remedial action, and impose sanctions if they violate the assigned allowable catch quota by reducing future

quota and stopping subsidies. Thus, the Commission's powers in fisheries matters are considerably greater than those instituted under the regular infringement procedure, which involves complicated proceedings before the European Court of Justice.

When collecting and assessing information on the implementation of EC fisheries legislation, the Commission and member states are assisted by the Community Fisheries Control Agency.

In spite of the far-reaching EC powers over fisheries matters, the management of coastal zones was re-delegated to the member states within the framework of the existing EC legislation. Subject to existing Community measures, the member states are entitled to introduce catch restrictions in these areas, and may reserve the territorial sea for artisanal fisheries fishing from ports of the adjacent coast. However, coastal states are not allowed to favour their own nationals, as this would breach the principles of equal treatment of all EU citizens and of their free access to all Community waters.

Fish resources have no specific status under the European constitution. They nevertheless belong to the sphere of public interest. This means that legislation aimed at the protection of this resource which encroaches upon the constitutional right to property and free enterprise can be justified. Moreover, EC institutions are not only empowered, but are required, to protect fish resources and fashion fisheries legislation accordingly.

The main legal instrument on fisheries is the EC regulation of 2002 (Regulation 2371/02). It is a comprehensive codification of EC fisheries management tools and also addresses fisheries promotion. The act purports to mark a turning point in the EU's Common Fisheries Policy (CFP), moving away from catch increases to more sustainable policies.

12 The European Union is an international organization founded on the European Communities (European Community (EC) and EURATOM) giving them strategic guidance and taking joint action in the areas of foreign and security policies and police and judicial cooperation in criminal matters. The powers of the EU are intergovernmental but not supranational in nature. According to one controversial view, it does not possess international legal personality. The EC although consisting of the same members and largely having the same organs as the EU is an international organization disposing of supranational powers and having international legal personality. Regarding terminology, the acronym EU is used to characterize the whole of the integrated Europe. If legal acts and international treaties are involved the actor is the EC, not the EU, and must be named as such.

The earlier approach to fisheries promotion was to subsidize the purchase of vessels and gear to build up a larger and more efficient fleet. In addition, the market was organized to ensure that any catch surplus was bought up by states at a guaranteed “withdrawal price”. The catch withdrawn from the food market was used for feedstuff and other purposes, which helped to stabilize the price of fish for human consumption. This promotional system led to an increase in fishing capacity and actual catch, resulting in overfishing. Over the years, and particularly since 2002, promotional instruments have shifted towards reducing fishing capacity, e.g., by ending subsidies for new vessels, redirecting other subsidies for the purchase of sustainable gear, and offering fishermen assistance for early retirement, permanent withdrawal from fishing, and retraining.

The changes to the fisheries promotion regime, however, have been relatively unsuccessful. As yet, fishing capacity has not been significantly reduced. One reason for the lack of success is that the cutbacks to the number of vessels were superseded by increases in the efficiency of vessels and gear. Furthermore, some member states also insisted on maintaining national subsidy schemes (e.g., fuel subsidies). Fishermen have also developed ways to take advantage of loopholes in the law on capacity management.

The EC has instituted the full range of fisheries management measures, including TACs, individual quotas, effort limitations, technical restrictions, and capacity control. Particularly important in this regard are TACs, which are fixed annually by the Council. These limits are established for specific areas and fish species based on recommendations from ICES, a proposal from the Commission, and comments from advisory bodies and the public. The overall TAC is then allocated to member states based on a grandfathering scheme, which significantly favours traditional fishing countries like Spain and France. The member states break down their national quota into individual quotas and allocate them to fishermen. This is also often done on the basis of how quotas were allocated in the past. In some member states, individual quotas are tradable, and it is now being debated whether tradability should be introduced as an EC-wide obligatory concept.

Although the Fisheries Regulation requires that the Council consider scientific advice and take a precautionary approach when setting TACs, this has often not been respected in practice. In 2007, for instance, only 29 out of 126 TACs were based on full assessment and forecasting. The Council often gives priority to economic concerns over fish resource preservation. Another flaw of the system is that there is little incentive to reduce the catch below TAC levels. For instance, ‘quota hopping’ allows foreign fishermen to apply for individual quotas in other member states, which might otherwise not be used. While this accords with the EC principles of free movement of workers and freedom of services and establishment, it is detrimental to the survival of the resource. A third problem is that quotas tend to encourage a ‘race to fish’ and discards of under-sized fish.

Effort limitations have been introduced for specific marine areas, such as the Western Waters, the Irish Box and the Baltic Sea. ‘Effort’ is defined as the product of the capacity and activity of a vessel. Total allowable effort refers to the established overall quota that is set for a given area. This overall quota further breaks down into individual effort quotas, expressed in a particular vessel’s allowed days at sea. Like TACs, due to political pressure, effort limitations have been set at unsustainable levels. They have also been difficult to monitor because, for instance, engine power can be manipulated.

EC law requires that fishing vessels be licensed. The licence certifies that the vessel fulfils certain technical requirements, has a certain capacity and can be used for catching certain fish species. It does not specify gear, effort and catch restrictions, which are controlled by separate instruments. Special fishing licences must be obtained for fishing in non-EU countries. They are granted depending on whether a bilateral fishing agreement has been concluded between the EC and the third country.

The EC has introduced a broad array of technical measures on fishing gear, zones and periods of allowed fishing, and minimum sizes of individual fish species, which are based on the Fisheries Regulation but specified by executive rules. The regional seas are each addressed by a specific set of measures contained in an

area-specific Council regulation. The regulations are frequently amended in response to changing conditions. For instance, the regulation on the North-East Atlantic and North Sea has already been revised 95 times. This regulation sets out bans of certain nets, minimum mesh sizes for nets in specified fisheries, an allowed ratio of target and non-target species, minimum sizes of fish allowed to be caught, obligations to return undersized fish into the seas, and no-take zones and periods for certain fish species. Certain techniques are generally prohibited, such as the use of explosives and poison, and beam trawls longer than 24 m.

Technical measures are generally ineffective. For instance, mesh sizes are considered to be too small (120 mm for cod as compared to 165–179 mm in the USA) and infringements are easily concealed from controls.

In summary, EC management measures could be tightened by instituting recovery plans for overexploited stocks, and management plans for stocks in danger of surpassing safe biological limits. Such plans are meant to allow for step-wise action within a multi-annual perspective. However, as the Council has retained the responsibility for approving the plans, the decision making is still highly politicized and thus influenced by concerns other than the sustainable use of fish resources. In addition to recovery and management areas, marine protected areas for the protection of rare species and habitats, the so-called Natura 2000 network, have been established based on nature protection legislation. Although framed by EC law, the designation and management of Natura 2000 sites is largely a competence of the member states. This creates friction with the EC's exclusive fisheries competence. It is a matter of controversy whether the member states can restrict fishing in the Natura 2000 sites, or whether the EC has exclusive competence to manage fisheries even within these areas.

The Fisheries Regulation and other executive rules also address enforcement issues. Member states are to ensure compliance with the law. A vessel monitoring system (VMS) was installed to track vessels on their fishing routes. Vessels exceeding 15 m length must carry appropriate technical equipment for satellite reporting. VMS, however, cannot monitor the type and quantity

of the catch. Spot inspections are therefore essential. Compulsory reporting is an additional tool to secure compliance. Each vessel over 10 m must report effective catches in the logbook and (where applicable) effort spent. Data are collected in the Catch Registration System, which serves to control the observance of the catch quota. In order to prevent cheating with catch reporting, the landing of the catch is also monitored. Fishermen must submit landing declarations to the competent authorities at the place of landing. To prevent collusion between sellers and buyers, the buyer must record purchases in sales notes and take-over notes. Fish that is not sold in the port of landing but transported elsewhere must be recorded in a transport document. All information collected on sales, take-over and transport is to be submitted to the competent national authorities.

EU law only generally addresses the issue of the transshipment of fish in the EU's EEZ and national legislation in this area is also lacking, creating an obvious gap in the regulatory regime for catch control.

The member states exercise flag-state control over fishing by Community vessels in third-country waters through licensing schemes, as described above, and by recording requirements concerning catch, landings in EC or third-country ports, and transshipment. To a certain extent the international Regional Fisheries Commissions have adopted TACs for high-seas areas under their jurisdiction; the EC also fixes TACs for high-seas fishing vessels flying EC member state flags.

The EU grants catch quotas for non-EU countries only to Norway, Iceland and the Faeroe Islands. Vessels flying these flags must obtain a fishing licence and record their catch.

EC fisheries law is applicable both in the territorial seas and the EEZs of member states. The coastal state has retained powers to manage fisheries in its territorial sea, within the framework of EC law. However, only very little room remains for such measures. One example of this is the crab fishery. As the EC does not set TACs for crab, the member states are free to legislate in this area. The management approach taken by national governments has been to allow local fishermen to self-regulate.

Assessing the law and practice of EU fisheries promotion and management, the following conclusions can be drawn:

- The quality of EC fisheries legislation is high. The EC has an exclusive competence in fisheries matters and clearly delimits which competences remain for the member states. There is a basic fisheries code, which establishes the relevant principles, instruments, procedures and institutional structures. However, the definition of the most important principle to apply to fisheries – the sustainable use of resources – is inadequate. Rather than setting fixed limits that correspond to reproductive levels, it adopts the ‘three pillars approach’, which seeks to balance competing economic, social and resource interests.
- The EC is an example of unsustainable promotion of fisheries, but it presents a case study on how to reorient failing promotional policies. In the early years, the EC heavily subsidized the building up of its fleet. Since 2000, however, subsidies have been reduced and redirected towards the sustainable use of resources. This change of policy has been modestly successful, however much more must be done to reduce fishing capacity.
- Promotion and management responsibilities in the EU are divided amongst numerous political and administrative bodies: the EC Council of Fisheries Ministers, the General Directorate of Fisheries and Maritime Affairs of the EC Commission, the Committee on Fisheries of the European Parliament, and the national fisheries ministries. This means that there is a chance of adapting economic interests to sustainable use of resources. In practice, however, politicized bodies like the

Council and the EP Committee have the ultimate authority, and they tend to favour economic interests. Therefore, the depoliticization of fisheries management is one option for reform. This could be achieved by giving the Commission or a relatively independent regulatory agency more decision-making powers. More easily available (and less liable to technocratic failure) is the option to open Council decisions to action brought by NGOs before the EC courts and thus measure the Council decisions against the substantive criteria of fisheries management.

- The fisheries management instruments that have been instituted by the EC and its member states are both comprehensive in scope and sufficiently precise. Such instruments include TAC systems, licensing schemes, effort limitations and technical measures. However, some important aspects of these measures, such as mesh sizes and bycatch, are still flawed. Even more deplorable is the practice of setting unsustainable TACs. It is suggested that the fixing of TACs should be more strictly bound to the precautionary principle and scientific criteria.
- EC law is also exemplary in its commitment to ensuring compliance. It has established a very sophisticated system of reporting on catch and landings. There are still issues with implementation and enforcement, but not at a level undermining the appropriateness of the instruments themselves.
- EC flag state control of (EC) vessels operating in the high seas and in the EEZs of southern countries is weak in many respects.

III. A Legal Clinic for Fisheries

In the case studies summarized above, the analysis and conclusions were varied. The methodology employed to develop the legal clinic shall now be systematically laid out. This will be done (1) by summarizing the key

steps to be taken and topics to be covered, and (2) by elaborating on the topics covered by developing rules of good practice in fisheries management.

1. The methodology of a legal clinic

(1) *Symptom analysis*

As a first step, the state of fisheries must be analyzed with a view to identifying potential overfishing, including:

- Development of stocks;
- Development of catch;
- Development of catch per unit;
- Development of fishing capacity; and
- Development of relevant ecosystems.

(2) *Checklist of potential managerial failure*

The ensuing legal analysis should have the following topics in mind:

- Is the law taken seriously or does it only have symbolic value?
- Are the binding rules of international fisheries law transposed and applicable in the given country?
- Does the constitution contain rules relevant for fisheries, such as obligations on environmental protection, sustainable use of natural resources, and precaution? How are these duties balanced by the rights of free enterprise and property protection?
- What is the formal quality of the relevant laws?
 - Is there a specific law on fisheries?
 - Is the legal language precise and in line with general legal doctrine?
 - Does the law cover all necessary elements of fisheries management, i.e., does it set out:
 - principles;

- instruments of promotion (if any);
- instruments of management;
- structures and competences of institutions;
- delegation of powers for specified purposes;
- requirements of transparency and participation;
- powers to investigate and monitor;
- definition of infringements and sanctions; and
- access to courts for affected parties and NGOs?
- Was the law properly promulgated and disseminated?
- Is the law's relationship (hierarchy, *lex specialis*) with other laws unambiguous?
- Is the law compatible with constitutional requirements?
- Is the law compatible with principles of international law? If not, with what effect?
- What is the formal quality and content of any sublegal norms?
 - Are they based on and consistent with higher-ranking law?
 - Are they compatible with other sublegal norms?
 - Are they appropriately promulgated and disseminated?
 - Do they impose sanctions for infringements?
- What material standards guide the application of fisheries management instruments?
 - Are fish resources defined as a common good?
 - How is the sustainable use of fish resources defined?
 - Are ecosystem effects to be considered?
 - Is the precautionary principle to be applied?
 - Do measures have to be based on best available scientific knowledge?

- How are the responsible institutions shaped?
 - Is the allocation of competences to legislate and administer between the different levels of government clearly defined? Are overlaps excluded?
 - Is the environment ministry involved in decision making on fisheries management?
 - Does the law provide for participation of fishermen's associations and environmental NGOs?
 - Have self-regulatory structures been established?
 - Is transparency of decision making ensured?
- Is distributional justice ensured? For instance:
 - Are inshore areas reserved for artisanal fishing?
 - Is fishing in the EEZ 'nationalized' (e.g., by imposing landing and processing requirements or reserving the EEZ to the national fleet)?
 - Are quota for individual effort and catch allocated according to fair criteria? Is tradability of quota qualified by distributional conditions?
- What informational resources are provided? What about:
 - research on stocks and ecosystems?
 - monitoring of catch in the territorial sea and EEZ, of landings, of transshipments, and of fishing by foreigners?
 - monitoring of fishing capacity (vessels, gear)?
 - data banks?
 - access of stakeholders and the public to fisheries-related information?
- What promotional measures are taken?
 - In the case of undercapacity: Are promotion policies in line with sustainable catch limits?
 - In the case of overcapacity: Are promotion policies reoriented towards reducing capacity (phasing out subsidies, early retirement, retraining)?
- What management tools are applied? What about:
 - Catch limitation: scientific basis and precaution, link to safe biological limits, criteria of allocation of catch quotas/individual quotas;
 - Effort limitation: interrelation with catch limitation, link to safe biological limits;
 - Technical measures: prohibition of destructive methods, selectivity of nets, reduction of bycatch, etc.;
 - Marine protected areas (pollution prevention, nature protection, recovery and special management zones);
 - Time and area limitations protecting spawning and nursery; and
 - Organization: bottom-up in the coastal zone, participatory top-down in the EEZ and high seas?
- How effective are the surveillance and enforcement mechanisms?
 - Does the surveillance cover the strategic topics (catch, bycatch, landing, transshipment, foreign catch)?
 - Do fishermen, buyers and port authorities have recording duties? Are they necessary, reliable and cost-effective?
 - What safeguards are in place against corruption?
 - How qualified is the inspection personnel? What technical equipment is available?
 - Are legal remedies available for:
 - affected parties?
 - public interest groups?
- Is there flag state control over fisheries in the high seas and foreign EEZs, e.g.,
 - participation in regional fisheries commissions;
 - licensing of vessels;
 - catch limitations;
 - control of landings; and
 - vessel monitoring systems?
- Is there port state control of landings from vessels flying foreign flags and fishing in high seas and foreign EEZs?

2. Rules of good practice in fisheries management

Based on the in-depth study of different cases, more general observations can be made on the relationship between different management approaches and fishing behaviours and thus the condition of fish resources in different areas. While these observations cannot claim to provide tested hypotheses that reveal the correlations between management measures and their effects, they can nonetheless be framed as rules of best practices in sustainable management. I will sketch out 12 of them, although more could easily be imagined.

(1) On the role of law: “Take the law seriously; create cultural, institutional and economic conditions for its implementation”

It is a truism but nevertheless to be stressed that effective management not only requires good laws, but also societal conditions that support implementation. The infrastructure that underpins implementation of laws is comprised of cultural, administrative and economic elements, which will be described further below.

Firstly, it is important to know if in a given country there is a culture of taking the law seriously. Where the law is not appreciated as the outcome of a legitimized democratic procedure but rather understood as a mere command of ‘the state’, people will attempt to circumvent it. Where the law is regarded as a mere symbol, it will be ignored and remain ineffectual. Even worse, it might even serve to disguise governmental mismanagement and to excuse inaction. In a bargaining culture, the law can function as a bargaining chip allowing, for instance, the purchase of catch quota for a bribe but will ultimately lead to the collapse of the resource.

Secondly, as fisheries management heavily relies on implementation by administrative bodies, adequate administrative capacity must be available. Where there is insufficient political will to provide qualified and adequately remunerated personnel as well as state-of-the-art equipment, the law will be a paper tiger and become obsolete.

Finally, and probably most importantly, much of the law’s application in practice depends on the economic circumstances of its addressees. If there is overcapacity of vessels and employment, the fisheries sector will use all of its means to secure or even expand catch activities. Industry members will make covert or open attempts to influence scientists when they assess stocks, politicians when they take restrictive decisions, and administrators when they enforce the law. As overcapacity is often a result of incoherent promotional policies, the answer lies in the adjustment of promotional policies – a question to be addressed later on.

In addition to overcapacity, high fishing pressure also results from an overdemand for fish. High demand, especially from industrialized countries, is a powerful incentive for unsustainable fishing. The crucial question is how to alter the use of fish. As a first step, fish must be considered a high-level product reserved for food; the use as a low-level product for animal feed must be phased out. This would reduce market demand, and discourage overfishing. Moreover, we need to recast the popular notion of the egocentric consumer as an ‘enlightened consumer’, i.e., one who buys fish not only because of taste and price but also according to ecological criteria.

Information on legal culture, administrative infrastructure, and fishing pressure allow for a preliminary assessment of whether a given country ought to focus on reforming the law itself, or instead work on strategies to improve the conditions of its implementation.

(2) On adherence to international law: “Ensure national respect for the rules of international law”

International law provides a wealth of rules relevant to fisheries management.¹³ On one hand, these rules delineate the areas and scope of exclusive rights of coastal states (i.e., the territorial sea, exclusive economic zone and continental shelf) as well as areas of free access

¹³ For an innovative elaboration of the international law requirements for fisheries see Markowski, M., ‘Allocation and management of fisheries resources: an in-depth legal analysis of instruments in comparative perspective’, available at <http://www.incofish.org/Workpackages/WP10/WP10ObjDelMiles.php?WP=Legal%20instruments>. See also the abbreviated version of the study (‘The international legal standard

(i.e., the high seas). On the other hand, for fisheries located in the EEZs and high seas they require that states take measures, 'taking account of the best scientific evidence available', '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'.¹⁴ In doing so, states must apply the precautionary approach, which, if not yet a rule of international customary law, has force as a general principle of international law¹⁵ within the meaning of Art. 38(1)(c) of the ICJ Statute.¹⁶ In addition, international commissions set up by regional agreements on the basis of Articles 63, 64 and 118 of UNCLOS may agree on total allowable catch and fishing techniques for the high seas or EEZ and develop regulatory regimes for migratory and straddling species.

The relationship between national law and international law is important to fisheries management.¹⁷ International provisions have more national impact in countries that adopt the 'monist' concept, which makes international law directly applicable by national authorities where national law leaves a matter unregulated. Under the monist view, international law might even rank higher than national law, setting aside any national law that is incompatible with international requirements.¹⁸ For instance, if under national law the Fisheries Act does not regulate the inspection of vessels flying foreign flags, inspectors' powers can be based on the relevant provisions of the Straddling Stocks Agreement.¹⁹ The master of the ship could not oppose the boarding of an inspector on the ground that there is no legal basis for an inspection, and inspectors could not use this argument as an excuse for inaction.

By contrast, states adopting the 'dualist' concept require that international law is incorporated into national law by an express national legal act before it

comes into force. This is a rejection of the direct application of international law by national authorities. However, even under this 'dualist' approach, the so-called self-executing norms of international law are directly applicable as national law. A rule of international law is self-executing when it is unconditional, precise and addressed at individuals rather than states. These same criteria are often also required as preconditions of direct application by court jurisprudence in monist states. Therefore, there is a convergence in the approach of monist and dualist states regarding the direct applicability of international rules.

In conclusion, there is an important body of directly applicable general as well as specific international standards of sustainable use. As yet, national authorities in charge of managing fisheries have barely explored this potential. This is particularly relevant to states with gaps in their national fisheries law. For instance, if the law does not provide criteria for licensing the catch of tuna, such criteria can be derived from the principles contained in the Straddling Stocks Agreement. An application for a fishing licence ought to be rejected on this ground if the stock is already overfished.

In more practical terms, the simplest way to circumvent the problem of the direct applicability of international law is to regulate the issue in the relevant national fisheries law. For instance, in relation to TACs concluded by International Fisheries Commissions for high-seas areas, a state that is party to the relevant convention may provide in its fisheries code that the TACs are directly binding on national authorities issuing individual quotas to fishing vessels. In doctrinal terms, this reference incorporates an international decision into national law.

for sustainable EEZ fisheries management') in this volume. For a historical account of international fisheries law, see Yturriaga, J.A. (1997). *The International Regime of Fisheries. From UNCLOS 1982 to the Presential Sea*. The Hague, Netherlands: Martinus Nijhoff.

14 UNCLOS Articles 61 para 2 and 119 para 1a.

15 Markowski, *supra*, note 13. In the 1995 Convention on Straddling and Highly Migratory Fish Stocks the precautionary approach was established as a provision of conventional law binding only (1) between contracting parties and (2) on straddling and migratory stocks, see Art. 5 lit. c), Art. 6 of the Fish Stocks Agreement. However, as a general principle of law, the precautionary principle goes beyond these treaty provisions, addressing all states and extending to all species. More reticent regarding the binding character of precaution, Proelß, A. (2004). *Meeresschutz im Völker- und Europarecht. Das Beispiel des Nordostatlantiks*, pp.81-84. Berlin, Germany: Duncker & Humblot.

16 On the three sources see Art. 38(1)(a)-(c) of the Statute on the International Court of Justice.

17 For a rigorous study of testing national fisheries law in relation to international standards, see Markowski, *supra*, note 13.

18 The question of rank is differently answered by different national constitutions.

19 See Art. 22 para 2: 'The duly authorized inspectors of an inspecting State shall have the authority to inspect the vessel, its licence, gear,

More difficult is the situation where national law regulates a matter but contradicts (possibly more ambitious) international standards. In this case, the direct applicability of international law (and the consequent setting aside of national law) depends on whether the national constitution assigns higher rank to international law. EC law, for instance, does so.²⁰

In general, it must be kept in mind that international law normally establishes minimum requirements, allowing states ample room to be more restrictive. Unfortunately, states often take an opposite view, regarding international law as a yardstick for maximum resource protection.

(3) *On the constitutional status of fish resources: 'Explore if the protection of resources is a constitutional obligation of the state and of citizens'*

Some national constitutions – in our case study, Brazil and Mexico – consider marine fish resources (or the seas hosting them) a patrimony, the preservation of which is a duty of the state. The constitutions of other countries, in our sample Indonesia, Namibia and the EC, regard fish resources as a common good – a different approach with a similar outcome. The legal obligation of the state to protect the patrimony or common good as set out in the constitution is so vague that it is of little practical significance. Nonetheless, such provisions may serve to guide the courts and administrative bodies in interpreting and applying the law.

Constitutions formulated at a time when environmental protection was high on the political agenda often contain the principle of sustainability. For instance, the Namibian constitution states that the sustainable use of resources should guide governmental action. The true impact of such a provision depends on how it is defined. A robust interpretation of sustainability would place a greater priority on the survival of stocks over economic and social concerns;

a weaker definition however allows for a more open balancing of the three pillars. A survey of the opinions of national courts and scholars would be necessary to determine the content of this constitutional duty.²¹

Constitutions often contain guarantees of private property and freedom of enterprise, which countervail the duty to protect resources. The status of fish resources as a common good means there is no *per se* right of individuals to claim property rights to them. The meaning of the right of free enterprise can also not be interpreted to extend to the exploitation of fish resources. This can be different if a fisherman or fishing company has established a business. To restrict fishing where rights have been vested does infringe basic rights of property and business. Nonetheless, restrictions imposed for reasons of resource protection could still be justified as long as they are proportional.

Another constitutional principle is that of the equality of persons. It requires governments to treat equal conditions equally and unequal conditions differently, provided there are not reasonable grounds for acting otherwise. For instance, in principle the equal treatment principle would be breached if a subsidies scheme was only aimed at industrial and not at artisanal fisheries as well. Inversely, it would be *prima facie* unequal treatment if the inshore areas were reserved for artisanal fishers. Such action could however be justified, for example, on the basis of the greater poverty of small fishers, or the more detrimental fishing gear of large vessels.²²

Finally, some national constitutions (e.g., Namibia and Indonesia) require the state to respect indigenous customary law. This means that a regulation that overrules customary law without justification may be unconstitutional.

In conclusion, it appears that fisheries management is still out of sync with constitutional principles. This is particularly true if national legislation contains unsustainable or discriminatory rules.

equipment, records, facilities, fish and fish products and any relevant documents necessary to verify compliance with the relevant conservation and management measures'.

20 EC Treaty Art. 300 para 7.

21 See more on this topic below.

22 For a case study see the reasoning of the court concerning the Arvoredo Biological Marine Reserve in Brazil, Figueredo, *supra*, note 9.

(4) *On the formal quality of law: ‘Design a Fisheries Code that is well-defined, conclusive and comprehensive’*

Legislation represents a distillation of political decisions. The more precise the law’s language, the more clarity for administrative bodies (what to do or what to leave), and the more certainty for the individual investing labour and capital. Administrative officials and economic stakeholders are more apt to comply with a comprehensive law that covers most issues relevant to fisheries because it will facilitate its understanding and thus enhance the willingness to comply (or the chances of successful legal recourse).

Fisheries laws often begin with statements of goals and general principles. These are not to be understood as definite rules, but instead they guide decision-making bodies in the exercise of their discretion. Although such provisions do not create legally binding obligations, it is still important that they cover the important issues and are carefully defined.

Fisheries laws often confine themselves to establishing administrative bodies and allocating competences to them. This means that they concentrate on the legal relationships within government. An extreme example in this regard is Brazil.²³ Although it is important to establish clear boundaries between the different branches of government, the laws should go further and elaborate on the legal relationships between government and the individual. The rule of law demands that the law informs citizens about their precise rights and duties.

For instance, the need to obtain a licence for a certain activity is an encroachment on individual freedoms and should therefore be introduced by parliamentary law rather than by administrative decree. Moreover, the law should specify the conditions for granting a licence and its terms. Often, the aim and criteria of the licence requirement for vessels are unclear: is licensing only a way to register the ship; or

shall it ensure that safety and gear and equipment requirements are met; or shall it control vessel size and numbers in order to limit catch quantities? If the conditions for granting the licence are not specified, administrative bodies have broad discretion, which could result in arbitrariness and corruption.

The rule of law is best served by precise laws. This will contribute to the legitimacy of fisheries management and hence the willingness of the individual fishermen to comply.

(5) *On basic rules: ‘Lay down basic rules guiding administrative action, including the sustainable use of resources, precaution, and ecosystem protection’*

When setting down principles and criteria, fisheries legislation should strive for a high level of protection of fish resources. If the law is not ambitious in this respect, one can hardly be more in regard to the implementation and enforcement of the law.

For the sake of clear terminology, principles are to be distinguished from rules. Principles are general propositions that can be weighed against opposing propositions and under certain circumstances overruled by them. By contrast, rules are conclusive and cannot be set aside by opposing propositions.²⁴ Fisheries law should include both. Principles guide the overall direction of administrative action. Rules direct administrative bodies in concrete cases, for instance, when issuing licences or introducing subordinate legislation on management measures.

A priority for Fisheries Laws is the proper phrasing of the principle or – even better – the rule of sustainable use of fish resources. There are two options for a definition of sustainability:²⁵ a weaker one which requires the balancing of ecological, economic and social interests, and a stronger one, which in principle allows for balancing, but which sets a clear upper limit if the reproduction of living organisms is endangered.

23 Ibid.

24 They may, however, be so constructed that the (unequivocal) rule commands the balancing of different interests. The weighing of principles is then incorporated into the rule. On the relevant terminology see Winter, G. (2006). ‘The Legal Nature of Environmental Principles’. In: Winter, G. (Ed.) *Multilevel Governance of Global Environmental Change*, pp.587-604, at 592. Cambridge, UK: Cambridge University Press.

25 See Winter, G. (2008). ‘A Fundament and Two Pillars. The Concept of Sustainable Development 20 Years after the Brundtland Report’. In: Bugge, H.C. and Voigt, C. (Eds) *Sustainable Development in National and International Law*. Groningen, Netherlands: Europa Law Publishing.

Many national fisheries laws that include the principle of sustainability do not define it. Commonly, the weak version of sustainability is advocated. However, effective fisheries management requires the strong version. Some laws such as the EC regulation on fisheries oscillate between these two poles. While the definition of 'sustainable exploitation' refers to the safe biological limits of stocks, the rule guiding administrative practice introduces the possibility of balancing biological limits with economic and social concerns.²⁶ This is a major flaw of the regulation; but fisheries law in other states also does not give priority to stock conservation over economic or social concerns, even though the economy and society are more flexible than fish stocks and ecosystems when it comes to finding other means of subsistence.

A second principle relevant to fisheries legislation is the precautionary principle. It helps to guide the fisheries assessment process where reliable data is lacking and modelling is undeveloped. Given the somewhat uncertain status of the precautionary approach in international and constitutional law, it is advisable that the national fisheries laws decide whether the principle shall be respected or not.

There are different options for a definition of the precautionary principle,²⁷ the minimum being that in situations of uncertainty and potentially serious harm, government should not wait for definite proof of harm.²⁸ This definition of the principle has caused ICES to introduce precautionary reference levels for biomass and fishing mortality below the critical limit reference levels.²⁹ A more ambitious phrasing would include situations where the harm is not (yet) serious, but preventative action should nevertheless be taken as a precautionary policy. In a third version, the precautionary reference level could be interpreted as a level mitigating a reduction in stocks (non-serious damage) well before collapse (serious damage).³⁰

The third most important principle is the protection of ecosystems. Fish are both a contributor to and a beneficiary of the ecosystem. This means that overfishing has side effects, transforming the ecosystem into a state unfavourable for the recovery of stocks. Even imposing a fishing moratorium does not help rebuild stock in such cases. While this is common knowledge in fish biology, ecosystem protection has not yet found its way into many national laws. National law should incorporate the principle of ecosystem protection in order to better guide stock assessments and management.

(6) *On institutions: 'Clearly delimit and integrate competences of competing administrative bodies'*

The effectiveness of fisheries management measures also depends on the structures and functions of the administrative bodies in charge of subordinate rule making, decisions in individual cases, and monitoring and surveillance. In general, tasks and structures should fit with each other. There are three dimensions to the proper allocation of competences: horizontal, diagonal and vertical.

(a) *The horizontal dimension: using and protecting the resource*

A major task of fisheries management is to integrate diverging interests, in particular, the interests of fishermen and the fishing industry, on the one hand, and resource preservation on the other. Two models of coordination are currently in use: opposition or integration. In principle, neither is preferable. Both have failed, but either could function well, if certain criteria are met.

In the 'opposition' model, two separate administrative structures with opposing political cultures are responsible for fisheries management: one

26 Consider Art. 2 para 1: 'The Common Fisheries Policy shall ensure exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions'. For an interpretation of this clause in the sense of the strong version see Markus, *supra*, note 11.

27 Markowski, *supra*, note 13.

28 See definition in Art. 5 para f) of the Straddling Stocks Agreement.

29 Report of the ICES Advisory Committee on Fishery Management, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems, 2007, available at <http://www.ices.dk/products/icesadvice/2007/ICES%20ADVICE%202007%20Book%201.pdf>.

30 Unfortunately, EC Regulation No 2371/2002 in Articles 5 para 3 and 6 para 3 on recovery and management plans only refers to limits, not to precautionary reference points. This is in contradiction to the boastful promise in Art. 2 para 2 that the precautionary approach shall be applied.

body for fisheries, sometimes combined with agriculture and economic management in general; and one for environmental protection. In Brazil, for instance, the fisheries ministry (SEAP) is in charge of promoting fisheries, while sustainability is the responsibility of the environmental ministry and its agency, the IBAMA. It appears that this is not an adequate division of powers because it leads to conflicting measures. For example, the SEAP may issue plenty of fishing licences, but the IBAMA may restrict catch to levels so low that the fishing licences are effectively void. This does not mean that the opposition model could never be effective. It could be improved if the competences are properly coordinated, in particular, if mutual participation and consent in the decision making is required. For instance, the SEAP could be required to have the IBAMA's consent for its licensing policy, and the IBAMA would need the SEAP's consent for its TAC policy.

In the integration model, both the promotional and limitational functions belong to a single ministry. Ideally, the ministry's structure integrates economic and environmental priorities with a view to educating those with economic interests to adopt sustainable practices. This would presuppose that the ministry disposes of a well-equipped department or subsidiary body committed to fish stock and ecosystem monitoring and assessment. Often this is not the case. A bad example of this is the EC. The core competences in fisheries management lie with the Council of Fisheries Ministers, a body inclined to favour resource exploitation. It can act without the consent of the Council of Environmental Ministers.

The integration model can be radicalized to favour sustainable policies, if the entire responsibility for fisheries is handed over to the environment ministry. This variant would be based on a conception of fisheries as part of the marine ecosystem, and it would acknowledge the fact that fisheries ministries have largely failed at sustainable management. Thus far, this model has only been practised in relation to marine protected areas in a number of states, including Brazil and Kenya; but not in the EC, where the Council of Fisheries Ministers and the Commission claim exclusive competence for fisheries, even in relation to nature protection areas.

(b) The diagonal dimension: politics and expert administration

There are many fundamental questions of a political nature, which must be decided by institutions embedded in political debate which, in most countries, is the parliament. These include, for instance, whether fisheries should be subsidized, fish resources in the EEZ should be reserved for the country's own fleet, industrial fishing should be excluded from the coastal zone, destructive gear should be forbidden, the landing of catch should be limited to the country's own ports, levies on licences should be charged, etc.

There are, however, other issues of a technical nature that should be based on scientific findings. This is the case with all regulations directly related to the protection of the reproduction of the resource, such as the determination of TAC levels and restrictions of effort and gear. Decision making on these matters should be depoliticized, and shifted to independent bodies that are removed from short-term political interests. Once again, the EC is a bad example in this regard: the Council of Fisheries Ministers, which is in charge of setting TACs, is a highly politicized body which favours economic and social interests in fisheries over resource and ecosystem protection. The preferred approach would be to entrust the power to set TACs to an independent regulatory agency. Of course the fishing industry will exert pressure on this body to act in accordance with its interests. Special interest lobbying can degenerate into what political scientists call the 'capture of regulatory agencies'. However, a careful organization of the institution and its procedures helps draw the line between the legitimate right to be heard and illegitimate ascendancy.

(c) The vertical dimension: central and decentralized governance

In federal states, the competences for legislation and the implementation of laws must be distributed between the different levels of government. Although one might consider fisheries as a traditional responsibility of lower levels of government, the power to legislate is generally concentrated at the central level in many federal states. This is the case in Brazil, Mexico, Indonesia and (if one regards it as a federation) the EU. In these states (with the partial exception of Indonesia), executive rule making belongs to the central

government. In some states, even the administration of individual cases (e.g., issuing of licences) and surveillance activities belong to the central government

(e.g., Brazil and Mexico). This is not the case in the EU, where licensing and surveillance is the responsibility of the member states (see Table 1).

Table 1: Distribution of competences in different states

	Legislation	Subordinate rule making	Administration	Surveillance
Central government	BR, EAK, EU, MEX, NAM, RI	BR, EAK, EU, MEX, NAM, RI	BR, EAK, MEX, NAM, RI	BR, EAK, MEX, NAM, RI
State government		RI	EU, RI	BR, MEX, EU, RI

Key: BR=Brazil; EAK=Kenya; EU= European Union; MEX=Mexico; NAM=Namibia; RI=Republic of Indonesia

There is no single answer as to how competences should be divided between the different levels of government. The choice depends heavily on institutional traditions. While in principle the lower levels of government will have a better knowledge of local conditions and better access to stakeholder interests, it may nevertheless be susceptible to pressure by powerful industry stakeholders. Conversely, while the central government may be less likely to give in to local pressure, its knowledge and accessibility are limited. Central agencies in charge of fisheries should create local branches to be closer to local concerns. If local agencies are competent, they should be supervised by central agencies.

(7) *On distributional justice: ‘Support small-scale fisheries; give newcomers a chance; allow for a limited nationalization of fisheries’*

Within the limits of sustainable use of resources (in the strong sense of the term), there is some room to treat the various fisheries sectors differently. For instance, the interests of small-scale fisheries could have priority over industrial fisheries (a), new entrants to the industry may be discriminated against in favour of vested rights (b), and a state might favour certain foreign nations over others (c).

(a) *Distribution between large and small-scale fisheries*

Terminology

When addressing issues of distributional justice, precise

terminology is important. The law should precisely identify the groups it intends to target with its measures. Many terms – such as artisanal, traditional, indigenous, community-based, small-scale, large-scale, industrial, etc. – are understood differently. Therefore, legislators should choose their terminology carefully and define it accordingly.

Definitions should not be arbitrary; they must be informed by the regulatory goals. A country may decide to favour indigenous communities by freeing them from authorization requirements, as in Indonesia and Kenya. However, ‘indigenous’ should be defined. For instance, the state may only wish to grant this benefit to communities with customary structures of self-governance. As another example, the state may decide to exert tighter control over communities of artisanal fishermen who, although having settled at the coast for a long time, have remained individualized and competitive (e.g., Brazilian coastal fishermen who in general are Portuguese immigrants). By contrast, when reserving coastal areas for fishing by coastal communities, the state might choose to define the group of beneficiaries more broadly.

Reserving coastal zones for local communities

Many states have prohibited industrial fishers from fishing in their inshore seas. For instance, the competence to reserve fishing in waters up to 12 nm to ‘fishing vessels that traditionally fish in those waters from ports on the adjacent coasts’ has been re-delegated by the EU to its Member States.³¹ This appears to be

31 Art. 17(2) of Regulation 2371/02. See Markus, *supra*, note 11.

reasonable in terms of supporting local coastal economies. At the same time, this measure helps to protect the sensitive coastal ecosystems from environmentally damaging industrial fishing techniques.³² It can also be expected that local communities have greater experience, skill and social control techniques to ensure the sustainable use of resources.³³

Subsidizing small-scale fisheries

Subsidizing small-scale fisheries is another type of redistributional measure. Given the overall trend in large-scale fisheries, mainly due to gains in productivity and economies of large credits, small credit lines are important if the small fisheries sector is to be kept alive and flourishing. Such redistributional schemes can be combined with goals of resource preservation. For instance, in Kenya it was felt that economic constraints have forced fishermen into the lagoons and near shore where resources are already overexploited. This is partially because they are unable to invest in more seaworthy vessels due to the lack of credit.³⁴ A good solution was found in the Indonesian programme 'Economic Empowerment for Coastal Communities', which provides small fishermen with micro-credits via a special 'Credit Bank for Coastal Communities'.³⁵

(b) *Distribution among historical participants and newcomers*

Distributional justice is also a concern in matters of allocation and transferability of individual fishing rights.

A country establishing total allowable catch may decide to grant free fishing rights until the TAC is exhausted. This 'first come first served' approach initiates a race to fish and advantages larger vessels over smaller ones.³⁶ Therefore, the allocation of individual

fishing rights is a more just solution. To achieve this, different criteria can be applied.³⁷

In many systems, historical fishing is one criterion. 'Grandfathering' however excludes new entrants to the industry. It also creates inefficiency because, depending on the fish stock, the individual quota may be too small for a shipowner to use his or her vessel profitably. Thus, the vessel remains in the harbour unused for long periods of time but still creates costs.

In order to reduce inefficiencies, some countries allow individual quotas (IQs) to be transferred. This is the approach taken in the Netherlands, but also informally in other EU Member States.³⁸ As a consequence, after a short time larger companies will have bought up most of the individual tradable quota (ITQ) from smaller shipowners.³⁹

Benchmarking, allocating IQs according to certain material criteria, is a preferable system. A certain share of IQs may be reserved in this system for small-scale fisheries that are capable of operating profitably. Other criteria may be related to the environmental performance of vessels and gear.

(c) *Distribution among nations*

The issue of how fish resources should be allocated among states could also raise questions of distributional justice. UNCLOS has set standards for the different maritime areas: resources in the territorial sea are under the full sovereignty of the coastal states; resources in the EEZ also belong to the coastal state unless the coastal state is not capable of exploiting them (in which case it must allow access to third states);⁴⁰ resources in the high seas are free for all. However, almost all high-seas areas are now subject to a regional fisheries organization that sets TACs and allocates them to

32 Cf. Reason (14) of Regulation 2371/02. Markus, *ibid*.

33 Collet, S. (1998). 'The Communitarisation of Coastal Resources or the Common Ownership of Fish Resources in Europe: the Future for Coastal Fishing Societies in 2002'. In: Symes, D. (Ed.) *Property Rights and Regulatory Systems in Fisheries*, pp.165-174. Oxford, UK: Blackwell.

34 Kamau et al., *supra*, note 6.

35 Laode, *supra*, note 5.

36 See on basic differences between open access and a rights-based approach the contributions in Shotton, R. (2000). (Ed.) *Use of Property Rights in Fisheries Management*. FAO Fisheries Technical Papers 404/1 and 2. Rome, Italy: FAO.

37 For an overview see OECD. (2006). *Using Market Mechanisms to Manage Fisheries*, pp.73-75. Paris, France: OECD.

38 Commission Communication Com (2007) 73 final on rights-based management tools in fisheries, pp.3-4; see Markus *ibid*.

39 In Peru, for instance, inefficiency remains even with ITQs. The right to receive an ITQ is conditional on a shipowner owning a vessel and keeping it ready to operate. It is not essential that he actually uses the vessel for fishing. He may sell the quota every year. However, keeping the vessel operative is costly. These costs are wasted because the vessel is not used for fishing.

40 See on the precise meaning of this obligation Markowski, *supra*, note 13.

fishing nations. These are mostly based on criteria of historical fishing.

A problem occurs in federal systems with several states bordering the sea: shall the state be allowed to reserve their territorial seas and even their EEZs for their inner-state shipowners, or shall fishing be federalized in the sense that every citizen is entitled to fish everywhere. In the EU, any EU citizen (natural person or legal person registered in the EU) is entitled to fish in all EU waters (territorial seas and EEZs inclusive) with two exceptions.

The first exception relates to the TAC scheme. Under this process, the first step is to break down the TAC into national quotas allocated to the Member States. This is done according to the principle of 'relative stability', which means that the member states receive the same percentage of the overall TAC every year.⁴¹ The stocks for which TACs are adopted are not necessarily located in the territorial sea or EEZ of the Member State which receives the quota. In the second step, the Member State quota is (re)distributed to individual fishermen. Only nationals are entitled to receive quota from their Member State.

In effect, the *per se* geographical 'nationality' is replaced by a (transitory) Europeanization and subsequent nationalization. In this author's opinion, the underlying concept of relative stability breaches considerations of distributional justice. For example, is it just that Spain and France continue to keep a greater share of EU fish resources, even though other Member States also desire a share? Why are these scarce and valuable resources still allocated for free? Why should privileged states not pay royalties for their exploitation rights?

The second exception concerns the territorial sea. As already stated, the competences to manage fisheries within the 12 nm limit were re-delegated to the member states. This implies a certain degree of re-nationalization. When issuing coastal fishing licences, member states may not openly exclude the nationals of other EU Member States, as this would be in breach of the principle of non-discrimination of EU citizens.

Nonetheless, coastal states may reserve coastal fishing for vessels located in their coastal harbours. This is a disadvantage to foreigners, but one that is tolerated because such indirect discrimination is justified in order to preserve the character of artisanal local fisheries. It is submitted that this solution is defensible in terms of distributional justice.

(8) *On research and monitoring: 'Establish independent research on stocks and ecosystems, separate stock assessment and decision making from management, provide for socio-legal research to support decision making'*

Knowledge about stocks and ecosystems is crucial for adequate fisheries management. Where coastal areas are reserved for indigenous fishing, knowledge passed down on traditional methods of observation may suffice. In all other cases, systematic scientific research is indispensable; this would include genuine investigation (e.g., representative sampling) and catch monitoring by keeping accurate and up-to-date records (e.g., logbooks, landing records, on-board observers, etc.).

Available data collected on fisheries are condensed into stock assessments. Although there is a plethora of literature on the methodology of stock assessment, administrative guidance papers summarising the state of the art are still widely unavailable. It is submitted that risk assessors should compile the existing methodological knowledge into administrative guidelines. This could also provide an opportunity to propose solutions on the controversial question of how to integrate the ecosystem approach into stock assessment.

Both research and stock assessment must be organized independently of any interference by politicians or private stakeholders. In risk analysis, assessment of the impact of fishing on an ecosystem and fish stocks should be separate from decision making on management measures. Also in terms of substantive criteria, research and stock assessment should be scientific and exclude considerations of the socio-economic effects of measures; these belong to the realm of management decision making.

⁴¹ Relative stability is based on the initial bargaining over MS shares in fish resources that took place in the year of Spain and Portugal's accession.

Socio-economic considerations are not exclusively value-laden and thus 'political'. They contain aspects that can be explored by social or economic scientific study. For example, one management option may be to improve enforcement of IQs by inspecting catch landings in ports. An empirical sociological study may provide information on the probability of inspectors becoming corrupt, which could help to eliminate such conditions. If a subsidy scheme is introduced for decommissioning vessels, an economic study may predict the risk of creating overcapacity and recommend measures to avoid this result. One recommendation is that fisheries research institutions consider appointing a team of social scientists in addition to their personnel of natural scientists.

(9) On promotional measures: 'Link subsidies to maximum sustainable yield; consider laying a charge on fish catch if resources are scarce'

Measures promoting fisheries are manifold. Two types shall be discussed here: (a) subsidies, and (b) royalty policies. We will not look at infrastructure such as the education of fishermen, harbour facilities, storage space and means of transportation.

(a) Subsidies

Subsidies are commonly defined as payments or tax deductions granted by the state to private parties for purposes of the public interest. They vary greatly and include funds directed at any of the following purposes:

- Capital costs for the purchase or modernization of vessels or gear;
- Variable costs such as energy consumption, the operation of the vessel, and the transportation of catch;
- Income in cases of unemployment, early retirement, re-education, temporary cessation of fishing, and compensation for fishing restrictions;

- As compensation and thus an incentive for the reduction of capacity by the scrapping or transfer of vessels; and
- As a support of prices of fish, e.g., payments for the withdrawal of fish from the market.⁴²

The following section will concentrate on subsidies for capital costs of vessels.

Coastal states possessing underexploited resources have often strived for building up a national fishing fleet in order to exploit their territorial seas and EEZs for their own benefit. This is permissible under international law,⁴³ and reasonable in political and economic terms. For states with small EEZs, however, it may be more profitable to grant access to third states in exchange for a share in the financial benefit.

Many states have enacted subsidy schemes in order to support the build-up of a national fleet. The example of Namibia, however, shows that state support is not always necessary. In that country, a national fleet grew up by itself without significant public subsidies.⁴⁴ However, if a state decides to set up a subsidy programme, it must be aware of the risk that it will build up fishing overcapacity. Apart from the fact that this would be a waste of public money, overcapacity creates political pressure exerted by shipowners to continue fishing allowances. It is difficult to counteract such pressure by imposing stringent management measures. Therefore, it is crucial to tie up subsidy programmes with capacity limitation.

The EC example shows how overcapacity was first built up and subsequently tackled by capacity-reducing measures.⁴⁵

In the 1970s and early 1980s, the EC allowed the Member States to grant subsidies for the purchase and improvement of fishing vessels and gear. It also provided subsidies from its own budget for the same

42 Cf. Markus, *supra*, note 11. On a general analysis of the variants of subsidies and their effects see OECD. (2006). *Financial Support to Fisheries. Implications for Sustainable Development*. Paris, France: OECD. The aspect stressed here – subsidies as a cause of overfishing – is surprisingly barely addressed in this otherwise comprehensive report.

43 UNCLOS Article 62. See for a precise interpretation of the surplus rule contained in this provision Markowski, *supra*, note 13.

44 Rukoro, *supra*, note 7.

45 Markus, *supra*, note 11.

purpose. This led to fishing overcapacity. Although the law provided that the building up of national fleets should remain within the limit of maximum sustainable yield, this was not taken seriously in practice.

In the late 1980s and early 1990s, subsidies were adjusted to avoid further enlargement, and even to encourage fleets to shrink in size. The EC developed multi-annual programmes directed at keeping capacity in line with fishing potential. Subsidies for new vessels were made conditional on the decommissioning of old vessels of corresponding capacity. Subsidies were also paid to scrap vessels or transfer them to third states, as well as for the temporary cessation of fishing. They were flanked by subsidies for early retirement of fishermen and re-education for other employment. In effect, however, these measures did not lead to a significantly decreased fleet. A decrease in the number of vessels, however, was often offset by gains in catch capacity resulting from more effective engines and gear. Another consequence of this policy was that the subsidized transfer of vessels to third countries caused overfishing in their EEZs and territorial seas due to insufficient surveillance.

In response to this failure the EC attempted a third approach in the first decade of the new millennium. Aid for constructing vessels was phased out; and support for modernizing fishing vessels was only granted for improvements in safety, working conditions, hygiene and product quality, and only on the condition that such aid did not increase catch capacity. Additional support was granted to vessel owners who were affected by restrictions in connection with fish recovery plans. Funds for the transfer of vessels to third countries were also phased out. Whether this redirection of funds will achieve its aims remains to be seen.

In summary, the example of the EC shows that if subsidies are available, a fleet is quickly built up, but that getting rid of this extra capacity is highly complicated in the long term.

(b) Royalty policies

Many countries levy fees for fishing licences. However, in most cases the fee is calculated to cover the administrative costs of fisheries management. Some countries, such as Namibia and Indonesia, charge levies that correspond to a share of the economic benefit gained by the fishermen.⁴⁶ Even then, however, the amount is so small that it could not be equated with a royalty. This needs to be critically appraised.

The private use of natural resources is commonly free, as long as the resource has not become scarce or the individual use is small. 'Free' resources include, for instance, breathing air, cultivating land, collecting fruits on public lands, and bathing in public waters. By contrast, the exploitation of mineral resources is normally subject to the payment of royalties. This is because the scarcity of the resource increases its value; and under such circumstances it would be unjust to privatize the resource, instead of drawing on it in the public interest.

The practice of free fishing goes back to times when the resource was not yet scarce. Fishing was treated like all other uses of commons. As fish became scarcer and their economic value increased, the free allocation of exploitation rights equals a privatization of public value free of charge. This may be justified on the basis that fish are consumed by many people and thus, in a way, by the public as a whole. However, this hidden subsidy disguises the scarcity of the product, making it cheaper than it should be – so cheap that fish are even used for fish meal for the production of allegedly higher-value goods such as pork and farmed fish.

Very few states have introduced royalty payments for fishing rights. The closest scheme to this is found in those states which require payments at a level that helps finance the administrative management of fisheries. This is the case in Namibia. It is recommended that where the stock is scarce, the fishing industry should pay royalties. This would generate income for

⁴⁶ Rukoro, *supra*, note 7; and Laode, *supra*, note 5. For a more differentiated account of fee and levy regulation in different countries see Markowski, *supra*, note 13..

stock conservation and redistribution; and at the same time the consumer price would reflect the true costs. Of course, for reasons of distributional justice, small fishers could be exempted from royalty payments.

(10) *On management instruments: 'Fix total allowable catch, prohibit unselective fishing techniques, restrict fishing effort according to fish stock potential'*

As long as fishing capacity and effort remain low, and catch within the safe biological limits of stocks, there is no need for fisheries management. However, fisheries of this kind rarely exist any more. Marine fish resources have become scarce almost everywhere, and in response, different forms of fisheries management instruments have been introduced.

Management instruments can be categorized into catch limitation and effort control. Both shall be discussed in turn.

(a) *Catch limitation*

The instruments of catch limitation are:

- The determination of total allowable catch (TAC);
- The allocation and tradability of individual catch quota;
- The designation of nature protection areas and areas for recovery and special management of fisheries;
- The regulation of fishing techniques;
- The fixing of minimum catch and landing sizes of fish; and
- Restrictions of fishing periods and areas.

Total allowable catch

Decisions on TAC should follow certain principles that are clearly laid down in the basic law on fisheries. As stated above, the EC Regulation on Fisheries is an interesting example in this regard.⁴⁷ First of all, it states that the determination of overall allowable catch quantities must be based on best scientific knowledge. Secondly, as the scientific data often lack certainty, the precautionary approach must be applied. Thirdly, fish stocks depend on overall ecosystem functioning. If fish stocks are depleted, the ecosystem will change; and if the ecosystem changes due to external factors such as climate change, El Niño etc., fish stocks will likewise be affected. Therefore, ecosystem implications of stocks and fish mortality must be taken into account.⁴⁸ States should lay down the methodology used when conducting stock assessments in guidance papers.

It is critical whether, after scientific determination of catch limits, the political bodies should be allowed to waive stock protection in favour of other social and economic priorities. Such action would comply with the principle of sustainable development if this principle is understood as supporting short-term economic and social welfare gains at the risk of long-lasting damage to natural resources (and ensuing repercussions for the economy and society as a whole). This would be a wrong understanding of sustainability. If the stock is seriously threatened, any losses in employment and capital and any shortage of fish supply must be accepted in order to save the fishery in the long term. The precautionary principle, however, does permit some balancing, functioning as a buffer to safeguard competing interests. The fisheries assessment terminology proposed by ICES helps to understand the appropriate balancing better (see Table 2).⁴⁹

⁴⁷ See above.

⁴⁸ Regulation (EC) 2371/2002 Art. 2. See Markus, *supra*, note 11.

⁴⁹ Report of the ICES Advisory Committee on Fishery Management, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems. (2007). *Book I: Introduction, Overviews and Special Requests*. International Council for the Exploration of the Sea, p.2. The methodology was taken up by the Fish Stocks Agreement, see Article 6(3)(b) and Annex II. For more details see also Markowski, *supra*, note 13.

Table 2. ICES terminology on stock assessment and catch limitation

	Spawning stock biomass (SSB)	Fishing mortality (F)
Limit reference point	B_{lim} : minimum biomass. Below this value recruitment is expected to be 'impaired' or the stock dynamics are unknown.	F_{lim} : exploitation rate that is expected to be associated with stock 'collapse' if maintained over a longer time.
Precautionary reference point	B_{pa} : precautionary buffer to avoid that <i>true</i> SSB is at B_{lim} when the <i>perceived</i> SSB is at B_{pa} .	F_{pa} : precautionary buffer to avoid that <i>true</i> fishing mortality is at F_{lim} when the <i>perceived</i> fishing mortality is at F_{pa} .
	The buffer safeguards against natural variability and uncertainty in the assessment. The size of the buffer depends upon the accuracy of the projections (of SSB and F) and the risk society accepts that the true SSB is below B_{lim} and the true F is above F_{lim} . The accuracy of the projections depends on the magnitude of the variability in the natural system and of the accuracy of the population estimates.	

If the spawning stock biomass has fallen to the limit reference point and the exploitation rate⁵⁰ is at a level that would eventually cause stock collapse, the decision on TAC must disregard any costs to economy and society. Such 'tough decisions' would probably require mitigating actions such as requiring compensation payments in cases of serious loss. The buffer between the limit and the precautionary reference points creates room for balancing socio-economic concerns. For instance, in relation to the B_{pa} , the F_{pa} may be set at a higher than precautionary level for a period of time allowing the incremental reorientation of the fishing industry.

Allocation of individual catch quota

As outlined above, once a TAC has been fixed, various criteria for the allocation of quotas to states and individuals can be envisaged; these range from taking a 'first come, first served' approach through to benchmarking. Most of the problems associated with allocation are distributional in character. However, allocative criteria also bear upon the sustainability of the use of the resource. The tradability of individual quotas is a clear example of this. Tradability ensures that the quota is effectively fished out; however, this is not expedient from a sustainability perspective. Given that the total allowable catch is often set at too generous

a level, the non-use of individual quota is a hidden but welcome means of buffering the initial weakness.

Protected areas

Marine protected areas (MPAs) can serve different aims. Traditionally, the primary goal has been to protect the water body and seabed against pollution from ships, from accidents and from the dumping of waste. Of course, this is also done to preserve fish habitat.

Another type of MPA is designed to preserve the ecosystem. The effect on fisheries is twofold: fishing is restricted, but the protected area also functions as a fish nursery, bolstering stock levels for the benefit of those who fish in the sea surrounding the protected area. Environmental agencies, and not fisheries ministries or agencies, should be responsible for the management of this kind of protected area. This is the case in many states. Kenya with its differentiated system of parks (non-fishing) and reserves (limited fishing),⁵¹ but also Brazil⁵² are good examples in this regard. In the EC, however, the Council of Fisheries Ministers claims competence for nature protection zones in cases where fishing activities are affected.⁵³

A third category of MPAs is tailored to protect fish stocks. For instance, the EC Fisheries Regulation

50 Which is curiously called fishing mortality as if the death came about naturally.

51 Kamau et al., *supra*, note 6.

52 Figueiredo, *supra*, note 9.

53 Markus, *supra*, note 11.

provides that a fishery may be subjected to a 'recovery plan' if the stock is outside safe biological limits, or if such a plan is necessary to keep the stock within safe biological limits. The measures taken focus on catch limitations. The problem with this type of MPA is that it does not adequately address those activities which degrade the ecosystem in other ways, and thus the living conditions of the fish.

Fishing techniques

The regulation of fishing techniques requires awareness of the aims to be pursued, including:

- Avoiding the infliction of unnecessary pain of animals;
- Selectivity of the catch in relation to undersized and non-targeted fish;
- Prevention of destructive effects on the seabed; and
- Avoiding the killing of seabirds.

The crucial point is of course the type of fishing technique applied. The techniques score differently in relation to the regulatory goals:

- Certain unnecessarily painful and unselective catch techniques are generally forbidden, such as the use of explosives and poisons.
- Purse seines, i.e., vertical nets that encircle schools of fish, that are closed at the bottom and drawn together: the use of this technique targets fish that form schools. It should be used only for catching fish that are not accompanied by non-targeted protected fish or mammals (such as dolphins that like to swim beneath tuna schools). In addition, by-catch of undersized or non-targeted fish should be avoided by fixing appropriate minimum mesh sizes.
- Trawling nets, i.e., conical nets towed in the sea or along the sea bottom: bottom trawling should be banned. With this technique, bycatch is difficult to avoid, because the movement of the net presses caught fish together and reduces mesh size. Regulation can reduce damage by slowing down the velocity of towing and prescribing ample

mesh sizes, allowing small fish to escape. The width of the opening of trawling nets may also be restricted in order to avoid catching non-targeted fish.

- Longline fishing uses lines with hundreds or even thousands of baited hooks. In order to avoid the incidental mortality of seabirds, regulators may require the use of weights to ensure the lines sink quickly, the deployment of streamer lines to scare birds away from the baited hooks as they are deployed, setting lines only at night with ship lighting kept low (to avoid attracting birds), limiting fishing seasons to the southern winter (when most seabirds are not feeding young), and a prohibition against discharging offal while setting lines. The length of longlines and number of hooks may be restricted in order to prevent overcatch.

Minimum catch and landing sizes

Establishing minimum catch and fish landing sizes aims to allow juveniles to grow until they have spawned, improving reproduction rates and population size. Minimum sizes are complemented by maximum percentages of juveniles in landed catch. Although landing requirements help to ensure compliance with minimum size standards, one of the negative effects of this approach is that the mostly dead bycatch is returned to the sea instead of being used. Some countries, such as Norway, prohibit the throwing back of bycatch, requiring fishermen to land it in order to check overcatch. Of course, this only works if vessels are continuously monitored (e.g., by on-board inspectors).

Restricted times and areas

Restrictions on fishing for a period of time in a given area or on fishing certain species commonly aim to protect mating and spawning times and grounds. Such restrictions are also used as emergency measures. For instance, if a global TAC is established without further allocating individual quotas, fishing must be stopped once the overall TAC has been exhausted. Alternatively, fishing under individual fishing rights and quotas may actually deplete the stock, because the TAC was set too high. In such a case, time and area restrictions must be established before the overall TAC is exhausted.

Cumulation of measures

All of the catch management measures complement each other. Some serve to prevent circumvention of another measure. For instance, an individual catch quota that is not accompanied by minimum mesh and catch sizes would indiscriminately deplete juveniles. Other measures pursue diverging goals. For instance, while the protection of spawning seasons and sites is directed at safeguarding fish stocks, nature protection areas take a broader vision of the ecosystem. For these reasons all catch management measures must be cumulative.

(b) Effort limitation

In this study, effort restrictions shall be understood to comprise the following instruments:

- Regulation of the number of vessels;
- Regulation of the loading capacity and engine power of vessels;
- Regulation of the fishing gear allowed to be carried on board; and
- Regulation of days spent at sea.

While catch limitation means to extrapolate from fish stocks to fish intake activities, effort regulation means to extrapolate from fishing capacity to catch activities. The logic underlying both types of measures overlaps, making it somewhat arbitrary what instrument to put into what category.⁵⁴ The main reason why effort is used as a distinct category is that limiting intake might be difficult to supervise if fishing effort is left unregulated. For instance, although it appears that setting individual quotas for a certain fish species serves as an effective instrument to limit intake, quota could be exceeded if the size of vessel used in that case is also not limited. A second goal of limiting effort, in addition to catch reduction, is to reduce inefficiency of fishing that occurs if overcapacity is kept operative but underexploited. A third aim is the fair distribution of fishing opportunities: in many countries, large vessels are prohibited from fishing in the coastal zones to reserve coastal resources for artisanal fishermen.

In order to provide guidance on determining

sustainable effort, it is most appropriate to fix the total allowable catch for a fishery. TACs establish both individual catch limits and effort. A number of factors are involved which make it more difficult to derive effort from TACs than it is to determine individual catch quotas. For instance, in order to calculate the optimal number of vessels, fishing practices and cost structures must be estimated. Alternatively, effort restrictions may be deduced from yield as measured by catch per unit indicators. A decrease in catch per unit indicates overcapacity.

In terms of legal forms, the number, size and gear of vessels can be controlled by the requirement that the purchase and operation of a vessel must be authorized by an administrative licence. Many states do require a licence of this sort, but the regulations are often not clear on what licensing criteria apply. Some states use the licensing requirement only to collect information on the number of vessels in operation. Others apply a kind of intuitive effort control, but hardly any state relates this to precise considerations of stocks and catch potential. In the EC, this was attempted in the multiannual guidance programmes (MAGP), but the methodology of relating stocks to effort is still underdeveloped.⁵⁵ More pragmatic criteria have therefore been used; e.g., a new vessel can only be licensed if an old vessel is decommissioned. In any case, the licensing of a vessel normally does not include the issuance of an actual fishing right. The licence is granted under the condition that catch restrictions are introduced or an individual catch quota obtained.

(11) On involving stakeholders in the organization of management: 'Distinguish between self-management, co-management and participation in decision making'

The process of adopting fisheries management measures needs to be organized. One crucial question is how to involve the stakeholders. The different management organizational structures include self-management, co-management, participatory management and autocratic management, each distinguishable on the basis of their requirements and effects.

⁵⁴ For a different grouping see King, M. (2007). *Fisheries Biology, Assessment and Management*, pp.297-304. 2nd edition. Oxford, UK: Blackwell.
⁵⁵ Markus, *supra*, note 11.

Since time immemorial, many indigenous coastal communities have self-managed their inshore fisheries in order to preserve stocks and ecosystems. They have proven that the problem of the tragedy of the commons – the overuse of common resources because self-restraint does not pay – can be avoided by imposing stringent social norms.⁵⁶ However, self-management systems of this kind are rapidly vanishing. All of them anyway operate within a state, i.e., a structure claiming to possess the monopoly of regulatory powers. States in which indigenous coastal communities have survived should give these people room for self-management, while at the same time supervising the exercise of these powers, given the possibility of abuse of powers by traditional leaders. For instance, Indonesian law now dispenses with the licensing requirement for traditional fishers; nevertheless, this does and should not mean that they are allowed to use poisons and explosives or other destructive techniques.⁵⁷

If indigenous communities manage their own catch activities, they perform a task traditionally belonging to their local sphere and daily concern. In a broader sense, self-management can also be organized by delegating tasks which previously belonged to the state administration (or could theoretically be assumed by it). For such delegation, fishermen's associations provide a necessary substructure for a professional and legitimated administration.⁵⁸ Examples of this kind of delegated self-management are EU producer organizations. Some member states allocate bulk catch quota to them, allowing them to redistribute the quota to individual fishers. They are also involved in the market organization, because they are given the power to determine withdrawal prices and buy up excess fish catch.⁵⁹

While self-management means that those involved enjoy an exclusive competence in this regard, co-management involves stakeholders in decision-making

bodies which are part of a state-bound administration. Examples of this kind are the Kenyan Beach Management Units and the Environmental Management Units in the Mexican Gulf of California, where stakeholders together with state representatives co-decide on matters of policy and law. These bodies may qualify as a model in this respect.⁶⁰

While co-management builds on a corporatist conception of administration, participatory management assumes that decision-making power is in the hands of state-based bureaucracies. But rather than using their powers autocratically, stakeholders are informed about issues and invited to comment or assist in public hearings before a decision is taken. This model necessitates that the public is given the right of access to relevant information. It has often been shown that participation is better than autocracy at building a shared understanding and thus the willingness of stakeholders to follow the rules.⁶¹

In the absence of community-based management approaches, fisheries must be managed by public administration of the state. An example of this in our sample is the reform of the policy and rule-making process for the Arvoredo Biological Marine Reserve in Brazil from a top-down to a bottom-up approach.⁶²

(12) *On enforcement and legal protection: 'Combine self-control with control by public administration; involve certified experts in surveillance activities; ensure legal protection of individual and third-party rights'*

Regulatory law that restricts individual freedoms will by its very nature meet resistance against its enforcement by its addressees. Fisheries management is telling in this respect. Any regulatory device has triggered a typical counter-device of *de facto* evasion. For instance, if individual catch quotas are fixed, vessels

56 Mapaire, supra, note 8. On the related theoretical discussion see Ostrom, E. (1990). *Governing the commons: the evolution of institutions for collective action*. Cambridge, UK: CUP.

57 Laode, supra, note 5.

58 Willmann, R. (2000). 'Group and Community-Based Fishing Rights'. In: Shotton, R. *Use of Property Rights in Fisheries Management*, pp.51-57. Rome, Italy: FAO.

59 Markus, supra, note 11.

60 Kamau et al., supra, note 6.

61 Wilson, D. and Jentoft, S. (1999). 'Structure, Agency and Embeddedness: Sociological Approaches to Fisheries Management Institutions'. In: Symes, D. (Ed.) *Alternative Management Systems for Fisheries*, pp.63-72. Oxford, UK: Blackwell.

62 Figueredo, supra, note 9.

may tranship catch to other vessels; if the landing is controlled, inspectors may be bribed; if mesh sizes are restricted, double nets are used; if the assessment of maximum sustainable yield is handed over to a scientific body, its work will informally be politicized, or – if achieving independent judgement – its proposal may be overruled by political decision, or else – if the political decision duly follows the scientific advice – its enforcement may be deficient.

In contrast to regulatory law, enabling law such as the allocation of subsidies and fishing rights will hardly be evaded, because fishermen are interested in obtaining a benefit. Nonetheless, enforcement deficits in this area can occur when those who do not meet the necessary criteria for the grant try to receive a benefit illegally. For these reasons, proper surveillance of law implementation is crucial (a).

On the other hand, the public administration may encroach on the protected rights of fishermen when imposing enforcement measures and administrative inaction may impair the rights or interests of third parties. Therefore, the opportunity for court review of administrative action must be guaranteed (b).

(a) Enforcement measures

Traditionally, the public administration has been responsible for surveillance. More recently, their role has been assisted and partially replaced by two new modes of surveillance: self-control by the private actor, and control by publicly supervised private consultants.

Self-control by fishermen is practised in different forms:

- Recording catch in a logbook;
- Recording and declaring landings; and
- Recording and declaring purchases.

Control by public administration is exerted by:

- Water police patrols in territorial seas and EEZs inspecting catch practices on board;
- Satellite observation of movements of vessels (e.g., in protected zones, in areas out of bounds to large vessels, in no-catch seasons or areas, etc.);
- Permanent observers or inspectors on board vessels; and
- Inspection of landings and sales in ports.

In-port inspection has been entrusted to certified experts in some countries.

Depending on the social culture of a country, inspectors may be inclined towards leniency and even corruption. This is particularly so where inspectors live in local communities together with the fishermen and ship-owners. Organizing inspection in a way that inspectors rotate among harbours may make them more independent from those whom they supervise. Sometimes the privatization of surveillance is considered to be more resistant to corruption.

In order to make enforcement effective, administrative bodies or certified experts must be given powers to carry out their duties.

First of all, they must be authorized by law to enter vessels and facilities, to inspect premises, and to ask for information. The severity of encroachment on individual rights increases if inspectors feel a need to search the premises without the consent of the person concerned. The constitutions of some states require a primary search warrant, obtained from a judge, before they can carry out such an investigation.⁶³ Others – like those states party to the European Convention on Human Rights⁶⁴ – permit inspections where there is sufficient ground to believe that the law may be breached.

⁶³ Art. 13 para 1 of the German Constitution.

⁶⁴ ECHR Art. 8 para 2; on the jurisprudence of the European Court of Justice see Marauhn, T. (2006). Chapter 16 No. 95. In: Marauhn, T. and Grote, R. *EMRK/GG Konkordanzkommentar zum europäischen und deutschen Grundrechtsschutz*, Tübingen, Germany: Mohr/Siebeck.

⁶⁵ The German Federal Administrative Court has held that a fisherman traditionally fishing in a certain area possesses a right to unpolluted waters and can thus ask for the quashing of a licence for the dumping of toxic waste. See Bundesverwaltungsgericht, judgement of 1 December 1982 – BVerwG 7 C 111.81 – Rep. 66, 307.

Secondly, if inspectors find violations of the law, they should possess powers to order rectification and execute such an order (e.g., by seizing bycatch or illegal gear). In some legal systems like the English, public authorities must ask the court to issue such an order and execution, which generally overcomplicates enforcement.

Thirdly, in cases where the law is violated, administrative or criminal sanctions must be available, depending on the severity of the violation. A controversial point here is whether only the individual captain should be responsible for a breach or whether the corporation which owns or operates the ship should be held to account. It is submitted that while an individual person must still be found to have committed the act with *mens rea* (i.e., with knowledge of its unlawfulness), authorities should be entitled to lay the sanction on the corporation if the deed was committed in its favour. This would allow to make the sanction easier to apply and thus a better deterrent.

(b) Court review of administrative action and inaction

Fisheries law should be explicit about the contents and the (individual and collective) holders of the rights it creates. These can be any of the following:

- Rights of participation;
- Rights of access to information;
- Substantive rights to a subsidy;
- Substantive rights to fish; and
- Substantive rights to protection of stocks and ecosystems.

Most importantly, the right to fish must be clearly defined. Fishing rights can have the following content:

- A right to possess and operate a vessel: most often this is provided by a licence for the vessel;

- A general right to fish: this may be attached to the licence for the vessel or provided by general law; in most cases it is subject to administrative management measures such as catch and effort restrictions;
- A right to be allocated a specific percentage of the total allowable catch; this is normally laid down in some subordinate legislation determined by administrators; depending on the legal basis the right is subject to modification;
- A specific right to catch certain fish in a certain area: this is allocated as individual catch quota; the quota can normally not be withdrawn except in an emergency (such as the sudden depletion of a stock); a withdrawal may trigger the duty to compensate; and
- A right to transfer or even trade rights to fish.

Rights provided by fisheries law must be enforceable in the courts. If, for instance, the allocation of an individual catch quota is revoked in violation of pertinent legal provisions the concerned shipowner must be given standing to sue the competent administrative body and ask the court to quash the revocation. If the catch quota was legally withdrawn, the shipowner may ask for compensation if the law or constitution so provides.

Third-party rights to the preservation of stocks and ecosystems are particularly difficult to design and to be made enforceable in the courts. As the interest in stocks and ecosystems can hardly be individualized⁶⁵ and is typically of a public nature, NGOs should be given rights of standing to invoke courts to quash decisions on unsustainable catch or demand that authorities enforce protective provisions.

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