

COUNTRY NOTE ON NATIONAL FISHERIES MANAGEMENT SYSTEMS -- MEXICO

Introduction

1. Mexico enjoys international recognition as one of the countries with the greatest biological diversity and riches on the planet, particularly because of the countless endemic species of flora and fauna that inhabit or breed in its territory.

2. With regard to the sea, these riches and diversity are characterised by factors such as its geographical location between two of the world's most important ocean areas (the Pacific Ocean, and the Gulf of Mexico and the Caribbean Sea in the Atlantic), the length of its coastline which reaches almost 11 500 kilometres, its almost 3 million square kilometers of Economic Exclusion Zone (EEZ), 358 000 kilometers of continental shelf, and more than 2.9 million hectares of inland bodies of water, including 1.6 million coastal lagoons.

3. These geographical features, together with the marine biology phenomena that occur in its territorial waters, have favored the existence of many marine ecosystems, some of which are particularly important for domestic fishing, such as the Campeche Sound, the reef and coral systems in the Gulf of Mexico and the Caribbean, areas or zones located in the Gulf of California where such endemic species as the vaquita porpoise and the totoaba can be found, or the bays and coastal lagoons along the west coast of the Baja California peninsula where gray whales come to reproduce.

4. In addition, the prevailing physical and climatologically conditions in each region allow the development of an infinite number of species of marine flora and fauna, typical of the temperate and tropical systems that predominate in the country. From this diversity, many species have been identified and are generally classified into four groups: pelagic (or open-sea) species, deep-water species, crustaceans and molluscs, and inland-water species.

5. The pelagic species found in Mexico's territorial waters include tuna, sardine, swordfish, sailfish, marlin, and squid. Among the deep-water species are those generally known as scaled fish: sea bass, red snapper, seabream, flatfish and others. Shrimp, lobster, abalone, oyster, clam, and sea-snail are all members of the group of crustaceans and molluscs found in Mexican waters.

6. Inland-water species number around 58, and include the following: mojarra, tilapia, trout, carp, whitebait, catfish, river-prawns, and bass.

7. Between 2001 and 2002, average fishery production stood at 1.5 million tonnes per annum, of which 67% was used for direct human consumption, 30% for indirect human consumption, and the remaining 2.6% for industrial purposes. In turn, aquaculture activities contributed 12.5% of the total volume of sector supply. This production reached a value of MXN 12.9 million in 2001, and of MXN 12.6 million in 2002. This represents growth rates of 5.5% and 3%, respectively, and both increases were higher than of the economy as a whole.

8. The most important species landed, in commercial terms, include sardine, tuna, mojarra, oyster, shrimp, shark and dogfish, octopus, and such fine-scaled species as sea bass, red snapper, and sierra.

9. Between 2001 and 2002, the fishing fleet comprised an average of 106 425 vessels, of which 3 618 were large craft and 102 807 were small boats. In turn, shrimpers accounted for 66.5% of the large-scale fleet, scale-fishers for 2.3%, sardine and anchoveta craft for 2.4%, and tuna vessels for 3.6%. The processing sector had an average of 414 plants, of which 265 were for freezing, 15 for reduction, 40 for canning, and 94 dedicated to other processes.

10. Mexico has traditionally maintained a surplus in its trade in fishery products. In 2002, the figure stood at around USD 379 million, with exports worth USD 594 million and imports for USD 214 million.

11. In Mexico, fishing activities have attained great importance, particularly as a result of their contribution to reaching national food supply, employment, and income goals, and as a generator of foreign exchange earnings.

12. Consequently, Mexico's fishery policy is based on the principle of responsible fishing, which has the following guiding principles: rationality in the use of natural biological resources, economic profitability, the protection of sovereignty in Economic Exclusion Zones, and respect for ecosystems and biodiversity.

13. Likewise, following the important upswing in aquaculture activities, it has been necessary to ensure the rational use of the basic resources that make the development of these activities possible such as water, land, aquatic flora and fauna and to encourage the establishment of technically and financially viable projects.

14. The work undertaken has allowed progress to be made in defining suitable areas of land and water, in the compatibility between using natural elements and conservation, and even in environmental improvements.

15. It should be pointed out that administration schemes for fishery resources found in Mexico's territorial waters have taken into consideration the different levels of development of different fisheries as well as the diversity of fishing gear and equipment representing different stages in the industry's technological development and their effects on stocks.

16. Basically, these measures have been aimed at establishing regulations to encourage the rational use of fishery resources: for example, by specifying the characteristics of fishing gear and equipment that can be used, the handling of closed seasons, etc. All this is supported by keen supervision of the enforcement of the provisions set down by the competent authority in order to guarantee the recovery and maintenance of stocks and to reduce by-catches of related species.

17. By determining the type and characteristics of nets and vessels, the kind of manoeuvres, the size of the specimens that can be caught, the establishment of closed seasons, and other provisions, the fishery authorities have laid down guidelines to promote the rational use of the valuable resources available in national territorial waters.

18. Thus, rational use attempts to strike up a harmonious relationship between productive agents and natural resources, and government involvement tries to ensure that the authorised catch volumes, fishing gear, and techniques guarantee the sustainable long-term yield of fisheries and minimise by-catches of related species.

Elements considered in fisheries administration

19. Traditionally, the administrative and organisational schemes used for the exploitation, use, and conservation of live marine resources have involved the establishment of permissible catch volumes based

on the criterion of maximum sustainable yields, the application of seasonal or geographical moratoria, the definition of catch areas, regulations for the use of fishing gear and equipment, setting minimum sizes for specimens caught, and, in the case of endangered species, refuge zones or ecological reserves have been set up.

20. Under these efforts, a very important role in the research activities is played by the National Fisheries Institute (INP) which issues statements about the species population situation, as well as the endorsement related to quotas and size-measuring limits and catches season.

21. In addition, from the functional perspective, fishery administration schemes have been supported by mechanisms for controlling access that basically are regulated through fish, permits, authorisations, licenses, and concessions that are given in accordance with the resource assessments that are given by INP.

22. Similarly, at present a process to issue technical standards is underway. These are complementary to the issuing of fishing licenses, permits, and concessions and are intended to ensure administrative control over fishing and catches (fisheries information, inspection, supervision, and sanctions).

23. These measures consider particular conditions, be they biological (stock status, areas of movement, reproductive capacity, etc.), economic (employment and income generated, importance in comparison to other fisheries, socio-economic effects, final destination of the product, etc.), social (users, social groups involved, organisational structures, etc.), or ecological (environmental impacts, pressures on coastal resources, conflicts between different users, etc.). Other sets of conditions are also taken into account.

24. The regulation of exploitation activities has led to the establishment and functioning of mechanisms that provide for legal access to fishery activities and the benefits derived there from. For the authorities they represent administrative mechanisms for determining the allocation of the natural resource with conservation, economic, and social aims.

Fisheries administration

25. In 2001, the fisheries administration was transferred from the Ministry of the Environment and Natural Resources (SEMARNAT) to the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA). Likewise, the National Aquaculture and Fisheries Commission (CONAPESCA) was created, with the aim of administering, with quality and transparency, the sustainable development of such fisheries and aquaculture resources; fostering the development of the chain of production, distribution and consumption, in support of the comprehensive development of the sectors employed, and contributing to improve the nourishment of Mexicans' food habits.

Noteworthy aspects of the legal framework include:

- Elimination of the reserved species regime for cooperative societies in commercial fishing. This opens the possibility of private investment participation in the extraction and cultivation of the species that command the highest commercial prices, such as shrimp, abalone, lobster, etc.
- The granting of concessions -- either through competitive bidding or direct adjudication for up to 20 years for extraction and 50 years for aquaculture, and extendible for a second similar period, provides long-term certainty for investors and facilitates productive agents' access to credit. In addition, the fact that they are transferable allows for the entry of new economic agents.

- Concessions are granted for commercial fishing and the cultivation of species, whereas permits, which cannot exceed the limit of 4 years, are given for commercial, development and sport fishing. Authorisations, on the other hand, are given for educational fishing, the installation of fixed gear in federal water, and for deep-sea fishing. The difference between permits and concessions lies in the amount invested and the economic prospects of the project.
- These provisions complement, in the case of aquaculture, the purpose of the amendments to Article 27, by adding to the security of land holdings the security of investments made in them.
- The Law and its Regulations make the conceptions behind Responsible Fishing a reality, in that the criteria of biological rationality and economic viability are applied in granting concessions and permits; this reduces the discretionary powers of the authorities, offers prospective investors security in their investments, and promotes sustainable development among producers; all this with the due respect for both ecosystems and biodiversity.

26. These instruments combine the experiences and results of administrative schemes used in the past and allow them to be adopted to fit the requirements and dynamic conditions within which national fisheries policy is formulated.

27. The design and implementation of regulatory schemes is aimed at providing guidelines for the different aspects of fishery activities and to direct them towards achieving responsible fishing.

28. The aspects covered by the regulations include the following:

- Establishing permissible catch volumes per fishery, along with the allocation of catch quotas.
- Establishing minimum sizes for landed specimens.
- Determining the number of fishers, vessels, and their characteristics, along with the number and type of fishing gear and equipment allowable for use in catching a given species or group of species.
- Implementing measures to control the introduction and handling of fishery species in natural and controlled barrage lakes.
- Proposing the establishment of refuges and reserve zones, and determining seasons and areas for moratoria.
- Proposing the species of aquatic fishery flora and fauna that warrant special protection, and implementing and overseeing the corresponding programs and measures.

29. The General Inspection and Supervisory Department has been set up in order to ensure that these standards and legal provisions in force are met. Its main function is to oversee the development of fishing in accordance with its standards and rules. It has set up an inspection and surveillance to ensure that all stages of the production chain, up to the end user, are legal.

30. The mission of the General Inspection and Supervisory Department is to ensure compliance with the legal provisions for the fishing and aquatic sectors; to account for its inspection and supervisory activities, encouraging the involvement of the three levels of government, and production sectors, contributing to the sustainable exploitation of fishing and aquatic resources, and the profitability of those involved in this activity.

31. Three programs have been set up in order to achieve the following targets:

- *The National Aquatic Inspection Program*: This program consists of ensuring compliance with the legal provisions in the area of aquaculture, and with the terms and conditions established in the authorizations, permits, and concessions related to aquaculture activities.
- *National Fish Inspection and Surveillance Program*: This program consists of checking the legal origin of fishing products, by-products, and supplies and, in general, compliance with the provisions of the Fishing Law and its Regulations and the applicable Official Mexican Standards (NOM); plus implementing assurance measures and applying administrative sanctions.
- *National Verification Program* for meeting health standards in aquatic affairs. This program consists of controlling imports and distribution, including national production of fishing products and by-products and live organisms, and ensuring that they meet the aquatic standards in force, in order to prevent the introduction and dissemination of diseases in cultivation areas and the environment.

32. In addition to the attributes conferred to it by the Fishing Law and its Regulations, the Internal Regulations of SAGARPA, the Decree that created the National Aquaculture and Fishing Commission, and the Organic Federal Public Administration Law, the organization has carried out the following activities to strengthen its operation:

- Drafting agreements between state governments and SAGARPA-CONAPESCA, including the provisions required for taking actions to further legal and responsible practices in aquaculture and fishing.
- Establishing conditions with the Naval Ministry with a view to formalize joint or separate actions to support the inspection and supervision of fishing activities at national level.

33. This last aspect is very important as, in collaboration with the Naval Ministry, naval vessels will monitor and inspect national waters to verify that Mexican vessels conduct their activities in accordance with current laws and standards.

34. Another very important role is played by the Federal Environmental Protection Law Office (PROFEPA) that inspects and supervises specially protected species (turtles and mammals). CONAPESCA and PROFEPA established conditions for collaboration by which several inspection and surveillance exercises were carried out in order to discourage and do away with illegal fishing practices; it also provided inspection training for SAGARPA staff.

35. In order to create a new fishing inspection and supervision image with CONAPESCA, 660 fishing staff¹ were trained and certified throughout the country to ensure that the Fishing Law and its Regulations are observed.

36. Commercial fishing concessions are only granted to Mexican citizens. The involvement of foreign investors requires observance of the terms of the Foreign Investment Law.

37. Development fishing is aimed at the study, scientific research, experimentation, exploration, prospecting, cultivation, development, restocking, or conservation of resources comprising water flora and

1. The 660 fishing staff refer to Federal Officer for Fisheries, certified personnel and a technical adviser.

fauna and their habitat, along with the training of people involved in any way with fisheries and experimentation with gear and methods for this activity.

38. Educational fishing is that undertaken by domestic teaching and research institutes with official recognition and authorisation to undertake teaching, research, and training programs.

39. It should be pointed out that the Fisheries Law updates the aforesaid administrative mechanism and, under the terms on the Federal Law on Measurements and Standardization, these instruments including Official Mexican Standards, are made more transparent since their preparation involves all productive and institutional agents concerned. The general public may play a part in their preparation and review, since they are published in the Official Journal of the Federation and a period is allotted for the reception of comments and observations, which in turn are discussed by the Working Group charged with drafting the standard.

40. The National Fishing Standardization Consulting Committee is responsible for preparing, promoting, and ensuring compliance with the Official Mexican Standards that come within the sphere of SAGARPA as far as fishing and aquaculture matters are concerned. The committee was set up in 1997 and its main purposes are: contributing to the integration of the National Standardization Program by introducing standardization issues regarding fishing; reviewing and updating Official Mexican Standards; organizing and being involved in the standardization and reorganization of the Official Mexican Standards that are related to standards of other countries, in collaboration with the Ministry of Economy; etc. Under this scheme, during 2001 and 2002, seventeen Official Standards were approved regarding shrimp, small oceanic animals, red clams, abalone, lobster, red globefish, octopus, closed seasons and areas, totoaba and vaquita (transferred to SEMARNAT), snails, large oysters, Caribbean mullets and silver mullets, sport and recreational fishing, El Cuchillo-Solidaridad Dam, tuna species with boulderers, the import of live aquatic organisms and, setting quarantines.

41. Eleven draft standards projects were prepared for 2001 and 2002 that are now being reviewed by technical groups. These projects cover: marine scales, crabs, damming at the Champayan and Portes Gil dams, the Patzcuaro Lake, Malpaso Dam and La Angostura Dam, Marte R. Gomez Dam, Falcon Dam, Mimbres Dam, Catazaja Lagoon System. The final version of NOM-030 was drafted and this standard establishes the requirements for determining the presence of viral diseases in live aquatic crustaceans, dead aquatic crustaceans, their products or by-products in any form of presentation, and *Artemia* (*Artemia* spp), for their introduction into Mexico and the movement thereof. The requirements for importing crustaceans were updated in NOM-030-PESC-2000, which also included the new requirements for setting quarantines.

42. During this period, the National Fishing Charter was brought up to date. This document provides information on the marine and coastal fishing grounds, including those in which a group of target species and by catch species (incidental catch) are caught, and those in which specific species are caught, with or without incidental catch.

43. New species under this special protection status have been added: seven turtles and two marine mammals, the former, because they have been subjected to fishing exploitation and the latter (gray whales and vaquitas), albeit not exploited, have been the subject of a major preservation effort and Mexico has been granted recognition by international organizations.

44. In addition, all authorized catch systems that is less than 95% of national production, have been incorporated. These are presented according to their regional application and type of fishing ground.

45. Moreover, 506 fresh aquatic species have been identified in national continental waters, out of which 484 have been included in the National Fishery Charter. Approximately 48 (10%) of these species are exotic and 436 (90%) are native.

46. Sixty species of fish, mollusk, and crustaceans have been registered. Their classification includes the deterioration, risk, and potential condition. There is also a report on the Aquatic Production units and their coverage regarding consumption.

47. Another important part of the National Fishing Charter is the information it provides regarding the Coastal Lagoon Ecosystem. Mexico has approximately 135 coastal ecosystems with a surface area of 1.5 million hectares. Forty-two ecosystems are incorporated into the charter, representing 73% of the national lagoon water area.

48. The inventory and coverage of the twenty six Marine and Coastal Natural Protected Areas are described, out of which fourteen are national parks, three are flora and fauna areas, and nine are biosphere reserves.

49. The following section describes the main mechanisms for fisheries administration implemented in the country's main fisheries in accordance with their level of development.

Shrimp

50. Because of high commercial prices, shrimp fishing is Mexico's most important fishing activity in economic terms: it is the sector's main export product and, consequently, the largest source of foreign exchange earnings. Between 2001 and 2002, overseas sales worth an average of approximately USD 5.5 million accounted for 50% of the sector's total income and, in terms of catches, the average production of 103 000 tonnes is equal to almost 6.7% of total supply.²

51. The main shrimp species located in Mexican territorial waters of the Gulf of Mexico and Caribbean Sea are the following: the brown shrimp (*Farfantepenaeus aztecus*), white shrimp (*Litopenaeus setiferus*), white shrimp (*Farfantepenaeus duorarum*), rock shrimp (*Sicyonia brevirostris*), in the Atlantic botalon shrimp (*Trachipenaeus similis*). In the Pacific Ocean, the main species are the brown shrimp (*Farfantepenaeus californiensis*), blue shrimp (*Litopenaeus stylirostris*), crystal shrimp (*Farfantepenaeus ebrelirrostrisbrevirostris*), and white shrimp (*Litopenaeus vannamei*).

52. Administrative and regulatory measures in shrimping have been put into effect through the granting of fishing permits per vessel in deep-sea fishing and, from the economic point of view, this has allowed the individual control and recording of fishery operations, of the catches made, and of the catches landed per vessel, thereby allowing the yield rates to be assessed.

53. Similarly, regulatory standards for the use of drag nets by the Gulf shrimping fleet have been established, thereby obliging the shrimping fleet to fit sea-turtle exclusion devices.

54. Finally, it is important to point out that Official Mexican Standard (NOM) 002-PESC-1993 controlling the exploitation of shrimp species is in federal waters. This provision improves and updates the requirements for the development of this activity in order to guarantee the preservation and optimal use of shrimp resources.

2. All figures for 2002 are not published yet in CONAPESCA's Yearbook.

Tuna

55. Since 1976, the year in which Mexico established its Economic Exclusion Zone regime, tuna fishing has been one of the sector's most important activities, currently standing in second place, after sardine fishing, in terms of total production volume. Between 2001 and 2002 total tuna landings stood at an annual average of 152 483 tonnes, equal to 9.9 % of the sector's total fishery supply.

56. Its fleet, comprising 132 vessels for 2002, is considered to be the most modern and to enjoy the greatest ocean-going autonomy. Regarding employment, a conservative estimate indicates that this fishery generates 2400 direct jobs and around 3800 others in the processing industry.

57. Actions to encourage this fishing activity necessarily included, with regard to administration, the implementation of streamlined and timely procedures intended to guarantee the immediate operational integration and programming of vessels, designing a system of permits per vessel, and establishing fishery operational standards.

58. In this fishery, it has been necessary to adopt strict measures to protect and conserve the dolphins in the Mexican East Pacific that are accidentally caught during tuna fishing operations.

59. Indeed, since 1976, it is one of the fisheries where the greatest number of provisions has been implemented to optimise administration, particularly with a view to reduce by-catches of dolphins. In this regard, particularly notable are the measures put into practice through the National Program for Tuna Use and Dolphin Protection which develops selective fishing methods and technologies and which has an on-board observer program present on each and every fishing trip made.

60. From 1993, with the publication of the Official Mexican Standard for regulating tuna exploitation by vessels using seine nets in territorial and international waters and by domestic vessels in the waters of other countries of the East Pacific Ocean, the set of administrative instruments was improved and adapted to meet the demands of this fishery. This includes provisions such as bans on night-time sets and the use of explosives, the obligatory use of the reverse manoeuvre, and the use of equipment to release dolphins caught by accident.

61. Mexico considers the progress made in the rational administration of tuna resources, including the reduction in by-catches of dolphins per set from 15 to 0,14 between 1986 and 2002 (that is, a reduction in such captures in relative terms of almost 99%), to be valuable efforts that should be taken into consideration by the other nations involved in this fishery in order to face the problem of its administration at the regional level in a multilateral fashion.

62. The Agreement on the International Dolphin Conservation Program (AIDCP) is an international binding Agreement subscribed within the framework of the Inter-American Tropical Tuna Commission (IATTC). The agreement has been signed by the European Union, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, United States, Vanuatu, and Venezuela. The AIDCP derived from the La Jolla Agreement which is a voluntary instrument applied since 1992.

63. This agreement endorsed the establishment of a review panel, (with the participation of governments, industrialists, and ecological groups) with a scheme for the oversight of its observance allowing the optimal use of tuna resources and protection of dolphins.

64. Amongst its achievements are the reduction of the incidental mortality of dolphins to levels approaching zero in the purse-seine fishery in the Eastern Pacific Ocean, and that fishing for yellow-fin

tuna in accordance with the AIDCP is sustainable and poses no threats to interrelationships amongst the species in the ecosystem.

65. The AIDCP includes unique aspects such as training and qualification of Fishing Captains, operating requirements for vessels, on board independent observers and review of data and transparency.

66. In the Gulf of Mexico, tuna fishing is currently undertaken by low-capacity longline vessels, which catch their tuna mostly by using live bait. The fleet currently comprises 28 vessels.

67. Management of this fishery is regulated by the issuing of permits, and the regulation is adequate thanks to the existence of monitoring program that places scientific observers on each and every fishing trip. This has allowed Mexico to contribute to the administrative and statistical information gathering efforts undertaken by the International Atlantic Tuna Conservation Commission (IATCC).

Sardine

68. Sardine fishing represents a commitment to secure foodstuffs for popular consumption and for the production of basic inputs for the poultry and cattle industries.

69. The main species fished are the Monterrey (*Sardinops sagax*), Crinuda (*Opisthonema oglinum*), and Japanese (*Etrumeus acuminatus*) sardines. Mainly active in the Pacific, this fishery is most representative of the sector in volume terms. In 2001 and 2002, the harvest totalled close to 323 028 tonnes per annum, and thus one of the most important fisheries for direct human consumption.

70. Sardines are considered the most dynamic of all the species found along Mexico's coast, in terms of their mobility and because oceanographic changes have a substantial impact on the geographical location of stocks. Consequently, administrative measures have basically involved the establishment of a per-boat permit system and the instrumentation of technical standards for fishery operations to which exploitation has been adapted.

71. With regard to standards, these administrative measures provided for the issuing of regulatory standards to set the minimum size of captured specimens for the Monterrey and Crinuda species, closed seasons in the eastern region of the Baja California peninsula, and operating conditions for the sardine fleet in order to protect juveniles and those of reproductive age and to ensure a quality of catches suitable for canning.

72. Provisions have been included to regulate access to fishing, allowing only vessels with on-board refrigeration facilities to fish for sardine, along with provisions to regulate the methods and techniques used to unload catches on the quayside.

73. The aims of these measures included the consolidation of the fleet's operations on the basis of production and operation programs on the vessels.

Scaled species

74. The development of river fishing for scaled species is of fundamental importance in the country's fisheries development policy, since it is closely linked to the aims of employment, food supply generation, and regional development. In coastal regions, the distributional characteristics of the fishery resource have a decisive influence on the geographical ordering of the fishing communities involved in primary extraction.

75. Furthermore, geographical features and the limited highway network in those coastal regions not only hinder inter-community trade; in addition, the adoption of any promotional measures for them implies the need to channel resources or facilities for the economic growth of the activity and the problem of transforming existing social and economic relations.

76. Likewise, the dispersion and high level of regional variation between fishing communities are elements that complicate the mechanisms for channelling resources and productive and social services, since under such conditions there is the risk of atomising them and even diverting them, thereby cancelling out their potential productivity.

77. The economic and social importance of scaled-fish extraction is reflected in its contribution to national fisheries production -- it is estimated to account for 60% of total production -- and in the amount of jobs and income generated in communities where fishing is the most important economic activity or even the only one.

78. Administrative progress in these areas has consisted of the simplification and extreme specialisation of the permit system in order to incorporate the fishers into a regime of legality, thereby facilitating the commercialisation of their products under advantageous conditions.

79. Bearing in mind that scale-fish extraction covers more than 520 species, seabream (*Lutjanus*), sea bass (*Epinephelus morio*), red snapper (*Lutjanus campechanus*), sierra (*Scomberomorus maculatus*), mullet (*Mugil cephalus*), sole (*Paralichthys lethostigma*), bluish streaky croaker (*Micropogonias undulatus*), and many others categorisation efforts have been made for administrative purposes in order to statistically define the planning of preventive evaluation mechanisms in these fisheries. Thus, actions have been taken to incorporate larger vessels into ocean-going fishing.

Recreational fishing

80. Bearing in mind the riches and potential offered by coastlines and lakes for the development of recreational fishing, the administrative measures brought into play in encouraging and supporting the development of this activity have basically pursued the goals of maintaining the biological equilibrium. This includes achieving the optimal use of the species in recreational fishing along a 50-mile strip off the coast, and implementing mechanisms to prevent and, when such situations arise, resolve problems arising between the different users of these resources, such as service providers, commercial fishers, and sport fishers.

81. Within the framework of fisheries administration, the instrumentation of management plans as a systematic action to identify the economic or social options for the use of a fishery resource is intended to resolve and prevent conflicts between the different users of these fishery resources.

82. The response has been to issue clear and objective legal provisions and standards to balance the competing interests of commercial and recreational fishing. Thus, the current Law determines the exclusive sporting use of resources such as marlin (*Makaira nigricans* and *Makaira audax*), sailfish (*Xhipias gladius*), swordfish (*Coryphanema hippurus*), dolphinfish (*Nematistius pectoralis*), and shad (*Tarpon atlanticus*) in a 50-mile strip of sea along the coast; likewise, an Official Mexican Standard, establishing clear rules for the practice of recreational fishing, has been issued.

83. This provision indicates the species reserved for sporting and recreational fishing, the fishing banks, gear and equipment that can be used, and catch quotas.

84. Other actions undertaken in this area include the periodic adapting of fees for recreational fishing rights and expanding the geographical and seasonal coverage for permits with the support of service

providers in the sport-fishing industry, after making efforts to establish information registers to allow an understanding of the importance of sport fishing in the country.

Species requiring special protection measures

85. Stemming from the amendments and additions that were made to the Organic Law of the Federal Public Administration and to the Fisheries Law, published in the Official Gazette of the Federation on November 30, 2000 (Article 35, Subsection XXI), the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) was assigned the role of fostering fisheries activities through the National Aquaculture and Fisheries Commission. This public entity, the purpose of which is to administer, with quality and transparency, the sustainable development of fisheries and aquaculture resources, foster the development of the chain of production, distribution and consumption, in support of the integral development of the sector's productive agents, and contribute to improving Mexicans' nourishment, with the exception of marine species with a regime for special protection, (marine turtles and marines mammal) provided for in the Fisheries Law.

86. The Ministry in charge to protect the regime for special protection, such as marine turtles and marines mammal, is the SEMARNAT.

Aquaculture

87. In recent years, aquaculture activities have become an important food alternative and a major source of employment and income and, in general, in the socio-economic development of rural communities. This importance is reflected in its 13.16% contribution of the domestic fishery supply over the period 2001-2002.

88. The administrative measures applicable to the country's aquaculture potential have been oriented towards establishing a categorisation of areas suited to aquaculture and towards implementing provisions to demand its development with the lowest possible levels of environmental impact.

Final considerations

89. Schemes and instruments for fisheries administration challenge that, in general terms, hinder the establishment of a more ordered scheme of fisheries administration and resource protection. These include the following:

- The need for a greater understanding of the real potential of certain fishery resources on a regional basis.
- The constant increase in fishery efforts in river basins and protected areas, which is a direct consequence of the growth in the population of working age who find no employment alternatives in neighbouring communities and zones.
- The tendency among river fishers to concentrate on the more profitable fisheries, such as shrimp, lobster, and oyster, which permanently increases the fishing effort brought to bear on those resources.
- The need for technological progress in fishing gear and systems to allow increases in productivity levels and reductions in the negative impact on ecosystems and related species.

- The need to expand the coverage of supervisory activities on water and on land, as can be seen in the proliferation of unregulated catches.

90. Regardless of these challenges, in most instances the limit for profitable exploitation or for the regeneration or maintenance of stocks has not been surpassed. Similarly, economic deficiencies have been detected in certain products, most of which can be attributed to organisational problems in production, the use of inappropriate technologies, and reduced informational support regarding species, potential resources, fishing banks, etc.