

Perspectives of Rights Based Fishery Management in Mexico

Roberto Enríquez and Gabriela Batalla Camargo

Faculty of Marine Sciences, Universidad Autónoma de Baja California, México

Abstract. Despite increasing concerns, the progress towards better management of fisheries in Mexico has been slow. The main political, social and economic forces behind over fishing in the country remain largely at place. Among the major problems are demographic pressure, open access or ill defined property rights, excessive centralization of management decisions, and a wide array of market and regulatory disincentives for conservation. This paper presents an overview of the current situation of fisheries management in Mexico and discusses the potential benefits and limitations of the implementation of rights based management to reverse current overexploitation trends. The discussion considers likely management scenarios at the turn of the millennium. The paper concludes that property rights based management has an important potential to promote efficiency, profitability and increased stewardship of fishery resources, particularly if implemented at the local human community level. However, effective implementation must surmount substantial constitutional, political economic and cultural barriers.

Keywords: Rights based management, developing countries.

1. INTRODUCTION

Notwithstanding the wealth of Mexico's fishery resources the country's fishing industry presents low performance levels caused by poor management and fishing practices, environmental degradation, and fleet overcapacity. This paper presents an overview of the current situation of fisheries management in Mexico regarding access to the resources and discusses the potential benefits and limitations of the implementation of rights based management to reverse current overexploitation trends. The discussion considers likely management scenarios at the turn of the millennium.

According to official statistics (Anonymous, 1998) total fishery landings in Mexico reached a maximum 1,391,282 mt¹ in 1997, up from 524,689 mt in 1976 when the EEZ was declared (a 165% increase). Growth of production can be characterized by three periods (**Figure 1**): (1) a development period with moderate growth (1950-1972); (2) a period of rapid growth associated with the extension of the nation's jurisdiction over fishery resources (1973—1981); and finally a period of output stagnation and variability (1981-1999). During the last 19 years average landings have not increased, most likely due to a combination of poor management practices and environmental variability. From the total production 71.5% correspond to the Pacific Ocean, 26% correspond to the Gulf of Mexico and the Caribbean Sea, and 2.5% correspond to freshwater production. Total value² of Mexican production in 1997 was 9,600 million

pesos, the most important species in this regard are shrimps (36%) and tunas (9.84%). Landings in the Pacific Ocean contributed with 67% of the total production value.

In 1976, the country declared a 200-mile exclusive economic zone (EEZ), comprising an extension of 3,149,920 km² of rich oceanic ecosystems. The explicit goal was to utilize the contiguous fishery resources by developing of a domestic fleet and to exclude all foreign fishing activities. National fishery and aquaculture policies at this time had a profound effect, many of them negative, on the coastal zone demographic trends and the use of natural resources.

Official projections (Anonymous, 1996) estimate that under ideal management and environmental conditions maximum sustainable yield in Mexican waters could be around 1.65 million metric tons, up 19% from the 1.39 million estimated in 1997. This will require important increases in the production of currently underutilized species, in the production form massive stocks such as sardines, anchovies, squid and certain species of tuna and in the participation of aquaculture in total production.

A recent study by the National Fishery and Aquaculture Chamber (Anonymous, 1999a) conceives a scenario for the year 2020 in which Mexican production from conventional methods and aquaculture could reach 4.8 million mt: 2.2 million tons from capture and 2.6 million mt from aquaculture. Increases in production include a potential increase in exports from an estimated 780 million dollars in 1999 to 2,340 million dollars in 2020.

¹ Includes freshwater (2.7%) and aquaculture (11% of total in weight and 15.65% in value).

² Ex-vessel

More moderate projections recognize that fishing in Mexico has reached full potential and that spectacular increases are unlikely. Rising prices due to increase in trade will put additional pressure over many of the already heavily fished stocks in the region. Unless effective administrative measures to control effort and limit access are put into practice, the above scenario is likely to result in lower sustainable yield and even catastrophic collapses of some fishery stocks.

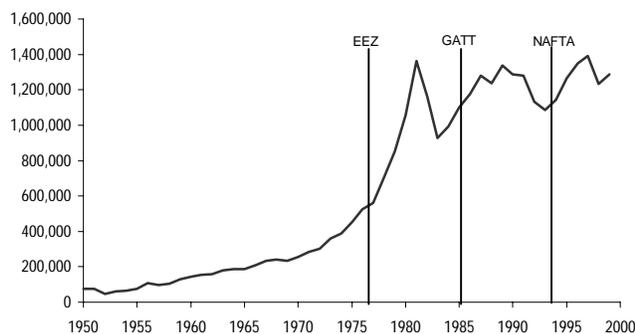


Figure 1. Total landings by Mexico in metric tons (1950-1977). EEZ= Mexico's declaration of an Exclusive Economic Zone; GATT= Mexico enters GATT; NAFTA= North American Free Trade Agreement enters into force. Source: Anonymous (1999a and 2000).

Total Mexican aquaculture production in 1997 reached 173.4 thousand mt (Anonymous, 1999a) representing 11% of the total fish and shellfish production in volume, and 15.65% in value. The Pacific Coast accounted for 57,660 mt or 33.6%. In the same way as capture fisheries, aquaculture production in Mexico has not grown for over ten years in spite of official support. Causes could include environmental degradation, the increasing scarcity of suitable land, diminishing supply of fresh water, low productivity, lack of financing, inadequate technologies and conflicts with other uses.

While supplies of Mexican fishery products are facing conditions that limit their growth, demand is likely to expand. Tendencies in North America region are pointing toward increasing demand relative to other meat products. Real prices have increased in comparison with beef, pork and chicken and are expected to grow even more in the future (FAO, 1997).

2. RESEARCH ACTIVITIES AND METHODS

Research activities consisted in extensive (directed) field interviews with a wide array of stakeholders, as well as a

multisectoral workshop in order to (1) investigate the institutional and market failures that favor fishery over-exploitation in Mexico, particularly in the Baja California Peninsula; and, (2) by means of qualitative multicriteria evaluation methods (Nijkamp *et al.*, 1990) assess the potential for property-rights based management instruments to address the problems detected.

3. THE ROOTS OF MANAGEMENT FAILURE

Conclusions from the multisectoral workshop corroborated previous findings from a diagnosis of the use of the marine-coastal resources in the Baja California Peninsula (Enríquez and Danemann, 1998), which found widespread institutional failures that are common to all coastal states in Mexico. The main problems besides demographic pressure include: open access; undefined or unenforceable property rights; excessive centralization of decision making, market power, administrative inefficiency, corruption and weak enforcement of regulations.

Under the above scenario, the outlook regarding fisheries includes accelerated overexploitation of the most valuable or fragile stocks, continued overcapitalization of the fleet, economic rent dissipation and increased social conflicts for access and over competing uses.

4. RATIONING ACCESS TO SCARCE FISHERY RESOURCES

Poorly defined property rights to land, natural resources and the environment continue to be among the major obstacles for the development of the coastal zone in Mexico. In fisheries worldwide it has been widely documented that lack of clearly defined property rights promote over exploitation of many fish stocks and wasteful use of scarce capital assets.

In Mexico, public access to the marine commons is granted by the Constitution. In spite of current fishing regulations, a *de facto* open access to fishery resources exist due to this mandate and cultural tradition. To make the situation even worse, for most of the second part of the last century, the fishing sector received widespread support from the federal government in the form of several types of subsidies. As a result, fishing capacity and effort increased to such levels that hinder the realization of net economic and social benefits from the country's valuable fishery resource and are threatening the biological viability of many important fish stocks.

The federal government regulates all fishing operations in Mexico. The current version of the Mexican fishery

law was passed in 1992. In 1999 the rules and regulations emanating from the fishery law entered into force. In this law and resulting by-laws the primary instruments for regulating commercial fishing access are permits and concessions. With a few exemptions, all regular commercial fishing operations taking place in national waters require either a permit or a concession. No permit or concession is required for subsistence fisheries.

A concession has a span of 5 to 10 years with the possibility of renewal. Concessions are granted on the basis of an economic and technical feasibility study and are assigned to vessels or effort units, for fishing a specified set of species in a given area.

Permits have a span of up to four years are renewable and do not require a feasibility study. Permits can be assigned to vessels or unit efforts for fishing operations requiring low investment. A separate permit is required for each fishery

Both concessions and permits constitute highly attenuated forms of access rights to fish stocks. As already stated their duration is limited. Neither permits nor concessions are divisible nor can be owned by foreigners. These instruments cannot be traded and cannot be leased nor subleased. They are not exclusive and can be transferred only with the permission of the federal fishing authority. Ineffective enforcement makes these already weak property rights instruments even more attenuated.

Since trade of permits or concessions is not explicitly permitted in the fishery law the potential for market based individual or vessel quota allocation is severely restricted.

5. CONCLUSION

Working in collaboration with stakeholders, we address the problems raised by the current method of managing coastal and marine fisheries in Mexico. Presently from 20 meters inland of the mean high tide to the extend of the Exclusive Economic Zone, 200 nautical miles out to sea, is constitutionally defined a public property and is *de facto* an open access area without effective restrictions to utilization. The current federal system of management is too centralized and not working. Putting control of the resources at the state and municipality, or even better at the community level, and allowing them to develop access rules could be an effective solution.

In addition to an extensive administration decentralization effort, the widespread implementation of rights based management in Mexico will require mayor consti-

tutional amendments. With a real chance for the right wing opposition party to win the nation's presidency for the first time in over seven decades, a constitutional overhaul contemplating stronger property rights provisions over coastal and ocean resources could be a conceivable scenario. Such an effort however is likely to face strong political and social opposition.

According to the results from the interviews and workshop, most experts in the field and many fishermen agree that a better definition of property and access rights to fishery resources may create the conditions for a more efficient use and provide stronger conservation incentives. For the widespread artisan fisheries, territorial user rights and community-based quotas were pointed out as some with the most potential.

For some industrial fisheries such as tuna, billfishes and small pelagic fishes ITQs, have also an important potential if monopolization of quotas can be kept at bay.

6. REFERENCES

- Anonymous, Anuario Estadístico de Pesca 1999, Secretaría de Medio Ambiente Recursos Naturales y Pesca, Dirección General de Comunicación Social, México, D.F., 241 pp., 2000.
- Anonymous, Desarrollo de los Sectores Pesqueros y acuícola de México: Prospectiva y estrategias. Camara Nacional de la Industria Pesquera, México, D.F., 41 pp., 1999a
- Anonymous, Anuario Estadístico de Pesca 1998. Secretaría de Medio Ambiente Recursos Naturales y Pesca, Dirección General de Comunicación Social, México, D.F., 241 pp., 1999b.
- Anonymous, Anuario Estadístico de Pesca 1997, Secretaría de Medio Ambiente Recursos Naturales y Pesca, Dirección General de Comunicación Social, México, D.F., 241 pp., 1998.
- Anonymous, Programa de Pesca y Acuicultura 1995-2000, Secretaría de Medio Ambiente, Recursos Naturales y Pesca, Mexico, D.F., 96 pp., 1996.
- Enríquez-Andrade, R. R.; and Danemann, G. D., Identificación y establecimiento de prioridades para las acciones de conservación y oportunidades de uso sustentable de los recursos marinos de la Península de Baja California. Reporte presentado al Fondo Mexicano para la Conservación

de la Naturaleza A.C.; Pronatura Península de Baja California: 6 pp, 8 annex and a CD., 1998

FAO, El estado mundial de la pesca y la acuicultura 1996, Organización de las Naciones Unidas para la Agricultura y la Alimentación, Departamento de Pesca, Roma, 125 pp. 1977.

Nijkamp, P., Rietveld, P., and Voogd, H., Multicriteria Evaluation in Physical Planning. North Holland, Amsterdam, 219 pp, 1990.