



## POLICY BRIEF 2018/1

# Crisis or opportunity? A critical glimpse on the sustainability of the Mexican fisheries regime

## SUMMARY

Seventy percent of countries worldwide whose fisheries catch more than 1,000,000 metric tons yearly are from the developing world. These massive fisheries developed rapidly since the 1970s, and current fisheries regimes had only limited time for adequate training and building institutional capacities. Thus, achieving Sustainable Fisheries Management (SFM) is an enormous challenge for those countries and involves enhancement of domestic research and management capacities. Mexico's case contributes to clarifying the complex situation as the local government has spearheaded SFM adoption. With almost 50 years of intensive exploitation, the domestic fisheries regime has now responded to a situation of massive overfishing through adopting an SFM regime, but without a profound and critical reflection on the contextual implications.

To understand the status of the Mexican fisheries regime, the research project examined the history of the co-development of fisheries and environmental policies (1934–2009) and the academic research system supporting fisheries. The aim was to recapitulate the lessons learned during SFM adoption in Mexico in order to enhance the understanding of fisheries scientists and decision-makers of domestic conditions and challenges.

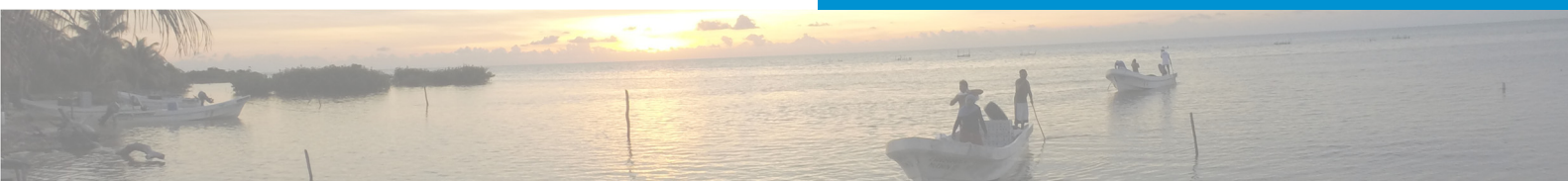
Knowing that identical circumstances as in Mexico are unlikely to re-occur, and SFM is a challenge even for consolidated fishery systems in developed countries, a historical perspective traces the critical factors with sporadic or recurrent presence and variable influence on the decision-making process in Mexican fisheries.

## KEY RESULTS

- Contrasting situations cause a tug-of-war: Economic, scientific, and technological forces lead to sustainable fisheries, but policies drift between positions not in phase with international fisheries policies.
- National capacity development increasingly supports research for sustainable fisheries development. But uncoordinated development of the research system focuses on commercially high-value resources, rendering the renovation of the system regionally inconsistent.
- The fast-track adoption of SFM has failed in a national context due to the challenges of SFM. A complicated mixture of management and academic vestiges make long-term SFM goals overrun by short-term needs.

## KEY RECOMMENDATIONS

- Government should address power imbalances and the lack of knowledge and accept that long-term harvests require large shifts in policy and lifestyle.
- Implementing preferential rights of local/indigenous people of the 2007 Fisheries Act needs strengthening.
- Fisheries management should consolidate domestic forces for long-term strategies: fisheries governance, management instruments, and knowledge expansion.
- Interdisciplinary consultation should formulate practical solutions to the core problems of fisheries management.
- Challenges need to be addressed through strategic planning considering regional contexts, local circumstances, and lessons learned from successful SFM.



## CONTEXT

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Mexico is a developing country with a recent history of massive fishing. Its multi-species fisheries regime focuses on high-commercial-value pelagic fish and shrimp fisheries, which account for two-thirds of the total Mexican marine catch. While a large part of the national seafood is exported, small-scale fisheries, supporting the livelihoods for about 275,000 national fishermen, are regionally important for alleviating poverty and satisfying domestic consumption. After only 50 years of intensive exploitation, 70% of Mexican fish stocks are currently considered at maximum exploitation and 20% as already deteriorated. This overexploitation is due to an intricate combination of overfishing, conflicts between fleets, illegal fishing (out of season, restricted areas, using restricted gears), and unreported catch information. In the Mexican coastal zone, fisheries resources are also subject to threats such as habitat loss, alterations of coastal dynamics, and marine pollution from terrestrial sources.

To reverse the systematic depletion of key species and the habitat degradation caused by unplanned fisheries, the Mexican Federal Government adopted sustainable

management principles since the 1990s. This process included new legal instruments and escalated the scientific sector as the main actor to lead the discussion regarding the development of national SFM strategies through a more holistic understanding of the domestic context.

However, although SFM has been adopted at the highest level of the Mexican legal framework, its successful implementation still faces a series of complex challenges. One challenge is that these massive fisheries are relatively recent (the 1970s onwards), therefore the time for training and building domestic capacities (e.g., public participation in natural resources planning, improvements in the policy framework) was relatively short. Moreover, a rapid turnover of several contrasting resource management policies emerging from difficult and dynamic socio-political conditions complicated matters. Often, fundamental domestic debates were rather limited to political and moral principles (e.g. improving the material conditions of life as a central goal), than covering technical and economic choices.

## RESEARCH RESULTS

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In the Mexican fisheries regime, historical phases have been identified in which there are few long periods of stability and frequent short periods of radical change. These short and contrasting contextual situations cause a kind of tug-of-war in Mexican fisheries policy-making. Domestic economic, scientific, and technological forces seem to lead slowly towards the consolidation of sustainable fisheries. Domestic policies, however, drift from one position to another, often out of phase with international fisheries and environmental policies. For instance, the Code of Conduct for Responsible Fisheries — promoted by FAO in 1995 and the federal Mexican administration to adopt the sustainable-development paradigm in the fisheries arena — has been inhibited by inconsistent, and sometimes contradictory, policy directions.

Thus, because administrative and cultural vestiges from the old fisheries systems still remain in current domestic policies and legislation, it is not clear yet how SFM can be successfully implemented in Mexico.

### **Centralised and sectorial decision-making process**

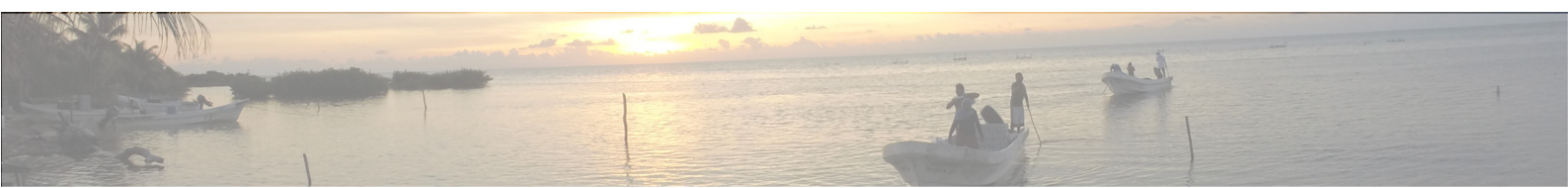
The administrative system to manage natural resources in Mexico remains in many senses corrupt and bureaucratic, and the highest laws are mere guiding frameworks. This weakness in the legal framework

governing coastal and marine areas in Mexico is mainly possible because of the centralised fisheries system but also because of gaps in the normative fishing framework. Consequently, surveillance programs fail, the reliability of catch data collection is frequently questioned, and there are still laws that are opposed or contrary to each other.

The lack of trust between government levels allows the continuation of sectorial fisheries management in Mexico, where resources are being administered independently by sectors that have accumulated political power over the years with the justification of job creation. In addition, productive sectors are economically inefficient, which has led to the persistence of inappropriate subsidies and to the overexploitation of most fisheries resource populations and has hampered the relationships between non-governmental organizations (NGOs), governmental institutions, and social sectors.

### **Short-term political vision**

Mexico is a country of discontinuity. It is hard to pursue a long-term vision in Mexican society given the prevalence of urgent needs and radical changes in the government and political system every six or three years (federal/state governments and municipalities, respectively). The new governments in power reinvent



the fisheries programs from the top. Therefore, decisions on fisheries research are based on political objectives that, most often, respond to urgent social issues, such as the difficulty in sustaining fishing livelihoods.

### **Vulnerable research system**

The Mexican research system depends almost exclusively on federal funding, which is focused on data generation for supporting changing government policies. Long-term fisheries research funding is rather complicated because of the low priority of the sector on the political agenda. Consequently, research funds are uncertain and limited. The situation of uncertain and scarce funds has caused the disintegration of organised long-term research efforts and has led to a domestic research focus, which lacks conceptual or contextual reflections and mainly responds to international scientific fashions.

### **Inconsistent capacity building**

Academic institutions began to include SFM concepts as part of their study programs two decades ago, and the new schools, research centres, and undergraduate programs designed under these paradigms are so new that trained academics are difficult to find. Not even

government entities have the human capacity to propose an agenda for SFM, so they often call on external scientific expertise to conduct research projects. As a consequence, conceptual misunderstandings are common and the integration of principles based on the ecosystem has often been inadequate. Thus, the integration approach is not viewed as a current and urgent necessity in marine management because its function in the decision-making process is unclear. Integration has been limited to working with colleagues in the same disciplines, where each investigator performs his or her part without a comprehensive holistic and interdisciplinary approach.

### **Applied sectorial approaches**

To the Mexican fisheries system, integrated management is synonymous with applied research, which continues to support sectorial research aimed at the diagnosis and technical management of species that are economically important or protected. Consequently, SFM remains only superficially important because there is no consideration of humans as part of the ecosystem. Socioeconomic issues seldom receive consideration concomitantly with ecological issues in national fisheries planning.

## **POLICY RECOMMENDATIONS**

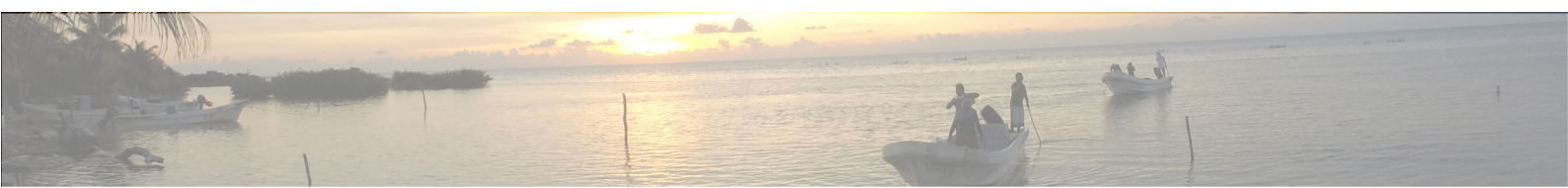
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Policy adoption is not the same as policy implementation. In Mexico, government, fishers, scientists, NGOs, and consumers need to accept that there are mounting problems. A critical attitude should be taken towards current policies adopted by most businesses and regional governments and current trends within society. To reform the process towards a SFM regime, the government should address the challenges related to imbalances/injustice and to the lack of knowledge and information and accept that large shifts in policy and lifestyle, many very profound, will be needed to sustain long-term harvest of aquatic resources.

Recent environmental, economic, and political crises in Mexico seem to pave the road for a new period of unfavourable conditions for fisheries management. If the centralised and short-view system continues to operate, contextual conditions may increase the vulnerability of domestic policies in developing countries and may promote the rapid adoption of fisheries policies designed in other places. Nevertheless, in contrast to previous periods and resource management approaches, contemporary sustainable fisheries management approaches attempt to consolidate domestic forces as a basis for long-term strategies (Figure 1).

To reach an effective social support to control measures, more **comprehensive stakeholder engagement in governance schemes** is needed. Fisheries management has to evolve in order to prioritise the implementation of long-term governance schemes involving stakeholders that represent the government, the markets, and the civil society. In this way, new fisheries policies need to promote the analysis and study of integrated resource management strategies, where inter-institutional teamwork includes negotiations with other resource managers to resolve conflicts. Thus, during the processes of domestic fisheries devolution, a greater local participation in SFM implementation should be promoted to increase cooperation among responsible parties regarding the social agenda. This is fundamental to co-management strategies such as territorial fishing rights (TURFs) and no-take zones or spatial-based instruments such as marine spatial planning.

**Improved management instruments** are urgently needed to inform policy decisions with the strongest possible basis in principles that link social and environmental issues to human equity. Useful decision support tools such as Strategic Environmental Assessment (SEA) have to be implemented, as well as sustainable fisheries businesses to be promoted. In this way, fisheries certification is a potential tool for SFM



because it adds value to the fishery products and improves the communication among producers and consumers of fisheries resources. Economic incentives and disincentives (e.g., taxes, buy-back programs) would reduce the level of conflict by allocating quotas and fishing areas to users. A key role of governmental agendas in moving towards sustainable development is to encourage and sometimes control changes to taxes and subsidies, the targeting of research, and the dissemination of information. As no single instrument successfully accomplishes all SFM goals, and not all management approaches are appropriate in every situation, fishery managers should select and utilise a set of multiple mutually reinforcing management tools.

**Expanding knowledge** is a priority to collect and process data or combinations of data for the purposes of enhancing assessment, communication, transparency, effectiveness, and accountability in SFM. It is fairly well understood that despite the shift to using ecosystem approaches, single-species or sectorial management can still be appropriate to consider. Research frameworks are required that do not exclude fishery assessment tools or

basic research that analyses, e.g., the complexities of each fishery's context, habitat change, adaptability, and competition with protected and non-target species.

**Data generation for supporting SFM should turn around three axes: economic, social, and environmental.** Thus, SFM research should look for interactions, and ecosystem management will require information on other ecological levels or social and economic sectors (e.g., level of employment, labour earnings, administrative costs).

A main **research focus should be on public fisheries governance**, where policies bridging science and society are a priority. A priority factor for integrative research will be finding the motivation, human resources, tools, financing, and protocols to compile and analyse large, complex data sets from both natural and social scientists into a single assessment. Another main line of research focuses on resource productivity and its relation to social and economic welfare, job creation, and environmental effects. Alternative information coming from fishermen, such as empirical knowledge and perception, should be also embraced by research on SFM.

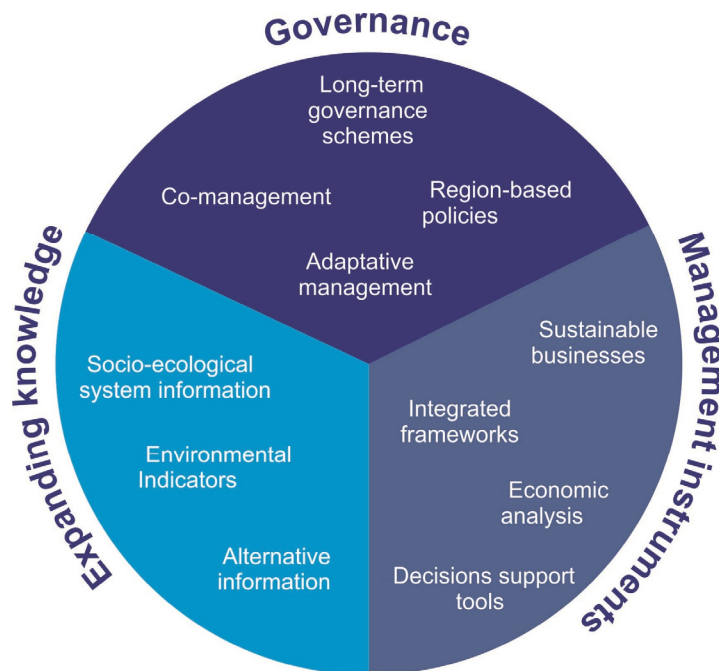


Figure 1: Three key sustainable fisheries management strategies that would be useful to consolidate domestic forces as a basis for long-term strategies in Mexico.

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This Policy Brief is part of a series aiming to inform policy-makers on the key results of the ZMT research projects and provide recommendations to policy-makers based on research results. The series of ZMT Policy Briefs can be found at [www.leibniz-zmt.de/en/research/publications/policy-briefs.html](http://www.leibniz-zmt.de/en/research/publications/policy-briefs.html). This publication was commissioned, supervised and produced by ZMT. DOI: 10.21244/zmt.2018.001. You can find more information about the project [here](#).

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