

# India Marine Fisheries

Issues, Opportunities and Transitions for Sustainable Development



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Agriculture and Rural Development Sector Unit South Asia Region

## Introduction

India is endowed with a wide diversity of water resources, which sustains a large fisheries sector in the country. With a coastline of 8,118 km, the country ranks third in the world in total fish production and second in inland aquaculture. India contributes nearly five percent towards global fish production. The Indian fisheries sector has registered an average annual growth rate of around four percent during the last five years.

A study was conducted as a collaborative initiative by the World Bank and the Department of Animal Husbandry, Dairying and Fisheries – Ministry of Agriculture, Government of India, to review the marine fisheries sub-sector, within a broader sector that also includes aquaculture and inland fisheries. The study is based largely on background papers developed from analyses of marine fisheries in Andhra Pradesh, Karnataka, Gujarat and Orissa. These states were identified by DAHDF in consultation with the state fisheries departments, ensuring that the study covered both east and west coasts. The field work, consisting of focus group discussions, key person and household-level interviews, was conducted in major coastal ports, rural landing centers and fishing villages. Other important information was gathered from secondary sources in cooperation with various

government agencies and national fisheries research institutions. In particular, secondary data and various reports from Tamil Nadu and Kerala provided a rich source of information, and also helped confirm that the patterns emerging from the four focal states could reasonably represent a national picture of marine fishing. The resulting report briefly describes how marine fisheries have evolved over time in India, identifies key issues and opportunities, and sets out proposed reforms that could support more effective policies and management practices to gradually improve the productivity of fish stocks, increase net benefits, and improve equity and coastal livelihoods. The outcome and findings of the study represent a major step forward in understanding current issues and future opportunities facing the marine fisheries sub-sector.

## The marine sub-sector

According to Government of India figures, the marine sub-sector accounts for approximately 39 percent of the total national fish production of 7.60 million tonnes, while inland fishing accounts for 61 percent of total fish production. In addition to accounting for approximately one percent of the national Gross Domestic Product (GDP), the marine fishing sub-sector also forms an important component of the rural coastal economy. It generates income, employment,

livelihoods, and food security for an estimated 3.52 million people in over 3,000 villages along the vast Indian coastline, who depend on fishing for their livelihoods. Close to 100 percent of working people in these small coastal communities are engaged in marine fisheries-related livelihoods. Nearly half are involved full-time in marine fishing and related work such as processing and trade. The majority of coastal fishers are small-scale operators, fishing in inshore waters.

Coastal fishing communities, while generally having good access to health care, roads and electricity, are also characterized by low levels of education, high illiteracy, and poor access to piped water and sanitation. The majority of small-scale participants in the sub-sector are poor, and annual earnings below Rs 25,000 (US\$ 570) are not unusual. Debt levels are generally very high, made worse by the lack of regular cash surpluses from fishing, problems in finding alternative income during lean fishing seasons, and being able to fish only during the usual nine-month season. These factors often lead to a perpetual cycle of debt for many smaller-scale fishers.

The marine sub-sector has experienced three recognized phases of development. Phase I was a pre-development stage (up to 1965) where fishing was still largely dominated by small indigenous craft and gear, and mechanization was in the very early stages. Phase II (from 1965 to 1986) reflected a major expansion in the use of synthetic gear, focus on exports, increases in the number of larger mechanized vessels, government investment in new fishing harbors, introduction of purse seine harvesting, and the start of motorizing smaller, artisanal boats that could now extend their range further offshore.

Phase III (1986-2000) was characterized by rapid growth in motorizing the artisanal fleet, further extension of fishing offshore and extended voyage fishing, and introduction of seasonal closures of selected fisheries as concerns developed over depleting fish stocks. A fourth phase (post-2000 modernization) is now emerging, characterized in inshore areas by declining fish catches, depleted fish stocks, increasing conflict over fish resources, and mounting investment needs. Currently, the country is trying to expand fishing activities in its 2.02 million km<sup>2</sup> offshore Exclusive Economic Zone (EEZ), where there may be scope for further growth.

The sub-sector can clearly generate greater net benefits and become a stronger engine for rural economic growth and social development in coastal India. However, to achieve this potential, a program

of reforms, carefully implemented over an extended period of time at both national and state levels, must address core policy, legal, institutional and fisheries management issues, especially for inshore waters.

## International best practice

Unmanaged marine fisheries face chronic economic overexploitation and overfishing largely because of open access characteristics. Open access situations can destroy incentives for conservation and promote inefficient allocation of resources. Successful fisheries management, based on maximizing net benefits will achieve biological sustainability, because resource users possessing well-defined use rights know that they need a healthy resource base to generate, sustain and increase the value of the fishery. Identifying goals (maximizing net benefits, rents or 'wealth') and constraints (sustainability) is therefore essential.

Wherever fisheries management systems are moving towards a more holistic approach (e.g. New Zealand, Namibia, Chile) – by focusing on maximizing net benefits and allocating more well-defined rights to the resource – these are proving to be more economically successful than more conventional biological approaches. A set of guiding principles is now beginning to emerge relating to success in fisheries management, which can form the basis of international best practices in the future, and which in theory could be applied across different situations (large or small countries; simple or complex fisheries; single country or federal-states systems). These emerging best practices (albeit at an early stage in most of the countries) represent a good opportunity for India to review its marine fisheries sub-sector, make relevant and objective comparisons, and identify future options for more effective sub-sector development. At the same time however, it is important that these lessons be evaluated carefully in the Indian context.

## The Indian context

Although certain industry and service sectors of the burgeoning Indian economy have become world leaders with innovative growth and development, much of the rural economy in India, including coastal areas dominated by marine fishing, is lagging behind. Sustained economic growth is critical for India to address poverty, and marine fisheries can play a part in this process.

Yet, the sustainability of fish stocks in Indian waters, particularly for inshore waters, appears uncertain.

Most of India's capture fisheries are either overexploited or fully exploited with very little prospect for future expansion. This is particularly the case in inshore waters where sustaining economic benefits may be difficult. Catch rates are declining, the marine fishery is overcapitalized by a factor of more than two; and the large number of boats not actively fishing clearly point to overcapacity and poor economic returns. While the government of India is encouraging a shift to more distant deep water fishing in the outer reaches of the EEZ, the majority of fishers operating in inshore waters will continue to face constraints.

India thus brings exceptional challenges in reforming its marine fisheries because of the large number of participants, boats and on-shore infrastructure, poor regulation and management, and a traditional focus on increasing fish catches as a central policy mechanism for pro-poor growth. Revitalizing India's marine fisheries sub-sector will likely require major changes in policy and governance with respect to stronger access and use rights, which could limit and in some cases reduce access to selected inshore fisheries that have excess fishing effort relative to sustainable stocks.

## Findings of the study

A review of economic, social and environmental performance suggests that fisheries management in India is meeting only a few policy outcomes against stated planning goals established by the government. The continued policy focus on increasing fish production, underpinned by capacity and infrastructure improvement in the face of increasing resource scarcity is not a sustainable option for the future. The current approach to fisheries management is not addressing over exploitation, nor contributing to more positive economic and social outcomes, particularly for inshore fishing.

At its core, India's marine fisheries policy needs to move away from a focus on production and capacity development, towards the generation of sustainable net economic benefits to contribute to a broader economic growth and poverty alleviation, while also providing stronger incentives for resource conservation. Any recasting of sub-sector policy objectives must be supported by the building of necessary institutions and capacity to put this new framework into effect, in addition to targeted legal reforms. There are good examples to build on, such as recent attempts by Gujarat and Orissa to update their laws, and with Tamil Nadu now beginning to engage in a comprehensive

policy/strategy revision process. Although India has some positive local experiences to build on, in general the country would benefit from a more comprehensive and effective fisheries management system on which to gradually develop this new future. Interim measures can be undertaken to improve basic fisheries management, provided these are consistent with long-term reforms.

The impact of future policy change will need to be evaluated and managed with care in terms of the economic value that might be generated, and with impartiality in how this value could be best allocated to ensure the sustainability of coastal communities. Fiscal flows from the center to states for marine fishing are not directly linked to fisheries management but instead mainly support welfare programs for fishers and infrastructure. These investments address important socio-economic policy goals, but at the same time, some of the non-welfare programs and strategies that often focus on improving technology (for boats, gear, nets, fuel, etc) may also be providing the wrong economic signals to inshore producers. These may be providing the wrong economic signals to inshore producers and can continue to encourage fishing overcapacity. Fishing benefits are often seen in terms of employment and livelihoods for the poor. Fishers have poorly defined and unenforced use-rights for fish, often contributing to an open access, common property situation that provides strong incentives for immediate exploitation.

Government agencies directly involved in the marine sub-sector and primary resource users suffer from implementation failure. Ineffective administrative systems, as well as capacity and equipment constraints make it difficult for state fisheries departments to support improved fisheries management performance, especially for inshore waters. The lack of a single, strong central Ministry for fisheries also weakens the position of the marine sub-sector within the overall government machinery.

Product quality remains an issue for both marine and inland fish, leading to losses of up to 15 percent of harvest plus lower prices for poorer quality fish that are sold. Smaller-scale fishers are often unable to gain access to more efficient marketing systems and supporting infrastructure (ice, cold storage, etc.) that would lead to better quality and prices. There is inadequate information about market requirements both in India and globally, and poor access to market information processors. (especially for small-scale fishers).

Four important issues need to be taken into account by policy makers:

- I. The success and impact of new approaches for fisheries management will depend, to some extent, on design and implementation that accounts for national and local conditions, and putting in place appropriate mechanisms and instruments to help sub-sector participants to cope with these changing conditions;
- II. The process of allocating stronger fishing rights must be decided early on through extensive stakeholder consultation. Fishing rights can be allocated in any way that policy-makers desire, including favoring disadvantaged fishers. Considerable time may be required to build capacity among stakeholders to even engage in this consultation process;
- III. Care will be needed before a change in approach to fisheries management is pursued; the true costs of change versus no change must be made explicit and transparent to policy-makers and other stakeholders. Where fisheries may be providing a 'safety-net' for the poor, further mechanisms must be developed to invest in pro-poor fishing, alternative non-fishing

employment, and indirectly in education or infrastructure;

- IV. The development of new and more progressive fisheries management approaches in any country will produce winners and losers. Difficult political choices are inevitable; impacts must be monitored, and compensation mechanisms put in place.

## Summary of key opportunities

India's marine fishing sub-sector has the potential to develop a more valuable asset base (by **building more productive fish stocks**); generate a higher level of sustainable net economic, social and environmental benefits in the future (by **capturing the inherent value of more productive fish stocks**); and improving the distribution of these benefits (by **providing for better equity among stakeholders**). The sub-sector can build on the strengths provided by an experienced labor force, a long history of fishing, good local examples of fisheries management, and expanding global and domestic demand for high quality marine fish products. Marine fisheries can become more highly integrated with India's growing rural economy and the wealth generated can help provide coastal dwellers with new opportunities to engage in this growing economy.

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