



WorldFish

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WORKING PAPER

Small-Scale Fisheries Management and Governance

Most of the world's fishers live in developing countries and work in small-scale fisheries and their related downstream industries (small-scale fish trading and processing).

Box 1

- **Large-scale industrial or commercial fisheries** use relatively capital-intensive fishing technologies, with harvesting and processing equipment owned by commercial entrepreneurs and operated by salaried crews.
- **Small-scale or artisanal fisheries** are a more traditional, typically labor-intensive form of fishing performed by men, women and children from fishing households. Although sometimes mechanized, more often these small-scale methods involve fishing from small boats or from shore or by gleaning and use of traditional fishing gear, such as hand lines, small nets, traps, spears, and hand collection methods. Fish are marketed from small-scale fisheries, and there is extensive international trade of some products. However, for poorer fisher families, including a high percentage of female-headed households, the catch is mainly eaten by the family and this is referred to as subsistence fisheries.

Despite the distinction made between large and small scale fisheries (Box 1), these definitions are applied variably in different countries and regions. As a result, combined with the absence of a comprehensive and accurate census of those engaged in the sector, the exact number of fishers is difficult to estimate. Where estimates do exist however, these vary widely—ranging from 12 million to as many as 50 million men and women directly involved in catching fish globally. Other estimates indicate that:

- 96% of fishers worldwide are small scale (38 million estimated in 2002 by the Food and Agriculture Organization (FAO));
- At least 20% of those employed in fisheries earn less than US \$1 per day;
- The number of full-time fishers has been growing at an average rate of 2.5% per year since 1990—a total of 400% since 1950 (by comparison, the number of agricultural workers increased by 35% in the same period);
- The number of part-time fishers increased more rapidly than full-time fishers between 1970 and 1990: the number of full-time fishers doubled while the number of part-time fishers increased 160%;
- These fishers produce approximately 58% of global fish catches annually;
- Women are more likely to be involved on a part-time basis in capture fisheries activities due to the level of other household responsibilities.

Small-scale fisheries have a diversity of roles, ranging from generation of export and domestic cash revenues to more complex and often ill-defined contributions to social welfare and economic development. They take place in rural, peri-urban and urban-industrial areas. Conventional fishery science approaches to evaluating their economic potential and managing them are almost always inadequate and often largely irrelevant because they fail to address the issues that threaten the economic efficiency or viability of the fisheries. To address this ~~weakness~~ new approaches are now being developed that build on recognition of small-scale fisheries as complex social-ecological systems and aim to build their capacity to persist and provide benefits to society in the face of future changes.

This new approach to investment in the small-scale sector is emerging not because of a romantic attachment to 'artisanal' and 'traditional' forms of production, but on the basis of observed necessity and economic rationality: most of the world's fisheries comprise small-scale units

1. IS SMALL ALWAYS BEAUTIFUL?

Small-scale fishers have been championed as guardians of tradition and effective stewards of ecosystems, as well as more efficient resource users that generate higher economic multipliers through their greater integration with the wider economy. These functions, which balance satisfaction of economic, social and cultural needs, and encompass individual, community and inter-generational benefits, have been contrasted favourably with the supposedly individualistic, competitive, short-term, profit-maximising imperative of the large-scale 'commercial' fisher. The gear small-scale fishers use is said to be less destructive, they employ more people and generate more cash per tonne of fish caught, and burn less fossil fuel to do it.

There is good empirical evidence to suggest that much of this narrative is applicable to some small-scale fisheries. There is equally good evidence to suggest it isn't applicable to all. Small scale fishers can be profit-orientated and use destructive gear; dynamite is an artisanal fishing method. Not all fishers are part of a long fishing-tradition; the sector attracts youths and men and women from both rural and urban areas in

of production, and these have persisted into the 21st century—despite fifty years of policy and development support for their replacement by large-scale fleets. The new approach recognizes that their persistence is a potential strength, one with which to engage and develop where possible.

To harness the potential of small-scale fisheries, investments in management and governance need to approach small-scale fisheries as integrated social-ecological systems, offering greater prospect for capturing and sustaining their development potential. This suggests a shift in management goals, away from attempting to manage for maximum sustainable yields or maximum economic yields, towards building resilience of the fishery system—with resilience being defined as the ability of the fishery system to persist in the face of shocks and changes, while continuing to deliver services to poverty reduction. In doing so, these investments can build on the successes in small-scale fishery management that are now emerging.

search of opportunities to generate cash incomes to invest elsewhere. Such fishers are unlikely to have a resource conservation incentive or to feel solidarity with community, culture and place, much less to have an intergenerational resource stewardship ethic.

Thus, the case for support for small-scale fisheries needs to be built on critical analysis of the economic importance and success of each fishery. Their success is relative to both larger-scale fisheries – which can be profitable in the short-term (sometimes with the aid of subsidies) but vulnerable to a range of stresses—and to small-scale agriculture, which has not achieved the degree of market integration already seen in small-scale fisheries and has therefore largely failed —so far— to act as the anticipated 'engine of growth' in agrarian-dominated societies, particularly in sub-Saharan Africa. As increased investments are made to realize agriculture's undoubted development potential, there is much that can be learned from fisheries and much that can be gained by building on the roles that small-scale fisheries play in rural economies across much of sub-Saharan Africa and large regions of Asia.

2. IS SMALL ALWAYS SUBORDINATE TO ECONOMIES OF SCALE?

An alternative to the 'small is beautiful' view suggests that the contribution that fisheries could make to the wider economy is hampered by production inefficiencies related to scale. The highly dispersed nature of fishing and trading operations, the lack of vertical integration along the marketing chain, lack of specialization among fisherfolk, and failure to separate business from household accounting are all regarded as scale-related inefficiencies. This further suggests that development assistance to scale-up individual fishing enterprises and upgrade and centralize marketing chains would bring greater economic benefits from fisheries to wider society. A small, efficient fishing industry, landing at a few, government legislated fishing ports and linked to an efficient export-orientated marketing system looks attractive from both an economic efficiency and resource and value-chain governance perspective. Yet, despite many attempts to transform the fishery sector in this image over the last 50 years, the sector remains dominated by small-scale producers. Modernisation and 'professionalisation' of fisherfolk has not been as rapid or universal as anticipated, and the projected demise of small-scale fishing has not taken place. To the contrary, there are cases (e.g. in the African Great Lakes, and along South Asian coasts) where large-scale fisheries have been out-competed by artisanal fisheries. In Europe, the only unsubsidized fleets that are maintaining or increasing catches and revenues are the small-scale, inshore fleets targeting high-value shellfish species. There are two principal reasons for this:

- Larger-scale fisheries are more vulnerable to shocks and governance failures. With high capital investment, demanding requirements for reliable infrastructure and services, technology support systems and efficient supply chains, and effective resource governance (including stock forecasting and secure systems of access rights), such fisheries are at risk in a context where infrastructure and services are unreliable and

governance ineffective. In Lake Tanganyika in the 1990s, for example, the industrial purse-seine fleet targeting small pelagic fish was out-competed by the local canoe fleet when its fuel oil supply, processing facilities and marketing channels were undermined by civil conflict in Eastern Congo and Burundi. Small-scale distributed networks of fish suppliers were able to find ways around disrupted communications infrastructure, and the artisanal fleet was able to supplement or replace outboard engine power with sail and paddle when fuel oil was unavailable or too expensive¹.

- Small-scale fisheries are also more resilient to shocks and adaptable to changes because they are embedded within the broader economy at so many levels—from individual to regional—and through so many linkages. In inland fisheries, there are often strong links between fisheries, agriculture and other rural activities, at individual, household and local production-system levels. In coastal fisheries, fishers and traders can be highly mobile, and have long-established social and market connections across international borders allowing them to operate flexibly over large regions, in response to changing market, ecological or political conditions. Such mobility is a feature of West Africa's coastal fisheries, for example. Networks such as these, with many nodes and pathways, are robust and adaptable in the face of change².

¹ Petit, P. and A. Kiyuku. 1995. Changes in the pelagic fisheries of northern Lake Tanganyika during the 1980s. In: Pitcher, T.J. and P.J.B. Hart (eds): *The Impact of Species Changes in African Lakes*. Chapman & Hall, London.

² See papers produced by the DFID/FAO Sustainable Fisheries Livelihoods Programme (www.sflp.org) for a review of migration studies in West African fishing communities.

3. INNOVATIONS IN SMALL-SCALE FISHERIES GOVERNANCE

In the last decade, policies on fisheries development have started shifting towards more sustainable management. The paradigm of capture fisheries management has also changed—from a narrow, predator-target prey basis to one based on accounting for effects on other parts of the ecosystem in which a fishery is embedded. Fisheries management now has not only biological objectives but institutional, political, and social objectives. This new approach to fisheries management takes into consideration integrated coastal resources management; rights-based management where fishing rights provide exclusive or preferential access to aquatic resources by individuals or groups; and co-management, in which government and resource users share responsibility for managing the resources. There has also been increasing integration

of fisheries management with marine protected areas and use of fisheries reserves. These newer approaches have the potential to expand the role and participation of diverse stakeholders, including both women and men, in decisions about fisheries resources management. This is a step in the right direction. However, the capacity to implement such approaches is largely lacking and many of the management actions needed require moving capital and people out of the fishing sector—a move that requires strong political will that at present is largely absent. In spite of these challenges, if fisheries are governed responsibly and equitably, the sector has great potential to contribute to poverty reduction, economic growth, biodiversity conservation, sustainable livelihoods and peace and security.

4. PRINCIPLES FOR INVESTMENT IN STRENGTHENING GOVERNANCE OF SMALL-SCALE FISHERIES

- i. Support the continued operation and development of small-scale fisheries where this is possible. Unless there is compelling evidence that small-scale fisheries cannot operate efficiently (e.g., in offshore marine fisheries), development benefits are more likely to be maintained and widely distributed if the fishery is based on small-scale production units and decentralized marketing networks.
- ii. Promote the adoption of rights-based fishing, where the rights regime is built around customary tenure systems where these exist and have wide legitimacy, and is developed based on an understanding of the need for flexible, adaptive access rights that have good 'institutional fit' with livelihood strategies. Investment is required in strengthening government-community partnerships, building capacity of fishery organizations in the context of multi-stakeholder negotiations in coastal and water resource governance, supporting governments and communities to end illegal fishing, and developing business models to help sustain financially the community-level organizations required for management.
- iii. Ensure that compensation schemes or livelihood alternatives are included in programmes supporting a transition to rights-based fishing. Without such planning, excluded fishers may have no alternative livelihoods and require social security provision. It is also important that reductions in numbers of fishers is combined with management measures that ensure that this does indeed lead to a reduction in fishing pressure. The reduction in fishers should not be replaced by capital investments that sustain or even increase fishing pressure.
- iv. Support livelihood diversification. Diversified livelihoods are already a feature of many fishing communities, particularly inland ones. Development in rural areas where fishing is important may be served best by interventions that support complementary household activities. Encouraging alternative livelihood sources raises the opportunity income of fishing, with potential conservation and economic benefits. Mobility is also an element of a diversification strategy, and where it does not threaten resource degradation, it brings economic benefits and should be supported through recognition and strengthening of reciprocal or conditional access arrangements.
- v. Build on existing strengths and strategies of small-scale fisherfolk to increase their adaptive capacity and build resilience of the fishery system. Fisheries sector development analyses have tended to focus on what small-scale fisherfolk do not have —access to infrastructure, finance and technology— rather than what they do have—adaptable and flexible income-generating strategies, resilient resource management institutions, knowledge, skill and social capital. The key to sustainable fisheries management and development is to facilitate small-scale fisherfolk to find their own routes out of poverty by building on their existing capital and capabilities.

5. FURTHER READING

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