

## Key messages

- Fisheries, especially in developing countries, contribute to livelihoods in a range of ways: directly as food, as a source of income and through other social benefits, such as reduced vulnerability to poverty.
- Fishery-related livelihoods are often complex, dynamic and adaptive. Fishing might be engaged in full-time, as part of a mixed farming-fishing-livestock livelihood, or as a seasonal fall-back.
- Whilst fishers are often poor, the cash income generated by the sale of fish can give them access to basic goods and services such as education, health, food and other assets.
- Fisheries can reduce economic and food vulnerability, but they are themselves vulnerable to external influences such as environmental degradation and climate change.
- To implement effective management, decision-makers have to recognise the roles and importance of fisheries to livelihoods and ensure fisheries are sustainable.

This brief examines the ways that fisheries contribute to people's livelihoods, especially in developing countries, with examples from the Fisheries Management Science Programme (FMSP), and considers the implications for policy and future work priorities. This brief is one of a series of five concerning fisheries and development issues produced by the FMSP.

## Contributions of fisheries to livelihoods

A livelihood is made up of the capabilities, activities and assets (including both material and social resources) that contribute to a means of living. Livelihoods are influenced by policies, institutions and processes, and are affected by external factors such as shocks and trends (e.g. natural disasters and changing climate conditions) [1].

Examples of the contributions that coastal and inland fisheries can make to livelihoods are illustrated in Figure 1 and include:

### **Food and food security**

Fisheries provide a food and protein source to fishers' households and the wider population. Fish provide the main source of animal protein to about one billion people globally and in coastal areas the dependence on fish is usually much higher [2]. Inland fisheries are particularly important for the food security of poor people, as most inland fish production goes for subsistence or local consumption (see also Brief 3).

### **Employment**

Around 38 million people worldwide are employed in fisheries and aquaculture, 95% of them in developing countries. The majority are involved in small-scale fisheries [3]. Related industries such as processing and marketing also provide employment for approximately 50



Fishers on Lake Kyoga, Uganda. These men have few other options for employment or subsistence; fishing gives them a source of food and income. Photo by: T.Allsopp

million people. In some areas, a large proportion of the population is involved in fishing, for example a study in Tanga (Tanzania) found that 70-80% of males were involved in fishing [4]. Migrant fishers may employ agricultural workers as crew, providing seasonal employment and contributing to village economies.

### **Financial benefits**

Fisheries can provide an important contribution to household cash income. A study in Tanzania found that between 65 and 90% of fish production is sold, compared to only 15% of agricultural production in the same communities [5]. This cash income gives access to other benefits such as education, health services, clothing, other foodstuffs etc. It also allows investment in other assets or enterprises such as land, livestock or fishing gear, which in turn can further reduce vulnerability to poverty.



Figure 1: Contributions of fisheries to livelihoods. Photos by: centre: R.Arthur & C.Garaway; clockwise from top: D. Hoggarth, S.F.Walmsley, S.F.Walmsley, R.Arthur & C.Garaway, P.K.Pandit, R.Arthur

### Social and cultural benefits

Beyond the food, employment and financial benefits, there can be significant social and cultural outcomes attached to fishing. Fishers, their families and their wider communities benefit.

In fisheries that are community managed and fished, the income from fishing may go towards community projects and improving infrastructure and services for the community, or towards support for needy families. For example, in Lao PDR, increased production from inland enhancement fisheries provided greater community income for community projects such as building health centres, or to support poorer community members.

Fishing is rarely carried out alone and is often a very social activity, strengthening bonds between people and community cohesion. Research by FMSP in the Pacific showed that the benefits of community rules that limit fishing were primarily social, through community fishing days when the fish were harvested to provide a feast.

People often turn to natural resources when other livelihood options are limited, and fisheries can act as a 'safety net' for the poor. For example, during years of

conflict in Mozambique, many people who were displaced from their agricultural lands in the hinterland migrated to the coast and turned to fishing. However, problems are often associated with open-access arrangements which fail to control exploitation of the fish stock. The result may be overexploitation and reduced productivity of the fishery.

### Relationships between people and fisheries resources

Fishery-related livelihoods are complex, dynamic and adaptive. Some fishers engage in fishing full-time, all year round. More commonly though, people fish part-time. They may take advantage of seasonally available riverine, coastal and offshore resources, or they may fish part-time all through the year. This leaves time to engage in other activities such as farming and rearing livestock. Fishing often shows this high degree of integration with other economic activities at the local level, such as agriculture, trading and the provision of labour.

Different social or ethnic groups often adopt different livelihood strategies to exploit fishery resources (see Box 1).



Women selling crabs in Andhra Pradesh, India. Whilst men usually go out fishing, women are often involved in processing and trading activities. Photo by: S.F.Walmsley

Research shows:

- Livelihood strategies involving fishing vary widely;
- They often differ among ethnic and occupational groups, with different levels of dependency;
- Fishing activities are often very gender-specific with men and women taking on different roles.

Management strategies need to take into account the diverse and complex nature of fishery-related livelihoods. For example, co-management based on territorial rights of sedentary communities that exclude migrants may have a detrimental effect on people if it disrupts the mutual economic reciprocity that exists between different groups (see also Brief 5).

## Vulnerability and fishery-related livelihoods

Fish stocks fluctuate seasonally in abundance and availability producing high and low fishing seasons. When high seasons coincide with the seasonal low availability of other food sources such as agriculture, fisheries can increase food security. In addition, apart from seasonal inland fisheries where the river, reservoir or lake dries up completely, very few fisheries have periods when the catch is consistently zero, providing at least subsistence use all year round. At a higher level, the cash income generated from selling fish can be used to invest in other assets or livelihood diversification, which can further reduce vulnerability to poverty. Some studies have found that households involved in fishing have higher incomes than non-fishing households in the same villages or districts [6].

However, people involved in fishery-related livelihoods are vulnerable to a variety of factors. Fishing as an

### Box 1: Differentiation in fishery-related livelihoods

#### *Different strategies*

A study in Lake Malawi found that there were two main strategies for dealing with variable catches. Specialist fisherfolk, mainly Tonga people from Northern Malawi, remained highly mobile, following the fish resource round the lake. Settled lakeshore villagers in southern and central Malawi tended to be part-time fishers, with farm and non-farm labour being important in sustaining households. There were high degrees of reciprocity and mutual economic advantages in the relationships between migrants and residents (Project R7336).

#### *Social differentiation*

In Bangladesh, there are three distinct groups involved in fishing, including traditional Hindu fishing castes who are largely dependent on fishing, poor Muslims who fish for food and subsistence, and richer fishery investors and financiers. Women and children also engage in fishing on a subsistence basis. In other fisheries, differentiation may be between those that own boats and or gear and employ others to fish, those that own a part-share in fishing gear, and those with no fishing assets that provide labour as crew to others (Project R8118).

#### *Gender aspects*

In fisheries, men and women often have distinct roles. For example in marine fisheries, usually only men go out to fish, but women are often involved in trading and processing. Collection of intertidal resources (clams, urchins, octopus) for subsistence is usually the domain of women, and provides an important additional protein source for households. Children also often engage in fisheries at this subsistence level (Project R8196).

occupation carries its own risks, due to the fugitive nature of the resource, the hostile environment of the seas, and perishability of the product. Additionally, ready access to cash, and in the case of migratory fishers long periods away from their families, can result in fishers being exposed to other problems such as alcohol consumption and HIV [7]. Fishing communities often lack access to basic service provision such as education, health care and formal credit services. This situation is exacerbated for migratory fishers, who as temporary or new residents in an area, are often marginalised from democratic decision-making structures.

Fisheries are vulnerable to over-exploitation of the resource, which can result in the loss of benefits that can be derived from them. Therefore management must control exploitation so that the fish stock is sustainable.

Fish stocks may suffer negatively from external impacts, shocks and trends such as environmental degradation or changes in climate, which are beyond the control of most fishers. This demands a cross-sectoral approach to management and planning (see Box 2).

## Priorities for future work

Fishery-related livelihoods are both complex and dynamic. The importance of fisheries to livelihoods is being increasingly recognised and their various roles understood. However, further support is needed in the following areas:

- Increasing understanding of the different roles of fisheries in the livelihoods of the poor in different contexts, and the issues that threaten their contribution.
- Identifying management arrangements and actions that support livelihood strategies and contribute to reducing the vulnerability to risks of poor people dependent on fisheries.
- Promoting the inclusion of fisheries in poverty reduction strategies through recognition of their importance to the livelihoods of the poor.



Floating village in Tonle Sap, Cambodia, where fisheries form an important part of livelihoods. Photo by: E.Allison

## Box 2: Climate change and fishery-related livelihoods research by FMSP

Fisheries around the world are threatened by climate change. Sea-level rise, increased storminess and changes in the distribution and productivity of fish stocks as a result of rising water temperature (in marine fisheries) and changing hydrology (in inland fisheries) are expected to impact upon fisheries.

FMSP research found that African fisheries and fishing communities are amongst the most vulnerable in the world to climate change. Not only are most of these countries heavily reliant on fisheries as contributions to national economies, food security and employment, but also climate change is predicted to be particularly significant in this region.

Policy responses should focus on building institutions capable of managing fisheries in the face of these threats, and building the ability of fishing communities to deal with this additional threat to their livelihoods (Project R8475).

## References

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## For more information:

Further information about fisheries and development issues can be obtained from the Fisheries Management Science Programme (FMSP) and Marine Resources Assessment Group (MRAG) Ltd.

### Fisheries Management Science Programme:

The FMSP website has a searchable database where full-text project documents and reports can be downloaded:

[www.fmsp.org.uk](http://www.fmsp.org.uk)

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This FMSP Policy Brief is one of a series of five. Other briefs in this series are:

1. Fisheries and Poverty Reduction
2. Fisheries and Economic Growth
3. Fisheries and Food Security
5. Fisheries and Governance

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