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# Inland fisheries and rural livelihoods

## Towards appropriate valuation of the sector



## Inland fisheries – an integral part of rural life

Harvesting resources from inland waters is an important traditional activity in many parts of the world. People not only catch fish, but also a wide range of other aquatic organisms, including freshwater molluscs, crustaceans, amphibians, reptiles, insects and aquatic plants for consumption, barter and sale. Inland fisheries are practised in a variety of environments including rivers, reservoirs/lakes, swamps, flood plains, deltas, irrigation canals, ponds, and rice fields.



Inland waters are commonly accessible to rural communities and their exploitation does not necessarily require large investments such as boats and sophisticated fishing gear.

The contribution of inland fisheries is crucial for sustaining livelihoods in many rural areas, in particular amongst poor communities. In many cases, the people who rely on inland aquatic resources are also the most vulnerable to food insecurity and most disadvantaged in terms of access to alternative sources of food and income.

## Inland fisheries under pressure

Inland fisheries are increasingly threatened by environmental degradation. Human activities associated with residential and industrial development, mining, deforestation, hydropower, navigation and agricultural land use all have had substantial negative impacts.



### Threats to inland fisheries (typical causes)

- Loss of critical habitats for aquatic resources
- Blocked migration routes
- Degradation of water quality (e.g. sewage and agricultural pollution)
- Changes in hydrology (e.g. dams and water intake for irrigation)
- Overexploitation
- Introduction of alien species

## Inland fisheries – undervalued sector

Official fishery statistics tend to focus on fish production or “landings” and data collection methods are often simply “borrowed” from the marine fishery sector. These conventional ways of monitoring are not always suitable to inland areas where informal, dispersed and diversified fishing activities predominate. Non-inclusion of fish production for household consumption and production of other aquatic organisms, in particular, significantly underestimates the scale and value of the sector.

In addition, catch statistics alone will never be able to measure fully the wider benefits generated by the inland sector in fostering food security and sustaining livelihoods within rural communities.



P. Churnam

As a consequence, there has been very little information on the true scale and value of inland fisheries; this makes the sector “invisible” in the eyes of policy-makers. There is thus a critical need for information that more accurately demonstrates the importance of inland fisheries in most developing countries, and to raise awareness among planners and decision-makers for the sector’s multifaceted importance.



## Importance of inland fisheries

### Economic benefits

Even though inland fisheries tend to be informal small-scale activities that are under-reported in official statistics, in some countries their economic value is recognised as highly significant in official production estimates. In Cambodia, where more than 90 % of the country's fisheries production comes from inland waters, fisheries accounted for 12% of GDP while rice crop accounted for 10 %. In the Amazon River Basin in Brazil, the inland fisheries sector employs 168 thousand people and generates US\$ 170 million per year.

### Food and nutrition security benefits

Many inland aquatic products are utilised almost entirely for household consumption and there is relatively little discard or wastage.

Surplus production can be processed (drying, salting, smoking or other local methods) and stored for lean periods, reducing vulnerability to food insecurity.

It is also notable that the majority of countries with higher per capita inland fish production are developing countries, especially in Africa. This underscores the essential role of inland aquatic products in national food supplies.

Top 15 countries*	
1) Cambodia	9) Zambia
2) Uganda	10) Myanmar
3) Tanzania	11) Lao PDR
4) Chad	12) Bangladesh
5) Mali	13) Niger
6) Gabon	14) Malawi
7) Finland	15) Benin
8) DR Congo	

\*inland capture production per capita (2004).

### Sociocultural and livelihood benefits

The generally low financial requirement for production inputs means that inland fisheries may function as a livelihoods' safety-net for many disadvantaged groups. Landless farmers and female-headed households, for example, may turn to harvesting, processing or trading inland aquatic products fish in time of need. During periods of food and cash shortages, such as between cropping seasons or during drought, fishery products can play a supplementing and stabilizing role.



Seasonal collective fishing events strengthen local group solidarity

## Steps towards appropriate valuation of inland fisheries

Improving the valuation of living inland aquatic resources may not be an easy task, but it is essential in order to ensure the sustainable management of aquatic resources and properly place the fisheries in the context of multiple uses of inland waters. Some recommended steps for this purpose include the following.

### • Better use of existing information.

Useful information may be available, but scattered among various fisheries and other institutions, projects and NGOs. Simple collation of local information from different sources can yield a reasonably full picture of the significance of inland fisheries activities in many localities.

### • Review of current statistics.

It is important to conduct routine reviews of the quality of current statistics from official sources, and to assess areas of deficient coverage.

### • Clear definition of information requirements.

Users of information at various levels need to be consulted in order to identify specific information requirements for inland fisheries.

### • Options for obtaining better information.

New approaches may need to be explored to meet the information requirements of inland fisheries. Given the

chronic shortage of operational resources in most of national fishery departments, care should be taken to select cost-effective and sustainable methods.

### • Better coordination among agencies.

Efforts can be made to incorporate fishery information requests into the established survey frameworks of other agencies (e.g. agriculture census/surveys, household income and expenditure surveys).

### • Awareness raising and capacity building.

It is important that all the stakeholders clearly realize the need for appropriate valuation of the sector. Involvement of stakeholders is essential for effective valuation. Training can improve the communication channels between stakeholders and encourage the use of new or adapted approaches for information generation.



### • Allowance for special features of inland fisheries.

For all of the above steps, it is necessary for evaluations to take into account special features of inland fisheries, such as, their:

- **Integrated nature**, in that they may involve many segments of a local population – men, women and children, and part- or full-time fishers, processors, traders or consumers; and
- **Seasonality**, in that the abundance of inland fishery resources and people's response patterns may be highly variable – both seasonally and interannually, depending on the extent and duration of flooding and other factors.



FAO photo

## Supporting efforts by FAO

FAO is committed to assist member countries in their pursuit of quality information on inland fisheries through a number of means.

### FAO Strategy for Improving Information on Status and Trends in Capture Fisheries (Strategy-STF)

The Strategy is a voluntary instrument to provide a framework, strategy and plan for the improvement of knowledge and understanding of fishery status and trends as a basis for fisheries policy-making and management.

### FishCode-STF Project

A global multidonor funded project under the FAO FishCode Programme aimed at assisting developing countries to improve the monitoring of fishing activities and implement the Strategy-STF.

### FAO's regular programme

Several services within the Fisheries Department work together to review and evaluate the use of inland water resources for fisheries and promote better management and sound environmental conservation practices in inland waters.

### FAO Technical Cooperation Programme

TCP supports the FAO Member Nations through small projects which address specific problems in the agriculture, fisheries and forestry sectors. Examples of TCP projects on inland fisheries are:

- The regional TCP project "Addressing the Quality of Information on Inland Fisheries" (AQUINF) which identifies specific information requirements of inland fisheries and tests new approaches for the generation of information relevant to management in the Southeast Asian region.
- The Lake Tanganyika TCP project which provides technical assistance to facilitate establishment and operation of the Regional Programme for Integrated Management of Lake Tanganyika.

### Expert consultations

Expert consultations provide an opportunity to bring together experts on a particular topic from around the world to review scientific information and elaborate advice. A number have been organized on Inland fisheries.

