

## STRIVER POLICY BRIEF

*Strategy and methodology for improved IWRM*

*- An integrated interdisciplinary assessment in four twinning river basins*

**PB No. 1**



### *IWRM and Livelihoods: Fisheries in Tungabhadra sub-basin, India*

*Fisheries, though an important source of livelihood in Tungabhadra does not find a place in the water policy or management decisions. The study shows that water management if integrated with other sector needs such as fisheries, can benefit a number of poorer groups and at the same time increase water use efficiency.*

## IWRM and Livelihoods: Fisheries in Tungabhadra sub-basin, India

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### Abstract

The study showed that fisheries in Tungabhadra supported the livelihoods of a significant section of the poor and small scale fishermen. Despite the dependency, the Water Resources Department does not consider fisheries as one of the priorities while allocating water. The State Water Policy does mention that water should be ensured for various sectors and livelihoods, but does not specify how it should be implemented. The development initiatives by the Fisheries Department are not integrated with the activities of the water resources department or the Agriculture Department. Overall, there appears to be declining trend in fisheries production accompanied by a change in the institutional mechanisms that is not in the interests of the small scale fishermen. A number of institutional measures can be implemented to improve fisheries in the basin. The government should reconsider to issue fishing rights to small scale and traditional fishermen rather than open tenders, customize training programs and implement government welfare schemes to benefit the poorest amongst the small scale fishers.

*This STRIVER Policy Brief is based on the following research report:*

*Nagothu Udaya Sekhar, K.V. Raju, Manasi. S, Latha N, Lenin Babu K. 2008. Fisheries in Tungabhadra Basin, India. Current Staus and Future Possibilities to Improve the Livelihoods of Marginal Communities. STRIVER Task Report No. 9.5. 46p.*

### Fact box

About 10,000 families spread across the Tungabhadra basin were engaged in fishing as a source of livelihood. Nearly, two-thirds (66% per cent) were full time fishermen and engaged in fishing throughout the year. The rest one third (34%) were part time fishermen and depended on other activities to earn their livelihood apart from fisheries. The majority were small scale fishermen (60%), and were treated quite low on the socio-economic strata. Women were mostly involved in processing, sorting and marketing of fish in the local markets.

Two types of nets were commonly used, namely *Alvi* and Gill nets for fishing in Tungabhadra. The nets were locally made by fishermen. The fishermen changed their nets based on the fish types, season and water bodies. Surface gill nets, bottom set gill nets, small shore drag nets, cast nets and hook and line, were commonly used. Fish species and preferences varied, and the price was determined based on fish size and species, often by middlemen.

## IWRM and Livelihoods

Improving livelihoods of marginal communities and promoting economic growth is one of the basic principles of IWRM. But as observed in most developing countries, water management often tends to focus on issues related water allocation and distribution, water pricing and water conflicts. IWRM needs to be placed in the broader context and take a holistic and people-centered approach. Any initiatives towards integrated water management should attempt to focus on improving livelihoods of the poor and ensure equity in water distribution.

### Main objectives: Fisheries in Tungabhadra sub-basin

The present study was conducted within the Tungabhadra sub basin (TBSB), one of the case basins in the STRIVER project. Tungabhadra is a tributary of the larger river system namely Krishna located in the peninsular India. The study addressed the following research questions to analyze fisheries as a means of livelihood in the TBSB and how it can support marginal communities and women.

- What opportunities do fisheries provide for rural fisher folk and women in the TBSB in its current form and what are the future possibilities?
- How do factors related to current water management and institutional conditions influence the livelihood options from fisheries?

### Current status of Fisheries in TBSB

Fishing communities were spread across the TBSB, concentrated around major water bodies. The number of households within these communities varied from 4 to 100 families. Depending on the location, fish catch and season; these families migrated as labourers to different parts of the basin. During the course of the study, the team

interacted with 106 households distributed amongst 16 of these communities.

A majority of the fishermen were small scale and small scale fishing was mostly a household enterprise with the women and children often sharing the burden. Women were engaged mostly in sorting and selling fish. The role of the women largely depended on the socio-economic conditions of the households. Overall, the conditions and quality of life for small scale fishermen in general and women in particular were poor across different fishing groups. This included long working days, poor wages as compared to men and in addition the burden of household maintenance. About 23% of the fishermen were large scale, who operated through fishing camps. They hired small fishers and labourers who migrated from other regions to work at the camps.



Fig.1 A small scale fisherman in Tungabhadra, India, using a coracle, the saucer-shaped country craft made of split bamboo and covered with hide, a commonly used fishing craft.

Annual migrations were a common pattern in the fisheries activities in Tungabhadra. Often this caused hardships to families and their social life, as it involved living in temporary settlements or camps where facilities were poor. In most cases only the male members moved out for a certain period and returned after the fishing season. Migration to other places was more a constraint than advantage to the fishermen. Fishing camps operated by

large fishermen often competed with small small fishers, as the latter did not have the paying capacity to participate in tenders. As a result they often ended up working in the fishing camps or taking sub-leases from large fishermen.

### **Fisheries and institutional mechanisms**

Initially, the fishing rights across water bodies in TBSB were granted by the Fisheries Department (FD) through licensing process. Licensing system was preferred as the fee was minimal in TBSB. For example, in the Tungabhadra reservoir, a major source for fishing, the FD would lease it from the Tungabhadra board and allot it to small-scale fishermen. Members had to register with the Department of Fisheries by paying the prescribed fee annually, which permits them to fish throughout the year. License fees varied based on location, duration of contract, types of nets used, and number of boats used for fishing. However, this practice was changed in 2001, and instead the Board directly calls for open tenders and invites all the seven fishing societies to participate. The highest bidder was offered the overall rights to fish. This was seen profitable by the Board since it gave more revenue, but was not in favor of small scale-fishermen. It was understood from the study that, private investors paid the societies and used them as their proxies. This opened for conflicts between societies, fishing communities, and at the same time resulted in over exploitation of fisheries for short-term gains. Small scale fishers had no other option but to depend on the middlemen. At the village level too, granting fishing rights in village water bodies was made mostly through open tenders to realize more revenue. This practice attracted private investors from outside, who in turn sub-let the rights to local small scale fishermen. In the event of droughts or other calamities, the small scale fishermen had to bear the risks. The local fishermen were not organized to participate in the tenders and were not in favour of open auctions. The

Fisheries Department failed to realize that fishermen welfare was more important than the revenue from fisheries.

The same can be said about water allocation policies in the basin. Decisions related to water allocation does not involve FD and the needs for fisheries. It is mostly based on the needs of farmers and agriculture. Fishermen complained that certain stretches of Tungabhadra becomes dry by early March-April onwards every year, that is not favorable for fisheries.



Figure 2. Women selling fish at a local market, Bellary, Karnataka, India

### **Decline in Fisheries**

The study revealed that fisheries in the Tungabhadra have declined by almost half from 2000 to 2005. (GOK 2005). This can be attributed to: inadequate and poor quality fingerlings, lack of integrated efforts by the Department of Fisheries, illegal fishing, pollution from industries and lack of integrated water resources management.

During the study it was observed that efforts to develop fisheries were not integrated with activities of other sectors, for example water or irrigation. As a result, decisions made by the Water Resources Department did not take into consideration the needs of the fisheries sector while almost half from 2000 to 2005. (GOK 2005). This is a major drawback for fisheries in the TBSB as irrigation and drinking water gets the priority. The government should take note of the fact that fisheries is a non-consumptive use and efforts to promote fisheries in TBSB

can only increase the productivity of water without affecting other sectors. Improvement of livelihoods is part of IWRM principles, and any attempts to implement IWRM can also ensure the development of Fisheries sector in the region.

### Policy implications

A number of policies and institutions already exist in TBSB that can facilitate the entry of poor into fisheries. For example, the comprehensive policy for auctioning fishing rights in tanks, reservoirs, and rivers was formulated in 1997<sup>1</sup>, and later amended in 2005. As per these amendments, the tanks were supposed to be leased out in to the Water Users Associations formed under Jalasamvardhana Yojana Sangha, or the registered Fisheries Cooperative Societies or the registered water users cooperatives and other societies/institutions, in the order of priority. However, the policy needs to be implemented properly to ensure that the local fishermen or their societies benefit. There is lack of integration between the relevant polices, departments (state and local agencies) and programs that need to be pulled together to facilitate the access of the poor to fisheries. A number of measures can be initiated at the local level, for example, improving the fisheries in the water bodies, issuing licenses only to small scale and traditional fishermen, customizing training programs to suit various types of fishermen and implementing government welfare schemes to benefit the poorest amongst the small scale fishers. Fishermen are concerned about the fishing rights in the various water bodies. This is upto the government agencies to decide how the rights will be granted in the future, and whether welfare of the poor is important or earning revenue from fisheries. Integrating water management with the needs of other sectors such as fisheries, will not only ensure

livelihoods of marginal communities such as the small-scale fishers, but also increase the water use efficiency in the basin.



Figure 3: Labourers sorting and drying fish at a fishing camp operated by a large fisherman on the Tungabhadra reservoir banks.

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<sup>1</sup> Karnataka Government Order No. AHF 52 SFM 95 dated 09-06-1997 and amendments have been issued for the above order vide Government order No/AHF/166/SFS/2004 dated 15/01/2005 and 04/05/2005.



The **STRIVER Policy and Technical Brief** series translate the results from the project into practical and useful information for policy makers and water managers.

The Briefs are also available online: [www.striver.no](http://www.striver.no)

#### About STRIVER

STRIVER- Strategy and methodology for improved IWRM - An integrated interdisciplinary assessment in four twinning river basins is a three year EC funded project 2006-2009 under the 6th framework programme (FP6) coordinated jointly by Bioforsk and NIVA. The point of departure for STRIVER is the lack of clear methodologies and problems in operationalisation of Integrated Water Resource Management (IWRM) as pointed out by both the scientific and management communities. 13 partners from 9 countries participate as contractual partners in addition to an external advisory board.

#### Title of project:

*Strategy and methodology for improved IWRM  
- An integrated interdisciplinary assessment in four twinning river basins (STRIVER)*

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**Front-cover photo:** Fish-catch by a small-scale fishermen in Tungabhadra, India (Udaya Sekhar Nagothu)

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