

# STREAM

## Policy Brief



www.streaminitiative.org

Number 4

### Summary

**What is this about?** This briefing is about the relevance of including aquaculture in watershed development for food security as well as social and economic opportunity.

### Read this if ...

.. You want to understand more about the opportunities aquaculture offers to poor people in watersheds development.

### Key points:

- Many seasonal and permanent water bodies which store water within watersheds are also suitable for aquaculture, deriving a double benefit (crops and fish) from the water with demonstrable livelihood benefits, particularly for women.
- Encouraging aquaculture in watersheds can link people to social and economic opportunities beyond the rehabilitation of watersheds.
- Introducing aquaculture in watersheds development involves capacity building, direct and effective engagement with communities on a significant scale providing orientation, training, exposure visits and access to technology and information about aquaculture.
- Aquaculture should be perceived as a choice that people have, depending on the resources they can command and the circumstances in which they can be woven into supporting *livelihoods*.
- Fish can have a defining role in nutritional security; providing a high protein food, rich in calcium, vitamin A, omega 3 fatty acids and lysine.
- Aquaculture is an important consideration when watershed rehabilitation is promoted within a strategic context of rural development.

A briefing on ...

## Aquaculture in Watershed Development

... in two pages or less

**If you can only do one thing with this Policy Brief, do this ...**

**Include aquaculture in watersheds development to support livelihoods and improve food security.**

### The briefing ...

Since 1994–95 an estimated US \$ 3.5 billion has been invested by the government in the development of about 10,000 watersheds in all the major states of the country, following the 'Watershed Guidelines' of the Ministry of Rural Areas and Employment (MoRAE). In addition, donors including DANIDA, DFID, GTZ, SDC, SIDA and the World Bank, are working closely with the Union and State governments towards institutionally and ecologically sustainable enhancement of rural livelihoods through watersheds approaches. The guidelines are a unique attempt to mainstream participatory approaches in the public sector and widely welcomed by those involved. There is however continuing need to link them to a wider range of economic and social opportunities beyond the four year rehabilitation period.

As well as rehabilitation and development of micro-watersheds through soil and water conservation a typical project may include water resources development, socio-economic development, crop planning & agriculture, household energy, forestry issues and livestock and animal husbandry.

Carrying this holistic approach further, the Government of Orissa and DFID, implementing the Western Orissa Rural Livelihoods Project (WORLP), have developed a 'watershed plus' approach to further accommodate livelihood support to the poorest and land-less communities. WORLP implementation by the Government of Orissa has the potential to converge and dovetail resources, technology and information of various line departments and non-governmental agencies to strengthen livelihoods options available within the project area and generate new ones. Through DFID WORLP provides 60% more funds than the watershed guidelines to address more local needs and problems of marginalized groups. 'Watershed plus' activities must be adapted to local biophysical and socio-economic conditions and enable poor people within the community to nurture and utilize natural resources sustainably.

Aquaculture is an excellent 'watershed plus' activity, and can even be conducted in newly constructed water harvesting structures developed in a watershed. In western Orissa, retaining run-off for protective irrigation is common and storage of surface water is used to assure crop development during dry periods. This results in the creation of permanent and seasonal water-bodies. Many of the water bodies are suitable for aquaculture and the potential for deriving a double benefit (crops and fish) from the water.

## A briefing on ... aquaculture in watersheds development

WORLP have invested in capacity building and been able to engage directly and effectively with communities on a significant scale providing orientation, training, exposure visits and access to technology and information with **demonstrable livelihood benefits**, particularly for women.

**Fish can have a defining role in nutritional security**; they provide a high protein food, rich in calcium, vitamin A, omega 3 fatty acids and lysine. Fish is a popular part of the diet in Orissa, no less so in western Orissa. Fisheries are recognized by the Indian Council for Agricultural Research as being a powerful income and employment generator; a source of livelihoods for a large part of the economically backward population.

There is considerable potential of fisheries to contribute to poor people's livelihoods. There is an opportunity within watersheds development to **improve service provision to poor people**, improve adoption of fish management systems and implement emerging government policy more effectively.

In some cases this involves **boosting the supply of fingerlings** available in the watershed – that is fish seed from a well managed hatchery that have been raised in a nursery pond to a size where they can be stocked in perennial water bodies without being predated on by larger fish, or to a size from which in a seasonal pond they will grow to a marketable size before the water dries up.

Another key requirement is for **support for planning and management** – here a valuable approach may be to encourage the evolution of institutions, local to communities, where farmers and fishers can access information training and exposure, credit, advice from government, inter-governmental and NGO support services and rural banking services as well as technical advice and inputs - so-called One-stop Aqua Shops (OAS).

There is perhaps a need for a broader approach in which **watershed rehabilitation is promoted within a strategic context of rural development**. Where the states need to be more strongly involved in planning watershed development in the context of the various other rural development initiatives they undertake, in the prioritization of areas for rehabilitation and the provision of services by line departments.

As Watersheds Missions foster greater links between national, state and district levels and greater convergence between service providers the design and implementation of the rehabilitation of watersheds and support for sustainable rural livelihoods within rehabilitated watershed will improve; cross-learning among districts and states will increase; and monitoring and evaluation will become more effective.

Aquaculture is an effective complement to watersheds development, and a sound component of rural livelihoods in rehabilitated watersheds. Aim to **include aquaculture in watersheds development to support livelihoods and improve food security**.

### Links to other documents and information sources on this topic:

There are 19 Better-Practice Guidelines about aquaculture in western Orissa watersheds developed by the Western Orissa Rural Livelihoods Project, the Orissa Watersheds Development Mission, nr international and the STREAM Initiative – available from One-stop Aqua Shops the STREAM Communications Hub and the Watersheds Mission.

See also: Turton, C. and Farrington J. (1998) *Enhancing rural livelihoods through participatory watershed development in India*. Natural Resource Perspectives ISSN: 1356-9228. Overseas Development Institute, London.

Turton, C., Coulter, J., Shah, A. and Farrington, J. (1998) *Watershed Development in India: Impact of the 1994 Guidelines*. A report prepared for Gol and DFID (New Delhi). ODI London

### Where has this come from?

The Policy Brief series is prepared by the Support to Regional Aquatic Resources Management (STREAM) Initiative of the Network of Aquaculture Centres in Asia-Pacific (NACA).

For more information see [www.streaminitiative.org/Library/India/india.html](http://www.streaminitiative.org/Library/India/india.html) or contact:

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