

# Improving the small-scale aquaculture to enhance the livelihood of rural farmers

Geeta B Bastakoti<sup>1, 3</sup>, Sunila Rai<sup>2</sup>, and Gam Bahadur Gurung<sup>1</sup>

<sup>1</sup>Forum for Rural Welfare and Agricultural Reform for Development- Nepal

<sup>2</sup>Institute of Agriculture and Animal Sciences, Nepal

<sup>3</sup>Asian Institute of Technology, Thailand

## Key messages

The following aspects are crucial for improving the small-scale aquaculture in Nepal:

- To facilitate the scaling-up of fisheries production activities, updated information relevant to enhancing farmers' capacities and knowledge in fish farming should be provided through effective coordination among relevant government agencies, NGOs, academic and research institutions, and Women Fisheries Groups.
- The government agencies should develop strategies and activities suitable for scaling-up and create network with Women Fisheries group.
- Women Group should mobilize their funds available in the Cooperative to scale up activities.



*An output of a collaborative research work of*



[www.forwardnepal.org](http://www.forwardnepal.org)



**AIT**  
Asian Institute of Technology

[www.ait.asia](http://www.ait.asia)

## Why should policy makers focus on these issues?

Aquaculture and fishing constitute part of agriculture, but this sector is still in developing phase in Nepal though its potential was recognized long ago. Capture fisheries is common in many parts of the country and provides livelihood options to several ethnic and marginal people in Nepal. But, the yield from such fisheries is very low and the catch is inconsistent as it entirely depends on natural availability. Inland capture fisheries have become less resilient to over exploitation and other environmental changes and thus prompting other form of aquaculture promotion activities elsewhere in the world.



In Nepal, in the past few decades some efforts were made for commercialization of fisheries and aquaculture through some technical innovations: new fisheries species such as carps and tilapia; and improved feeding and management practices. But such efforts were virtually beyond the reach of poor and marginal farmers, especially the poor women farmers.

However, in recent periods some local and international organizations promoted some programs to cover poor and marginal farmers. Women's roles and contribution in aquaculture have been realized worldwide. Studies reported various positive impacts of commercial aquaculture in women's lives. However, in Nepalese context, poor women farmers were not able to contribute much with this livelihood option, as it was not easy for them to adopt commercial fisheries.

## Small-scale aquaculture and the livelihoods

Realizing the situation that women and poor farmers were not able to get benefitted from the aquaculture activities, in the year 2000, one pilot project 'Women in Aquaculture' (WiA) was implemented jointly by the Asian Institute of Technology, Thailand and Institute of Agriculture and Animal Sciences, Nepal. The pilot project was implemented as small-scale aquaculture in Chitwan district of Nepal, and later expanded to adjoining Nawalparasi district in its second phase. The importance of such projects is only valuable if it benefits women. It showed the need to assess the

livelihood benefits, gender impacts and sustainability of the WiA project in the project pilot area of Nepal.

An investigation conducted recently at the project areas revealed several benefits received by the small farmers. The investigation, conducted by FORWARD-Nepal with funding support from AIT-IDRC supported 'Enabling Bio-innovation project', included four categories of the respondents in Chitwan and Nawalparasi districts: WiA project beneficiaries; Production and Marketing (P&M) project adopters; Private adopters and Non-adopters.



After the adoption of small-scale aquaculture the main benefit was on increased level of production and on reliable basis. As many of the farmers use do fish before the project, they could get fish from capture fishery. But the amount of catch varied substantially and it was not reliable over the period of time. Once they started pond culture they were certain to get the harvest of the fish from the pond. It

has ultimately helped to get the increased level of income from the fish.

The result showed that farmers in Chitwan can get higher annual income from fish than the farmers in Nawalparasi district. At the same time looking on the different categories of the farmers the annual income from fish was higher in case of WiA project beneficiaries compared to other categories.

Annual income from fish (in NPRs)	WiA project beneficiaries	P&M project adopters	Private adopters
Up to 3000	48	21	14
3,000 – 5,000	13	4	1
5,000 – 7,000	10	3	2
7,000 – 10,000	12	5	7

Though the annual income from the fish sale is not very high, farmers get additional income from other activities, such as, cultivation of different type of seasonal vegetables in pond dike. Another contribution of small-scale aquaculture was the self-employment opportunity for the household members.

The combined benefit from fish and other activities have made them realized the benefits from small-scale aquaculture initiative. Likewise, after the involvement of

farmers in the small-scale aquaculture activity the nutritional status of the farm family members has improved significantly.

Some farmers reported increased workload of women, but the changes were not significant. Rather, with the involvement in aquaculture women farmers participation in social activities have improved significantly. Likewise, women farmers have also equal say in benefit sharing and decision regarding spending of income.

## Problems associated with adoption and expansion of the aquaculture

At the same time, the study also highlighted some constraints that are hindering the commercial scale expansion of the aquaculture.

The Women's groups for aquaculture were active in both the research sites facilitating production and marketing activities. Though there was some effort to manage marketing, it was noted that farmers do not have clear idea about market potential for their product even if they scale up the production to commercial level. Thus, they were looking for some additional support programs to strengthen and improvise the group activities and member's capacity.

Many farmers are interested to scale-up their aquaculture venture. But it was noted that insufficient technical capacity, investment potential and to some extent, poor connection to the market has hindered the commercialization of the aquaculture.

Despite of the interest, many other farmers in project areas were not able to adopt aquaculture due to several reasons. The main factor was lack or unsuitability of land. Others reported lack of necessary support, lack of information about aquaculture, lack of coordination within family members and lack of source of water as the reasons for not adopting the aquaculture.

## Policy suggestions

In light of its contribution to the livelihood, farmers' interest to continue, and the constraints they are facing; following aspects are crucial for improving the small-scale aquaculture in Nepal:

- Farmers should consider scaling-up of fisheries production activities to get the commercial potential. For this, information and communication is very crucial to provide the relevant information for harnessing possible opportunities in fish farming. Thus, the effective coordination among the government agencies, academic and research institutions such as DADO, NGOs, and Women Fisheries Groups should be strengthened.
- The responsible government agencies, such as Fisheries Department and DADO, should develop strategies and activities that could facilitate scaling up and create network with Women Fisheries group to enhance their technical capacities.
- Women Group should mobilize their funds available in the Cooperative to scale up activities. They could organize a workshop each year in their area to share the problems and get solutions with Fisheries expert.
- Effort is needed to facilitate the effective market linkages.

The research described here is part of the 'Enabling Bio-innovations for Poverty Alleviation in Asia Project'. The project was funded by IDRC, Canada and implemented by the Asian Institute of Technology, Thailand. The research was carried out by FORWARD-Nepal. The views expressed in this policy brief do not necessarily reflect the views of these institutions.

For additional information about 'Enabling Bio-innovations for Poverty Alleviation in Asia Project' please contact Dr Edsel Sajor ([esajor@ait.asia](mailto:esajor@ait.asia)) at Asian Institute of Technology, Thailand.