

SECTOR BRIEF

Issue #10, September 2015



Sector: Fish

Interventions: Improved Hatchery Management

Districts: Nawalparasi

Farmers of Nawalparasi can now have timely access to good quality seeds

In the fish sector, lack of access to quality seeds - hatchling, fry and fingerlings - has been one of the major problems for farmers across the country. Every season, smallholder farmers struggle to acquire timely and necessary quantity of seeds. This reduces the harvest period by up to a month which results in fish that are smaller in size at the end of harvest fetching lower price. Due to inadequate supply of seeds, farmers in certain districts of Eastern and Far Western Nepal have to acquire seeds from neighboring districts and even from India. This not only adds to their cost of inputs but also decreases productivity due to high mortality of fish caused by poor quality of seeds.



Study reveals limitations in hatcheries

To identify the underlying causes of the deficit in quality and supply of seeds, Samarth-NMDP commissioned an assessment of hatcheries in 14 districts along the Tarai region - between Kapilvastu to Morang. The assessment highlighted defects in the infrastructure of hatcheries; problems with management practices; and brood quality of the hatcheries as the major underlying causes.

Samarth worked with an aqua engineer - a civil engineer with a background in aqua-culture - to improve the infrastructure of the hatcheries. The aqua engineer disseminated the findings of the assessment to seven hatcheries - located along the eastern Tarai and 16 hatcheries - located along the central to western Tarai. Out of these hatcheries, four hatcheries had the willingness to upgrade their hatchery infrastructure and were provided with detailed engineering prints and cost approximation to upgrade hatchery infrastructure.

However, since the production season was nearing, out of these four hatcheries, only one hatchery owner, Rabindra Sahani of- Sahani Matsya Hatchery situated in Nawalparasi district - was willing to adopt new business practice and take the risk of demolishing his current hatchery to build a new one based on the aqua-engineer's expert advice. Samarth partnered with Sahani Hatchery on February 2015.

Sahani Hatchery benefits from improved hatchery infrastructure

Samarth-NMDP partnered with Sahani Hatchery due to Sahani's willingness to adopt new business practice and his capacity to scale up to cover many districts of Nepal, providing timely and quality seeds to the smallholder farmers. Samarth facilitated a professional assessment of Sahani hatchery through the aqua engineer who assisted in developing the hatchery with improved infrastructure and better management practice. Samarth shared around 50% of the cost while Sahani Hatchery added the rest.

By September 2015 - at the end of the seed production season - better hatchery infrastructure has led to phenomenal results in Sahani Hatchery: Mortality rates dropped from 60% in the previous years to 10% this year. It was estimated that the production of seeds would double from 5 crore last year to 10 crores this year. But, due to the earthquake, the bandhs in the Tarai and brood disease he could only produce about 5.65 crores seeds.



Inspection of brood at Sahani_Matsya Hatchery

"After seeking professional help and making the required changes, the mortality of seeds has gone down considerably this year, and production has gone up.

I am planning to increase the number of incubation tanks and add a new overhead tank soon. I have also started giving embedded services to nurseries that provide fingerlings to the farmers - to reduce mortality of seeds. Farmers are very happy with the quality of seeds they are receiving now."

Rabindra Sahani,
Owner, Sahani Hatchery

"Many hatcheries in Nepal are built without professional help or guidance. This affects the productivity of the hatcheries. There are modern hatchery designs available through the government, but due to lack of information about it, most hatcheries rely on traditional methods.

I visited Sahani Hatchery a couple of months back to assess the progress of the hatchery. Such improvement in infrastructure will lead to improvement in the overall performance of the sector contributing to increased efficiency and productivity.

Ramananda Mishra,
Director, Directorate of Fisheries Development (DoFD)

September marks the end of the seed production season. Among the four hatcheries that had shown the willingness to upgrade their hatchery during the dissemination of the findings of need assessment, but were not willing to do it immediately, are now demolishing their old infrastructure and building a new one based on the new model: Shyam Sundar Chaudhary of Sunsari district has already built a new hatchery; Ramu Chaudhary of Siraha district is in the process of upgrading his hatchery, he has already allocated funds for construction and considering taking advice from the aqua engineer. Samarth is currently monitoring the actions of those hatcheries that were part of the workshop that disseminated the findings of the assessment.

Farmers benefit from quality seeds

Farmers buying seeds produced from Sahani Hatchery now have timely access to good quality seeds, enabling them to stock well in time such that harvested fish are mature, fetching them higher prices; and reduced mortality rates means increase in productivity.

Four more hatcheries have adopted/planning to adopt the new efficient design this year. According to the latest projection done on late September, approximately 1100 fish farming households are expected to benefit from the improved and timely availability of seeds by March 2017, out of which 770 households are expected to increase their productivity, earning additional income of £103.

"This year my estimated fish production is around 800 kgs, while last year it was only 300 kgs. The hatchlings I bought from India were cheap but they didn't grow well. But the hatchlings I bought from Sahani have shown rapid growth. I also got to buy seeds on time this year, so the seeds will have more time to grow before it's time to sell them."

**Khagendra Chaudhary,
Smallholder farmer,
Sanahi-3, Nawalparasi**

Next steps

Samarth has recently started working in partnership with Directorate of Fisheries Development (DOFD) and Nepal Agriculture Research Council (NARC) to address brood problems, especially brood distribution. Inbreeding of broods is prevalent in the hatcheries of Nepal which reduce the quality of seeds, leading to high mortality and slow growth, despite application of proper feed. DoFD and NARC has already brought pure brood stock for distribution to 5 private hatcheries, with plans to scale up the distribution to other hatcheries in future so that small fish farmers accessing seeds from pure brood stock will enjoy reduced mortality and faster growth rate of their fry and fingerlings increasing their productivity leading to increased incomes.

About Samarth-NMDP

Samarth-NMDP is a five year UK aid-funded program that aims to reduce poverty in Nepal by increasing the income of smallholder farmers and small-scale entrepreneurs. The programme follows a market systems development approach, addressing underlying causes in the performance of the market systems, to bring about more competitive and sustainable markets that work better for the poor.

Samarth-NMDP is managed in partnership with the Government of Nepal by a consortium comprising Adam Smith International, The Springfield Centre and Swisscontact. For more information on the programme, please visit www.samarth-nepal.com.