

Protecting Aquatic Biodiversity in Upper Ganga River through Community Participation

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Introduction

The Ganges river basin covering an area of about 861,404 sq. km. is a source of livelihood for over 450 million people. Due to the huge dependency of local people on the river, the Ganges river is threatened by manmade pressures, such as water abstraction, urban development, and unprecedented levels of pollution and land use changes. This ultimately changes the water quality of the river and consequently affected the existing flora and fauna of the river.

Since past two decades WWF-India is working in the Upper Ganga River for the conservation of aquatic biodiversity through community participation. Two important species has been identified as a species of particular concern, the Ganges River Dolphin “National Aquatic Animal” and three species of fresh water turtles. Populations of Ganges river dolphin and freshwater turtles have declined drastically during the last few decades as a result of direct and indirect human interventions. The riverine habitat of these species is under constant threat due to many human activities like construction of barrages, agriculture practices on the river banks, discharge of pollutants etc.

Freshwater turtles in the Ganga River are used for food and medicinal purposes. Locals in the bank-side villages, fishermen and other turtle poachers frequently catch large number of turtles. During fishing operations small turtle species and dolphin die in fishing nets. To

conserve the above two species, it is required that their habitats are protected with the active help of local community who depend on the river. Community engagement in protection of habitat can be an effective tool in strengthening conservation efforts.

Problem/Objective

Existing agricultural practices along the banks of Ganga River pose threat to the survival of the river dolphins and freshwater turtles. The usage of chemical fertilizers in agricultural fields for purposes of higher yield is quite prevalent in the area. As a result of the above practice, leaching of nitrogenous fertilizers into river has led to nitrate pollution in the river and in turn, endangered the species inhabiting the river. It was thus realized that communities need to be educated about the effects of their agricultural practices on the habitat of these endangered species and develop alternatives to existing practices that strengthen conservation while ensuring livelihood security. To address the issue of leaching of chemical fertilizers, the use of vermi compost was promoted.

In addition to this, the villages on the bank of the river face the problem of erosion every monsoon. Many villagers, who have their agricultural lands close to the river, suffer huge losses from floods. Thus the villagers started practicing island farming in dry season from October to June. These islands are extremely suitable for the cultivation of crops of Cucurbitaceae family. The

sowing season i.e. October coincides with the nesting season of the freshwater turtles. Prior to the initiation of conservation efforts, the nests of these turtles were either damaged during farming or they could not find appropriate sites for laying eggs. To lessen the damaged of turtle eggs during agricultural farming, WWF-India has taken the initiative and provided training and awareness to the local people to safely collect the nest of the turtle during farming and shift the same in the nearby “enclosed area” made by WWF and villagers.

Key Activities

The local community played a significant role in the conservation of the river dolphins and freshwater turtles. The programme was initiated in Karnawas, Naudevi and Bhairia villages in 2010 by WWF-India to improve livelihoods and enhance the conservation status of the target species. The project sites include villages located in the Bulandshahr district of Uttar Pradesh falls in the Upper Ganges basin. These villages were identified on the basis of extent of dependence from a rapid assessment carried out in 20 villages located in the Upper Ganga River. The major activities are as:

1. Conducting awareness programs with local community

Awareness programmes were conducted in different villages along the bank of Ganges River mainly targeting the fishing community and farmers whose total dependency is on the river. The awareness programme carried out were talks, discussions and film shows focusing on field demonstration of wise use of the river banks, pesticides/fertilisers. Lectures by experts and exchange farmers programmes were also conducted where the farmers could share their experiences and discuss what the changes they have made in their village are.

2. Promoting the adoption of vermi composting practices among the farmers

Three villages Karnawas, Bhariya and Naudai of Bulandshahr district were identified and around 55 vermicompost unit were installed by WWF-India in each village. Training was also provided to the farmers to produce the vermi compost. The compost was used in 62

hectares of agricultural land. Another 58 hectare of palaze (sand agriculture) land was also used for adopting the vermin compost farming. One could demonstrate that the yield from these lands were good and there was no run off of pesticides/fertilizers in the river. Looking at the success of the technique, farmers from nearby villages got interested and around 20 more river bank villages have adopted this technique.

3. Improving habitats/sites for laying and hatching of turtle eggs

The turtle habitat was improved by organizing awareness programmes and workshops in different stretch of the Ganges River. Prior to the workshop/awareness programme all the islands were used for palaze (sand agriculture) by the river bank farmers. After interventions of WWF-India's, most of the islands were not used for palaze and farmers are now willing to shift their palaze from nesting place to other areas, where the concentration of turtle is very less. However, in case if any the farmers see any turtle nest in their palaze they shifted the eggs in the nearby enclosures developed by WWF-India.

4. Plantation in selected villages along the river bank

Plantation on the bank of these villages was done because; the selected villages were more prone to soil erosion. About 3500 plant sapling were planted on the river banks of these villages covering an area of about 4.6 hectare. This helped in conservation of the bank erosion.

Challenges

The main challenge to carry out these activities was to change the mindset of local people. People were not easily convinced to use vermi-compost instead of chemical fertilizers and pesticides in the agricultural fields. Initially, It was equally challenging to convince farmers to prevent damage to turtle nests due to farming. However, due to consistent efforts of WWF-India, people are increasingly becoming aware about the importance of river dolphin and turtles in the Ganges River and are actively participating in conserving these species.





Beyond Results

This effort has demonstrated models for river bank agriculture and conservation of species. More villagers have adopted vermicompost for farming and have stopped using chemical fertilizers. Villagers are also vigilant and proactively help in turtle conservation.

Lessons Learnt

Working with communities to augment and improve livelihoods, while improving the management of the natural environment, is complex. Many factors are

involved, and a wide range of stakeholders need to be engaged, including government, NGOs, and individuals. There is a need to have sustained engagement on the ground of new and innovative approaches have to be tried and tested. It is important to note that making communities aware of the links between livelihood benefits and wildlife conservation is difficult. A key lesson is that working with communities needs significant and long term investment. Another lesson learnt is the importance of local media and its effective use to convince the community to participate in the conservation programme.



Sarus Cranes with nest (Photo credit : Neeraj Mishra)