

COMMUNITY-BASED WATER RESOURCE MANAGEMENT

Water resource management through fisheries, wetlands, agriculture and waste management practices improvement

OVERVIEW

- Organization data:
 - ✓ Name: **The Asia Foundation**
 - ✓ Organization type: **International Non-Governmental Organization (INGO)**
 - ✓ Year of foundation: **1954**
- Beneficiaries : **3 target villages, approximately 3700 people**
- Donors and financing: **The McConnell Foundation - 100% of the funding**
- Location: **Napork, Nyangkham and Hadkhamhieng villages in Xe Bang Fai District, Khammouane province, Laos**
- Beginning date: **2015**
- Motivations: **Engage communities to contribute to sustainable management of river basins and to promote sustainable use and monitoring of natural resources**

CONTEXT AND ACTION

Summary | The Xe Bang Fai River is home to an incredibly diverse range of habitats and species, including over 130 different species of fish. Over 150,000 people are dependent on the river and wetlands for their livelihoods, particularly in relation to fisheries, rice and vegetable agriculture. These ecosystems are subject to high water fluctuations and floods, impacting the ecology of the Xe Bang Fai River. People in the basin are extremely vulnerable to changes in river flows for their livelihoods. Moreover, water quality has been deteriorated due to few sanitary landfills and non-environmental friendly practices in agriculture.

Thus, The Asia Foundation (TAF) has implemented community-based activities designed to promote sustainable use and monitoring of natural resources (rivers, fisheries, forests) through the Integrated Water Resources Management (IWRM) concept, within the Xe Bang Fai river basin in Napork, Nyangkham and Hadkhamhieng villages. In this concept, all the different uses of water resources are considered together. The Community-based Water Resource Management project focused on a citizen sciences process for the river basin management that helped communities to understand and take ownership over the management of community water resources.

One “wetlands and fisheries” group was established in each of the three target villages. They developed a wetland and fishery management plan with regulations to protect the local fisheries from harmful practices, such as fishing with illegal fishing practices using poison or electrofishing gear. TAF also trained some villagers on the use of macroinvertebrates to assess water quality. Moreover, TAF supported wetland enhancements to increase the amount of fish and other aquatic biodiversity. Another component of the project was to create a waste management committee in each village, to regulate waste management and prevent villagers from contaminating their river, since there is no waste disposal and collection. People learnt about waste separation, recycling and composting in schools and villages. Moreover, farmers groups were created to learn about organic agriculture approaches for rice and vegetable farming, as well as two sustainable rice agriculture approaches: direct seeding and System of Rice Intensification (SRI).



Local challenges |

- Rapid economic growth and increasing natural resource extraction has put pressure on the environment, particularly on water resources;
- Water quality degradation due to poor waste management and agriculture chemicals run-off in adjacent water bodies;
- Overfishing and use of illegal fishing methods results in less available stock, leading to malnutrition of the population;
- Agriculture-related incomes are vulnerable to hazards such as flooding and drought.

Local responses |

- Restoration and regeneration of wetlands, with embankments surrounding each wetland to protect them from encroachment by the local farmers;
- Village management committees to enforce rules against illegal fishing practices and develop sustainable waste management program;
- Citizen science : train non-scientist people to conduct scientific research such as biomonitoring, to assess water quality;
- Introduce organic agriculture techniques to farmers and alternative practices, more resilient to climate change.

BENEFITS

Environmental | Villagers have achieved the long term objective to halt the degradation of the aquatic habitats for aquatic organisms. Thus, the amount of fishes and other aquatic wildlife increased. Moreover people stopped littering around villages which help to reduce water contamination. Approximately 50% of the farmers trained to organic agriculture expressed a willingness to continue to practice. Direct seeding has been adopted by most farmers, helping protecting soils and preventing from erosion.

Social | Thanks to citizen sciences villagers became more aware about the functioning of ecosystems they are living in. The wetlands and fisheries committee members are able to develop a wetland management framework and have the collective power to disseminate and enforce wetland rules and regulations. Moreover, with the increase of aquatic wildlife and the use of better practices in agriculture, they improved local food security.

Economic | One long-term goal (3 years) is that farmers would see a decrease in their input costs of farming by decreasing chemical use without loss of longer-term productivity. Although it is too early to assess now, some farmers say that they no longer need to buy vegetables to supplement their household needs.

SUCCESS FACTORS

- Through citizen sciences, villagers are really motivated by the project since they are part of a scientific study;
- Providing capacity to the communities to monitor and assess their own wetlands provides a strong base;
- Creation of committees provides a framework and structure for the management of resources and thus gives sustainability to the project.

OBSTACLES

- Difficulties in collecting accurate data to properly assess the results of the different agriculture techniques;
- Even with a sustainable waste management program, waste disposal and management continues to be a major issue since people often dispose of their waste on their own way, which usually means burning their waste, or dumping it in fields, forests, and rivers.



« Clean rivers in Laos are critically important to the well-being of local communities and to the country's national development. »

The Asia Foundation

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