



## CASE STUDY

# China: Integrated ecosystem management in Upper Yangtze River Basin



## Summary

China is faced with significant costs regarding floods and degradation of ecological conditions in the Yangtze River basin. As a response, the application of Ecosystem Function Conservation Areas approach has been initiated to increase water retention capacity and reduce sediment loads, but also to provide benefits in biodiversity, carbon sequestration and sustainable land management. The key lesson is that success is easier to achieve with positive natural and political conditions.

## Background

The Yangtze River is the largest river in China, with a total length of 6,300 km and a drainage area of 1.8 million km<sup>2</sup>. Over 400 million people live in the Yangtze River basin. The river has significant impacts on the environment of the East China Sea. In recent years, the river has suffered from industrial pollution, agricultural run-off, siltation, and loss of wetland and lakes, which exacerbates seasonal flooding.

As part of its efforts to reduce floods in the Yangtze River basin, the Government of China (GOC) is implementing a series of soil and vegetation conservation programs in the upper Yangtze River basin. In an effort to further increase the benefits of these measures, the GOC has started to implement an Ecosystem Function Conservation Areas (EFCAs) program that will increase water retention capacity and reduce sediment loads. The Government of China is faced to significant costs regarding floods and degradation of ecological conditions in the Yangtze River basin.

As a response, the application of Ecosystem Function Conservation Areas (EFCAs) approach has been initiated not only to increase water retention capacity and reduce sediment loads, but also to provide

benefits in biodiversity, carbon sequestration, sustainable land management. The GOC gave high priority to rehabilitation and conservation of natural ecosystems in the upper and middle basins of the Yangtze River.

## **Actions taken**

A system of EFCAs with multiple environmental benefits has been set up in the upper basin of the Yangtze River. The aim is to contribute to the national ecological function conservation area. The strategic goal of the project was to build necessary capacity to assess and plan the location of future EFCAs, design and implement a system to monitor environmental values, and to demonstrate integrated ecosystem management.

Efforts have been made to establish two demonstration sites to increase water retention capacity and reduce sediment loads, coordinate sector programs, protect biodiversity, and increase carbon gains in

an integrated manner. In each demo site province, a committee with representation from major stakeholders presided by the provincial government coordinate all the activities in the project.

Based on the results of the demonstration activities, the Chinese Government is expected to replicate the project results throughout the Yangtze upper river basin in the future. Training syllabus and materials for 1,000 school children, farmers, authorities, and various managers were developed and disseminated among the agencies represented in the IEMCC. IEM and environmental protection training sessions have been introduced in primary schools. A database and ecological monitoring models and early warning system in coordination with the two demos were established i.e., Baoping, Sichuan; and Laojunshan, Yunnan.

## **Outcomes**

The outcome is the development of alternative livelihoods to promote local economic growth and to

increase income of local villagers. Livelihoods such as traditional Chinese herb cultivation and fruit tree plantation have been initiated through this project. With the support of the project, 76 local Tibetan families have started ecotourism business and cultivation of traditional Chinese herbs has been further extended. Laojunshan Demo site also continued with alternative livelihood development, supporting Yangdu mushroom cultivation.

Ecotourism in Lashihai area and plantation of Morchellaspp (a kind of mushroom considered as delicacy in China) are some of the two successful examples of alternative livelihood development in the demo-site. Other important outcomes of the project include enhancement of remote sensing and field surveys to develop water retention indicators, soil erosion and sedimentation indicators and indicators for measuring habitat quality.

## **Lessons Learned**

The project took advantage of positive natural and political conditions to sustain the integrated management of the Yangtze River Basin watershed areas and conservation of biodiversity. Thus, MEP mainstream IEM in the implementation of National Biodiversity Strategies and Action Plans (NBSAP).

The project has received the Government of China's high priority. Nature conservation in the upper Yangtze River Basin region has received much attention and support, with planned investment of 9.29 billion USD in the next five years.

These resources, paying for rehabilitation and restoration measures, will be sector-based and led by the various ministries. Part of these rehabilitation and restoration efforts have established the baseline of investments that this project will build upon to achieve environmental benefits.

**Corresponding Author**

Yan, A

**Corresponding Author Contact**

a.yan@mepfeco.org.cn

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