Food and Agriculture Organization of the United Nations

Project News: Securing Biodiversity Conservation and Sustainable Use in Dongting Lake Protected Areas

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Community Co-Management in Dongting Lake Nature Reserves GCP/CPR/043/GFF

Highlights

1. For Qingshan Island of the Hengling Lake Nature Reserve, we aim to develop organic planting and breeding industry, promote the healthy and swift growth of eco-tourism, help to solve the livelihood issues of community residents, while also try to formulate community co-management model.

2. For the South DT Lake Nature Reserve, we aim to help people in poverty in the community to obtain the benefits of transformation of livelihood, and expand the co-management model of environment-friendly communities.

1. Project Progress

1.1 Demand survey

Community co-management refers to involving the residents of the community in the decision-making, implementation and evaluation of our protection plan, so as to form a management model with protected area administrations to jointly manage natural resources.

Creating a community co-management model in a protected area can achieve:

(1) Resource cohesion. Individual resources could be gathered through co management channels, thus providing a basis for mapping out the scale of resources, which could greatly help the implementation of protection measures.

(2) Industry optimization. The merging of individual practice into groups can better optimize industries in the community to form an industrial cluster effect.

(3) Promote development of the community. It is conducive to raising the well-being and environment awareness of community residents. By coordinating economic development with biodiversity conservation, we would like to encourage local residents to actively participate in the protection and management of protected areas.

2. Community Co-Management Demonstration Project

2.1 Qingshan Island in Hengling Lake Nature Reserve, Xiangyin County

2.1.1 Problems faced

(1) Qingshan Island is heavily dependent on resources in lakes and bottomlands and is extremely lack of industrial structure. The income of the whole village in 2018 mainly comes from the following aspects: A) fishing; B) sand and gravel mining; C) odd jobs and; D) agriculture. Fishing and migrant working are currently the two largest economic activities in village.

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(2) Qingshan Island residents can barely provide themselves, as a result of high average age, low knowledge level, poor health status and education of community members --more than 90% of fishermen in Qingcao Lake only received junior high school level education or even below.

(3) Lack of infrastructure and distinctive product brands in Qingshan Island community. Qingshan is an island formed by alluvium deposits. Coupled with an aged population, no other transportation facilities than ships are used by the locals. There are no schools, hospitals or other infrastructure on the island, while it is short of basic conditions for the development of large-scale crops.

2.1.2 Solutions proposed

According to the situation of community residents, an economic system in line with the basic conditions of the local community are considered necessary to be established, while leading industries should be selected to pillar the economic growth. The Island is rich in resources for the development of eco-tourism industry, such as Fructus Viticis and fishery, but is short of popularity and marketing channels, so we should consider about localization of agricultural products processing and farmers' employment.

How to effectively guide the residents of Qingshan Island to adopt the dual mode of "sustainable fishery" and "eco-tourism" under the "ten-year fishing ban" so that an adjustment to the economic structure might be successful? Solution towards promoting the development of community economy and combining ecological, economic and social benefits was proposed to implement the Qingshan Island community co-management demonstration project.

2.1.3 Implementation planning

Ecological fish farming

(1) Development of organic fish farming. From the second quarter of 2020 to the Spring Festival in 2021, Hengling Lake Nature Reserve plans to support the contractor in the inner lake of Qingshan Island to develop 500 mu (about 33.33 hectare) organic fishpond, while the GEF project will provide technical supports in terms of hiring experts as well as providing fish fry and aquatic plant seedlings. It aims that, through organic aquaculture practices in the experimental waters, empirical techniques of organic fish farming would be obtained related to improving water quality, providing abundant food for birds and other species, creating employment opportunities for the residents, and develop ecological economy in the protected area.

Euryale Ferox planting

In order to find out what the Nature Reserves need in terms of protection, monitoring and management, and to understand the current situation and existing problems of the four Nature Reserves on the spot, the project team made a demand survey plan in the first quarter of 2018, and then conducted the survey in Hunan Forestry Bureau, Yueyang Forestry Bureau, and four Nature Reserves in the second quarter. The survey collected a large amount of data and application requirements so as to determine the project scope and analyse the demands. A return visit has been made in the second half of 2018, further satisfying the functional and data demands of the Information Monitoring System.

(2) Development of planting industry of Fructus Viticis. Fructus Viticis is a unique plant species only found in Qingshan Island all across Hunan Province. It has high pharmaceutical value and belongs to the second-class protected species of Hunan Province. Fructus Viticis has bright flowers and long flowering period, and is a very high-quality resource that can effectively promote the development of eco-tourism industry in the protected area. It is planned that from the second quarter of 2020 to the Spring Festival in 2021, the GEF project will provide funds to support in setting up local planting cooperatives comprised of village groups, developing an experimental base for ecological planting of Fructus Viticis, hiring experts to provide technical support in terms of seedling, and assist in research, processing, promotion, trademark registration, packaging design, marketing and application for geographical identified species of this product , etc., dating from the second quarter of 2020 to before the Spring Festival in 2021.

Fructus Viticis in bloom

(3) Increase in investment in scientific research. The plan is to apply a certain amount of scientific research funding from GEF grant for the above two planting and breeding projects, so that their planting and breeding technology, development model and practical experience can be summarized and promoted .

(4) Implementation of ecological leisure fishing. It is planned to support local farmers to develop eco-tourism project such as leisure fishing based on organic fishery farming, build a fishing base with 100 fishing spots, with experts to provide technical advice for eco-tourism.

(5)Ecotourism brand building of "Dongting Bird watching". Implemented by the Mission Department, The Nature Reserve Management Bureau will develop the eco-tourism programme "Dongting Bird watching" by selecting suitable sites to build two permanent birdwatching houses with necessary facilities installed. Posters and picture albums will also be applied to publicize the knowledge of bird protection.

(6) Development of leisure and holiday tourism projects. Qingshan Island is located in the north of Xiangyin County and can only be accessed by water transportation. It has low population density, good environment, wide distribution of fine sandy flat, large inner lake area and developed aquaculture industry. It is one of the only three remaining fishing villages in the country. It is also the last fishing village in Hunan, which has formed its unique humane ecosystem for a long time.

Different from the scenic spots vigorously developed in and around Dongting Lake, the tourism of Qingshan Island is still in its infancy. At present, the tourism products developed in this area include Castle Peak Memorial Pavilion, longevity trees, beach football, small farmhouse etc. With only a small part of the island's tourism resources being developed, and it still has great potential for development.

According to the unique geographical location and environment of Qingshan Island, recreation and tourism projects relying on the water landscape of Dongting Lake, ecological fishery farming industry and characteristic beach resources bear the highest development potential. The purpose of development is to effectively solve livelihood issues of fishermen that were banned from fishing in the Nature Reserve. Meanwhile, we should focus on the ecological protection of wetlands and sustainable development, so as to achieve the purpose of benign interaction between ecological protection and economic development.

2.1.4 Implementation goals

I. Short-term goal.

(1) More than 150 families participate in ecological fish farming.

(2) More than 100 families participate in eco-tourism.

(3) The average annual household income increases by 2000 yuan.

II. Long-term goal.

Through implementation of this project, we wish to establish a popularized model to combine ecological fish farming and eco-tourism in the project area, to allow community residents to consciously participate in the management of protected areas and realize community co-management.

2.2 Construction of industrial base of mushroom production for rural revitalization in South Dongting Lake Nature Reserve (Yuanjiang County)

2.2.1 Production mode

The fungus rods made of reeds as the main raw material are produced by enterprises and distributed to some farmers in poverty around the South Dongting Lake Nature Reserve. The enterprise provides technical guidance and support in the production and management of mushroom production, and in charge of sales of fresh mushrooms and the supply chain to produce mushroom processed food, through which farmers can benefit.

2.2.2 Core problem solved

(1) Restore the wetland biological communities that coexist with reeds and conserve wetland biodiversity. In the past, human cutting caused the yields of wetland reeds to be much higher than natural growth, which affected the development of wetland biological communities that accreted with reeds. After withdrawal of the traditional paper-making industry, the project will set up an example to show how to use reed as the raw material to produce mushroom rod base, so as to reduce impact of historical manual intervention on the wetland reed as well as

biological community. At the same time, it will reduce hidden dangers of devastating wetland ecosystem due to fire risk caused by high reed density and large backlog.

Mushroom strains were pinched loose

(2) Alleviate the problem of reduction of the production and income level of the community residents due to ecological environment improvement and ecological protection policies, and motivate them to take part in the role of development and management of the protected area.

Reeds processed into rod base material

Farmers' sites for mushrooms production are generally idle vacancies or "hollow rooms", which provide a new mode of use for idle assets. Management practices only involve watering the fungus rod, and only takes the short time break before the morning and after evening labor time. Mushroom picking can be done by all-aged men, women and children, so surplus rural labor resources are fully utilized. The promotion and development of the green edible mushroom industry has changed the previous reliance on the wetland resources and the traditional reed paper industry of the local communities. By obtaining a new source of income, to a certain extent, it will reverse the tendency of locals trespassing into the core zone and bringing in damage to the biomass of protected area. Furthermore, it is expected that this practice will successfully engage them in the long-term development and management of the protected area.

2.2.3 Implementation planning

The project demonstration area is planned to be established in Baishazhou Village area of Gonghua Town (with base constructed by an enterprise), with a planned area of 5027 *Mu (about 335 hectare)*. Among them, 5000 *Mu* is for reed raw material production, while 27 *Mu* (18000 ㎡) is office and technology promotion centre with its cultivation area. It is planned to be cultivated in 1000 households in total, during which 10 with special poverty or difficulty are supposed to be supported by the GEF project.

(1) Building infrastructure.The enterprise plans to build an office building integrating base office, whose function will include technology research and development, science demonstration, training and promotion. It is planned that a technology R&D promotion centre, a steel structured mushroom cultivation production area, and a steel structured transparent sorting and packaging area will be constructed to achieve this vision.


One type of mushroom cultivated

(2) Construction of reed raw material base. It is planned to lease 5000 *Mu* of reed island beach with convenient transportation and high output. With an annual output of 5,000 tons of reeds, 4,000 tons of reed crushed raw materials could be provided for mushrooms.

(3) Strain introduction, technical training, and promotion. Project activities are planned to disseminate mushroom cultivation technology from scientific research institutes and model demonstration bases, introduce mushroom strains, and organize technical training for the farmers involved in the protected area. By applying the base + farmer model, lectures will be given to local farmers with technical documents distributed. The vision is to have 1,000 people in the surrounding communities covered in the training programme, and 1,000 fungus rods per production cycle distributed to each household. The GEF project plans to support 10 struggling households in the co-

cmmunity. It is planned to provide each household with 2,100 rods, and a total of 21,000 rods will be delivered. The mushroom production base will be in charge of collecting, processing, packaging and marketing of products.

Another type of mushroom cultivated

2.2.4 Implementation goals

(1) Set up new economic growth models for the communities in the protected areas after withdrawal of reed papermaking industry and the complete banning of fishing in and around the Dongting Lake area;

(2) Guide and promote the increase in production and income of the community, help locals in poverty or difficulty to obtain benefits from industrial transformation, and motivate them to take part in the protection and management of wetland Nature Reserve;

(3) Establish green development models and alternative livelihoods to reduce human interference in protected areas;

(4) Construct a model which allows human and nature develop together sustainably, which also promotes the modernization of the governance capacity and governance system of the South Dongting Lake Nature Reserve.

Project Overview

"Securing biodiversity conservation and sustainable use in China's Dongting Lake protected areas" is a five-year-long project being executed by the Forestry Department of Hunan Province (FDHP) and the Hunan Province Finance Department (HPFD) under the supervision of the Food and Agriculture Organization of the United Nations (FAO) and financed through the Global Environment Facility (GEF). The total budget of this project is USD 10.55 million, of which USD 2.95 million is contributed by GEF while the other 7.5 million is co-financed by FAO and FDHP.

The project aims to strengthen the existing institutional and policy framework; to promote an integrated, ecosystem-wide planning and management approach; to develop biodiversity and biodiversity friendly production practices to reduce human activity pressure on the Wetlands; and to increase institutional capacity and public awareness and support for wetlands conservation.

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