

# **Estimation of Direct Use Values of Wetlands: A Case Study of Xuan Thuy National Park, Ramsar Site, Viet Nam**

(湿地の経済分析：ベトナム、スアントゥ国立公園のケーススタディ)

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## **Introduction**

Located in Nam Dinh Province, Xuan Thuy National Park (XTNP) is the first Ramsar site in Viet Nam and the important core zone of Red River Delta Biosphere Reserve with more than 15,000 hectares in total area. It is viewed as a typical wetland ecosystem of national and international importance and the basis of livelihood for more than 48,000 local people. However, the national park is now under a number of threats and problems including resource overuse and mismanagement. Large areas of the wetland have been reclaimed for the aquaculture; fishery resources have decreased due to over-exploitation and a large number of mangrove areas have ever been destroyed because of aquaculture expansion. Moreover, the environment is being polluted due to chemical waste from agriculture cultivation and the increasing population in the buffer zone, of which 50 percent directly relies on the wetland resources, exerts additional pressure on the wetland conservation and management in the region. This study is aimed at partially filling an information gap relating to the economic values of the wetlands in XTNP. The estimation of wetland direct use values provides evidence of the wetlands' monetary benefits to community and the managers in order to gain their support for sustainable management and wise use of the wetlands. The results of this study might be useful recommendations for making trade-offs among options for wetland resources management in this area.

## **Methodologies and Data Collection**

Market Price Method (MPM) and Travel Cost Method (TCM) were used to calculate direct use values of wetlands in XTNP. MPM is applied to estimate the goods provided by wetlands including honey production, capture fisheries, seaweed and aquaculture products (shrimp, clam and crab) where markets for these goods exist. The TCM was applied to estimate wetlands' non-market value which is eco-tourism activity in this region. There were a number of questionnaire

surveys carried out to collect primary data on aquaculture activities and eco-tourism. The secondary data from various annual reports, previous research and projects were also collected and analyzed.

## **Results and Discussions**

The estimation results show that across seven main economic activities in XTNP, aquaculture (shrimp, clam and crab) gives the highest annual net benefit to local community (nearly VND155.61 billion), followed by eco-tourism (VND29.31 billion), capture fisheries (VND12 billion), seaweed culturing (VND9.3 billion), and then honey production (VND1.2 billion). The aggregation of total annual net benefits for the whole XTNP is calculated at VND207.42 billion, equivalent to USD10.22 million. Total direct use values of wetlands in XTNP contributed 1.9% in total GDP of province in 2010 while the area of XTNP is about 0.91% the total area of land in the province.

Despite of generating a huge amount of benefits to the community every year, the expansion of aquaculture in recent years has caused to environmental degradation; changes of wetland ecological system and other social issues in XTNP, which were also analyzed in this study. In contrast, eco-tourism is the second beneficiary sector in the region with less harmful socio-environmental impacts, it is still under development.

How to harmonize the different kinds of benefit such as social, environmental and economics among different stakeholders is always very complicated for any decision maker. Thus, recommendations for minimizing pressure of current economic activities on environment and wetland ecosystem; applying Payment for Ecological Service; creating more eco-friendly alternative livelihoods for local people and enhancing community awareness were proposed in this study in order to achieve sustainable management and wise use of wetland resources in XTNP.

