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## COMMUNITY SERVICE | REPORT

# River Cruise Tourism Development with Focus on Fish Nurseries and Land Revitalization in Rempanga Village

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**Abstract:** Rempanga Village in Kutai Kartanegara Regency is one of many areas in East Kalimantan actively focusing on sustainable tourism development. This article discusses how river cruises can promote tourism while also promoting conservation. To protect the ecosystem, this practice is followed by fish nurseries and land revitalization. The purpose of this study is to see how river cruises can promote environmental conservation and improve the welfare of local communities. The approach used in this research study was descriptive qualitative and data were collected through documentation studies, interviews, and observations. The results showed that although river cruises have a lot of potential to grow, there are a number of obstacles that stand in the way. Combining tourism and conservation efforts can be a powerful way to address these issues. Fish nurseries and land restoration can not only help with environmental conservation, but also make a destination more attractive to tourists. According to the study findings, Rempanga Village's decision to introduce river cruises is a reasonable first step towards achieving sustainable tourism.

**Keywords:** Conservation, Tourism, River Cruise Tourism, Fish Nursery, Land Revitalization, Ecosystem, Restocking.

**JEL Code:** Q01, Q26, R11, Z32

## 1. INTRODUCTION

Rempanga Village, with its abundant natural resources, especially in the fisheries and agriculture sectors, has great potential to be developed as a sustainable tourist destination. This potential can be seen from the existence of fast-flowing rivers, unspoiled mangrove forests, and high biodiversity. This research aims to identify the potential for developing river cruises, fish nurseries, and land revitalization as an effort to improve the welfare of the local community. By adopting a sustainable tourism approach, it is expected to create a balance between economic growth, environmental conservation, and community empowerment. Through qualitative research, this study analyzes various aspects, ranging from the potential of natural resources to the challenges faced in its implementation.

Sustainable tourism development cannot be separated from the active involvement of local communities. Communities have valuable traditional knowledge and local wisdom in natural resource management. Rempanga Village, with its rich culture and local wisdom, offers an opportunity to develop community-based tourism. This research specifically analyzes how river cruises, fish nurseries, and land revitalization can empower local communities and increase their participation in natural resource management. By involving the community from the planning stage to implementation, it is expected to create a sense of ownership and sustainability in tourism development.

Previous research on sustainable tourism in rural areas has been conducted, but there are still some knowledge gaps, especially related to the development of natural resource-based tourism such as rivers. This research aims to fill this gap by focusing on Rempanga Village, East Kalimantan. By examining

the potential of river cruising, fish nurseries, and land revitalization, this research is expected to make a new contribution to the development of a more comprehensive sustainable tourism model. In addition, this research also aims to identify the key factors that influence the success of sustainable tourism development. key factors that influence the success of sustainable tourism development in rural areas, as well as formulate policy recommendations that can be applied in other areas with similar characteristics.

## 2. RESEARCH METHOD

In the implementation of the Mulawarman University Community Service Program (KKN), activities were carried out in Rempanga Village, Loa Kulu District, Kutai Kartanegara Regency, East Kalimantan Province, from July 6 to August 22, 2024. The target objects in this activity were the village community, including farmers and fish cage owners. The number of participants involved reached 50 people, consisting of various community groups. This activity focused on identifying the village's potential and existing problems. Through in-depth interviews and participatory observation, the KKN team gathered information on natural resource management. The analysis showed that the fisheries and agriculture sectors have great potential but face challenges such as accessibility and seed quality. The program aims to empower the community and improve welfare through sustainable development and collaboration with various parties. The research results will be presented in the form of written reports and videos as recommendations for village development.

## 3. RESULTS AND DISCUSSION

### 3.1. Fisheries

#### a. *Availability of Endemic Fish Seeds*

One of the main problems faced by fish cage groups in Rempanga Village is the lack of availability of high-quality endemic fish seeds. Although they have received assistance from the Kutai Kartanegara Regency Fisheries and Marine Office, the subsidized seedlings do not meet the expected quality standards. This problem results in losses for fish farmers, as poor seedlings have a direct impact on the productivity and quality of the catch. As a result, fish cage groups are forced to find alternatives by purchasing seeds independently from Ponoragan Village, which certainly adds to the cost burden and potentially reduces profits.

#### b. *Water Quality Impairment*

In addition to the seedling problem, the deteriorating water quality in the Mahakam River poses a serious threat to the fisheries sector. Pollution caused by domestic waste and contamination from mining pits has resulted in a decrease in dissolved oxygen levels as well as an increase in harmful substances in the water. These conditions have the potential to trigger stress in fish, which can lead to mass mortality and a decline in fish populations. In addition to the direct impact on fish health, water pollution also damages aquatic ecosystems that support other biota, worsening the situation in the fisheries sector.

#### c. *Accessibility and Distribution*

Accessibility to fish cage locations is also a constraint in production activities. Inadequate roads hamper the distribution of fish to markets, reducing the competitiveness of products produced by cage groups. This requires support from the village government to improve existing infrastructure. Improved road access will increase distribution efficiency and open up opportunities for cage groups to reach a wider market.

#### d. *Role of Village Government*

The active role of the village government is crucial in addressing the problems faced by fish cage groups. The government is expected to not only provide assistance in the form of seed subsidies, but also in training and capacity building programs for fish farmers. In addition, river cleaning and

domestic waste management efforts also need to be focused on to improve water quality. With the right policies and collaboration between the government and the community, the existing problems can be addressed comprehensively, so that the fisheries sector in Rempanga Village can develop well.

### 3.2. Agriculture

Rempanga Village has great potential in the agricultural sector. This is supported by several main factors, namely the large amount of agricultural land as the basic capital for sustainable agricultural activities, the availability of sufficient water sources for irrigation, especially in supporting rice fields, and the community's farming expertise that has been passed down from generation to generation. These factors are an important foundation in developing the agricultural sector in the village. The main agricultural commodity in Rempanga Village is rice. As the leading product, rice plays an important role in the village's food security. By focusing on rice, farmers are able to produce a commodity that is a staple of the community's daily needs and has good market potential in the surrounding area.

Farmers in Rempanga Village face a number of obstacles that affect productivity and yields. One of the main challenges is the emergence of new types of pests that they have never encountered before, which risk causing crop losses due to the lack of knowledge on how to deal with these pests. In addition, limited agricultural tools, such as tractors, make it difficult for farmers to cultivate the land efficiently. To overcome this obstacle, the farmers worked together to raise funds to purchase a tractor unit, which can be shared and rented out to other farmer groups in Rempanga Village. In addition to traditional constraints, there are more complex challenges in the modern era. These include the limited use of technology in agricultural activities, which makes it difficult to improve farmers' productivity and work efficiency. Pest management is also a major challenge, especially with the emergence of new types of pests that are more difficult to deal with. In addition, erratic climate change has a negative impact on crop yields, as extreme weather can damage crops in a short period of time. To help farmers improve productivity and welfare, some of the measures that need to be implemented include the application of modern agricultural technology to increase efficiency and productivity, the development of processed products from crops to increase selling value and expand markets, and further support from the government in the form of training, subsidized agricultural equipment, and pro-agriculture policies.

All of these challenges and potentials are relevant to tourism development in Rempanga Village, particularly through this article. This article highlights how the agricultural sector and land revitalization can be developed synergistically with tourism activities, potentially increasing community income and attracting tourists to experience a unique tourism experience in the village.

### 3.3. Tourism

Rempanga village has an area of 867.79 hectares, which consists of two hamlets, namely Hulu Hamlet (RT 01, 02, 03) and Hilir Hamlet (RT 04, 05, 06, 07, 08, and 09). The majority of Rempanga Village residents work in services, trade, agriculture/fisheries, government workers, and the private sector. After conducting observations, we found out that Rempanga Village has a river area that has the potential and interest to be developed as a tourist destination such as river cruising and fishing. With the existence of fishing or river cruising tours, Rempanga Village is better known by the wider community, especially in today's modern era. The main problem identified in the river area is the absence of fish and land conversion, therefore we collaborate with the KKN Group of the Faculty of Law, Mulawarman University to carry out restocking and land reforestation.

River fish restocking is one of the fisheries resource management strategies that aims to increase fish populations and restore aquatic ecosystems. This activity is important to maintain ecosystem balance, support the sustainability of fisheries resources, and meet the needs of people who depend on fish as a source of protein. The objectives of restocking are:

- a. Restocking aims to increase the number of fish in rivers that have suffered population declines due to overfishing, pollution or habitat alteration.

- b. By increasing the number of certain fish species, restocking can help restore biodiversity in aquatic ecosystems.
- c. Restocking can increase catches for local fishers, which in turn can improve the economic welfare of the community.
- d. This activity is often accompanied by habitat rehabilitation efforts, such as river cleaning and riparian vegetation planting, to create a better environment for the fish.

Greening along the river is a very important activity in an effort to maintain the balance of the ecosystem and prevent various environmental problems. One of the main benefits of reforestation is its ability to prevent flooding. Planting trees in the area around the river can help absorb rainwater through the roots of the trees, which in turn reduces the volume of water flowing into the river and prevents flooding (Kadir, 2023). In addition, afforestation also plays a role in reducing sedimentation in rivers. Planting trees on riverbanks can strengthen soil structure and prevent erosion, which is often the main cause of sedimentation (Suryanti, 2024).

Furthermore, greening along the river can improve water quality. Vegetation growing around the river serves as a natural filter that can filter out pollutants and increase oxygen levels in the water (Jupri et al., 2022). Thus, reforestation is not only beneficial for the river ecosystem, but also for the people who depend on these water resources. Research shows that communities involved in reforestation activities tend to have a higher awareness of the importance of protecting the environment (Saragih, 2024). These activities can also increase community participation in keeping rivers clean and reduce pollution caused by domestic and industrial waste (Khotimah & Nasruddin, 2022).

Greening along the river also contributes to the development of ecosystem-based tourism. For example, the development of river cruises can attract visitors and provide economic benefits to local communities (Rakhmawati, 2024). Thus, afforestation serves not only as an environmental conservation effort, but also as a strategy to improve community welfare through environment-based economic development. Overall, reforestation along rivers has many interrelated benefits, ranging from flood prevention, sedimentation reduction, water quality improvement, to tourism development. Therefore, it is important for all parties, including the government and communities, to collaborate in implementing a sustainable and effective afforestation program.

#### 4. CONCLUSION

Rempanga Village faces challenges in the fisheries, agriculture and tourism sectors, but also has great potential in each. In the fisheries sector, key issues include low quality fingerlings and river pollution, which affect productivity and ecosystem health. In agriculture, large tracts of land and local expertise are strong assets, but new pests and limited technology hamper productivity. In the tourism sector, the river area has the potential to be developed for river cruises and fishing, which can provide additional income for the community. The main recommendations include improving the quality of seedlings and controlling river pollution, improving infrastructure for the distribution of fishery products, implementing modern agricultural technology, restocking and reforestation programs along the river, and developing ecosystem-based tourism involving collaboration between the government and the community. Between the government and the community. These measures are expected to improve community welfare and maintain environmental sustainability.

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