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Strengthening Pokdarwis Institutions as a Strategy for Developing Mangrove Ecoedutourism in Tluwuk Village, Pati Regency

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Abstract

This community service program aimed to strengthen the institutional capacity of the Tourism Awareness Group (Pokdarwis) “Karya Pamuji Agung” in managing the mangrove-based tourism potential in Tluwuk Village, Pati Regency, through organizational development and the formulation of Standard Operating Procedures (SOP) based on the ecoedutourism concept. The main issues identified included weak organizational management, the absence of tourism management SOPs, and limited promotional and visitor service skills. The implementation was carried out through stages of socialization, training, mentoring, and evaluation using the Participatory Rural Appraisal (PRA) approach to ensure active community involvement. The results indicated improved competence among Pokdarwis members in planning programs, understanding the principles of the tourism *sapta pesona*, and applying four SOPs covering general tourism services, mangrove edutourism, birdwatching, and salt production tourism. This program has enhanced the group's organizational structure and management capabilities, enabling Pokdarwis Karya Pamuji Agung to act as a community-based driving force for sustainable mangrove ecoedutourism development in Tluwuk Village.

Keywords: ecoedutourism, mangrove, pokdarwis

INTRODUCTION

Pati Regency is one of the areas on the north coast of Central Java that has abundant natural resources, including mangrove ecosystems spread across various coastal areas (1). Mangrove ecosystems have physical, biological, and economic functions. Physically, mangroves play a role in protecting the coast from abrasion and their root system acts as a trap for sediment and waste originating from the mainland. From a biological perspective, mangroves are a habitat for various organisms such as fish, shrimp, and crabs. Meanwhile, from an economic perspective, mangrove wood can be used as fuel and its fruit as medicine. In addition, mangroves can also be a tourist attraction that can open up job opportunities and serve as a place of education (2,3). One of the villages with a significant mangrove area is Tluwuk Village, Wedarijaksa District, Pati Regency. The area of mangrove forest in Tluwuk Village reaches around 20 hectares (4). The existence of mangroves in this village not only provides protection for the surrounding marine ecosystem, but also holds great potential to be developed as an educational and environmental tourism destination (5).

Mangrove ecosystems play a crucial role in mitigating the impacts of global climate change. Mangroves have the ability to absorb and store large amounts of carbon, making them a natural solution to reducing carbon emissions. Mangroves can store up to 200 tons of carbon per hectare in their biomass and soil (6), a significant amount compared to other terrestrial ecosystems. In the context of Tluwuk Village, the presence of mangroves can also help mitigate the negative impacts of abrasion, which is often a serious problem in coastal areas of Central Java. Continuous abrasion not only damages land but also threatens the livelihoods of coastal communities that depend on marine and aquaculture products (7,8).



Figure 1 Condition of Mangroves in Tluwuk Village

Tluwuk Village is included in the priority development of tourism villages in Central Java Province in 2023 with the theme of coastal tourism (9) and has taken initial steps to utilize the potential of the mangrove ecosystem by developing basic infrastructure to support tourism. Several facilities have been built, including a jogging track along the mangrove area, gazebos as resting places for visitors, and public bathrooms to meet basic tourist needs. However, this infrastructure development has not yet been integrated with the Ecoedutourism concept, which emphasizes educational value and environmental sustainability. The existing infrastructure tends to be simple and has not been designed to support an in-depth tourism experience. The existence of infrastructure designed thematically and in accordance with the concept of sustainable tourism can increase tourist attraction by up to 35% in the first two years of its development (10). Tluwuk Village requires a more holistic design to make its mangrove area a leading tourist destination.



Figure 2 Tourism Activities and Infrastructure of Tluwuk Village

One of the main challenges facing Tluwuk Village in developing tourism is the limited capacity of local institutions, particularly the Tourism Awareness Group (Pokdarwis). The Tluwuk Village Pokdarwis has been established, but membership is not yet optimal because most members prefer to focus on other economic activities. The majority of residents in Tluwuk Village rely on salt ponds for their primary income, which provide greater economic benefits than tourism activities, which are still in the early stages of development (11). This has resulted in a lack of attention to mangrove tourism, despite the area's significant potential. The lack of active involvement of Pokdarwis is a major obstacle to targeted and sustainable management (12). The development of Ecoedutourism in Tluwuk Village requires collaboration from various parties, including local government, academics, the private sector, and local communities. This support can include technical assistance, skills training, and financial assistance for infrastructure development and tourism programs. This multi-stakeholder collaboration is crucial to ensure that tourism management is planned and sustainable.

METHOD

The implementation method for increasing the institutional capacity of the Karya Pamuji Agung Tourism Group (partners) is based on an analysis of the problem description and activity plan. Based on the problem descriptions encountered by the partners, the program implementation method is as follows:

- a. Group-based, all stages and types of activities will be carried out by the Karya Pamuji Agung Tourism Awareness Group (partners). This includes: training and mentoring on group management, planning, implementation, and monitoring of activities.
- b. Comprehensive, to improve the knowledge and skills of all partners in the institutional development of Pokdarwis in managing tourism potential through the preparation of work

- plans and standard operating procedures for managing the Tluwuk Village mangrove area.
- c. Based on Local Potential, increasing knowledge and skills in managing tourism potential based on local potential including the natural landscape of the mangrove area and the culture of the Tluwuk Village community based on *ecoedutourism* using the Participatory Rural Appraisal concept.

The existence of these three methods is expected to have an impact on the Pokdarwis Karya Pamuji Agung Tluwuk Village which is a fostered partner, both in terms of human resources and group management aspects. In accordance with the objectives of the activity, the methods that will be taken in this community service activity will be implemented in 4 (four) stages of activity, namely: (1) Socialization, (2) Competency Improvement, (3) Activity Implementation, and (4) Monitoring and Evaluation.

RESULTS AND DISCUSSION

The implementation activities for the institutional development of the Karya Pamuji Agung Tourism Awareness Group as a strategy for developing mangrove *ecoedutourism* include:

Preparation of Group Work Programs

The program planning activity was carried out with the involvement of partners, namely the Karya Pamuji Agung Tourism Group (Pokdarwis) and the Young Youth Youth Group (Karangtaruna Muda Berkarya), to convey the aims and objectives of community empowerment with the theme of developing *ecoedutourism* in Tluwuk Village. This socialization activity was held at the Tluwuk Village Hall on June 21, 2025. The event was also attended by community leaders of Tluwuk Village and the community service team from Semarang State University.



Figure 3 Work Program Preparation Activities

The first stage of the activity was a participatory identification of potential and problems. Through group discussions and a *problem-ranking method*, the community identified three main challenges facing *ecoedutourism* development: waste in coastal and mangrove areas, limited access to tourist sites, and minimal promotion and branding of the village as an educational tourism destination.

The work program preparation activity was carried out to determine the steps and targets achieved based on needs identification. The work program was prepared for a period of 1 year and 5 years. In addition to preparing the annual work program, the group agreed to hold a meeting at the end of each year to evaluate the work program's achievements. In the first year, *ecoedutourism development* focused on increasing the capacity of *guide human resources*, promotion, standard operating procedures, and preparation of tourism infrastructure. Until the development in the fifth year, it is hoped that the group will be independent in managing mangrove-based *ecoedutourism tourism* in Tluwuk Village.

Capacity Building Through Mangrove *Ecoedutourism* SOPs

Capacity building through the SOP for mangrove *ecoedutourism* was carried out by involving the Community Service Team of Semarang State University (UNNES), members of the Karya Pamuji Agung Tourism Group (Pokdarwis), and the Tluwuk Village Youth Organization (Karang Taruna Muda Berkarya) as managers of the Tluwuk Village mangrove tourism area based on standard operating procedures based on the seven tourism charms. The preparation of this SOP was carried out in a participatory manner regarding the necessary aspects as well as important elements to ensure the

sustainability of the tourism object, both in the form of economic sustainability and the safety aspects of tourism visitors.



Figure 4 Preparation of SOP

The SOP for *ecoedutourism*, mangroves, serves as a reference for the Karya Pamuji Agung Tourism Group (Pokdarwis) in managing tourist attractions based on the seven charms of tourism, including emergency response. This is expected to foster institutional synergy and role allocation to support tourism sustainability. A total of four standard operating procedures (SOPs) are available, including: general tourism services, mangrove *ecoedutourism*, *birdwatching*, and salt production *ecoedutourism*. The following is one of the SOPs agreed upon by the partners:

Table 1 Partner SOP

No.	Activity Description	Executor	Standard Quality			
		Manager Tourist Area	Field Officer	Completeness	Duration/Time	Output
1	2	3	4	5	6	7
1	Regular checks of rides and the completeness of tourism support equipment, cleanliness, safety equipment, and communication equipment.			Checklist form regarding readiness before operating a tourist destination	06.30 – 07.00	Availability of a <i>checklist</i> containing the availability and condition of each aspect of readiness before the operation of the tourist destination.
2	Visitor Arrival at the Tluwuk Village Mangrove Tourism Area. Visitor Registration.			Visitor list, tourist entrance tickets, and parking.	07.00 – 17.00	Recap of visitors and number of motorized vehicles
3	Implementation of the 5S standards: Smile, Greet, Say Hello, Be Polite and Courteous.			-	07.00 – 17.00	Reviews from each visitor via <i>Google Maps</i> or other social media.
4	Inform visitors about established routes, rides, and safety procedures.			Information boards regarding routes, rides and safety procedures at tourist attractions	5 – 10 minutes	Providing information about destinations and safety procedures for visitors

No.	Activity Description	Executor	Standard Quality			
		Manager Tourist Area	Field Officer	Completeness	Duration/Time	Output
5	Informing about the limitations on the use of single-use plastic waste			Information boards and <i>checklists</i> are provided for each visitor.	5 – 10 minutes	Avoiding waste generation at tourist attractions
6	Tourist visits to the Mangrove Tourism Area of Tluwuk Village			Information board regarding the opening/operational hours of tourist attractions	07.00 – 17.00	Conduciveness in tourist attractions and increasing visitor comfort in tourist attractions
7	<i>Clearing areas</i> and cleaning tourist destination locations			Cleaning equipment and communication tools	17.00 – 18.00	Cleanliness of the location and security at tourist attractions
8	Handling in case of emergency or urgent handling			First Aid Kits and Village Ambulance	<15 minutes	Handling of emergency conditions that occur in tourist attractions
9	Handling complaints regarding the comfort and safety of tourist attractions			Suggestion and feedback form	-	There is an evaluation of the service standards that occur in tourist attractions.

CONCLUSION AND SUGGESTIONS

Community service activities in Tluwuk Village have successfully strengthened the institutional capacity of the Karya Pamuji Agung Tourism Group (Pokdarwis Karya Pamuji Agung) in managing eco-edutourism- based mangrove tourism potential. Through a participatory approach and institutional training, partners were able to develop short-term and long-term work programs, as well as formulate four SOPs for tourism management based on the Sapta Pesona (Sapta Pesona) principles. This institutional strengthening has resulted in increased confidence among Pokdarwis members, the establishment of collaborative networks with local stakeholders, and the establishment of more professional and sustainable tourism governance. Thus, this activity contributes to the development of coastal tourism villages that are not only economically valuable, but also educational and environmentally friendly. Village governments and related agencies need to continue providing assistance to Pokdarwis so that the implementation of SOPs and work programs can run consistently and adapt to field needs. Further support is needed in the form of digital promotion training and tourism financial management so that Pokdarwis institutions become more independent and competitive. Multi-stakeholder collaboration between academics, the private sector, and environmental communities needs to be strengthened to expand promotional networks and maintain the sustainability of the mangrove ecosystem as the main asset of Tluwuk Village ecoedutourism.

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