

Revitalization of Winong Spring as a Generator of Ecotourism Activities to Promote Local Economic Development in Giripurno Village as One of Borobudur Buffer Zones

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Abstract Establishing the National Tourism Strategic Area of Borobudur leaves challenges related to the surrounding villages. Most areas surrounding the Borobudur Temple, especially those in Menoreh Hills, have a high potential as a natural tourist destination. The main attractions are related to sightseeing and spring tourism. These potential attractions, however, have yet to be managed optimally due to the lack of resources of the surrounding villages, materially or socially. Our primary purpose is to reactivate the tourism potential in Giripurno Village by developing a new tourist attraction Winong Spring. We developed the new tourist attraction by structuring the current Winong Spring using lightweight, flexible, yet solid designs and building materials. We also revitalized abandoned fish ponds to become an integral Winong Spring tourist attraction feature. The tourist attraction developed at Winong Spring area becomes a new economic potential for Giripurno Village. The community receives the prospective tourist attraction of Winong Spring, which is also reflected in the high community participation in its development. It is also responding to the rising trending river tourism in Indonesia. Properly managed, the new prospective tourist attraction will benefit both ecosystem and economy. Thus, capacity building for tourism management and fish cultivation must be done. In addition, cohesive coordination from all stakeholders is required to guarantee the sustainability of the new potential tourist attraction.

1. INTRODUCTION

In 2016, the Indonesian government designated the Borobudur sub-district as the Borobudur National Tourism Strategic Area (KSPN) (Pemerintah Republik Indonesia, 2016). Development at the Borobudur KSPN has been increasingly carried out after it was made a super-priority tourist destination in 2019 until now (Pemerintah Republik Indonesia, 2019). As a super-priority KSPN, Borobudur Temple and its surroundings will develop into one of the main tourist destinations in Indonesia. In addition to increasing tourist visits, the establishment of KSPN also aims to expand the economic benefits of Borobudur Temple

to the surrounding area.

The central government cooperates with as many as 20 state-owned companies to develop villages around Borobudur Temple tourism objects. The realization of development is to build an integrated tourist area. With Borobudur as the center of attraction, the government also empowers villages in the Borobudur Sub-District to become tourism buffer areas. Village empowerment will be essential in rural revitalization and urban-rural integration (Zhang et al., 2022). The scheme is carried out by channeling Corporate Social Responsibility (CSR) funds to

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predetermined villages. CSR is a corporation’s commitment and action to positively impact society and the environment (Asif et al., 2013). According to (Moffat & Zhang, 2014), the positive impact created will form a corporation’s positive image, referred to as a social license to operate (SLO). For a corporation, the community is the object of CSR activities as well as the subject of village development (Aziz, 2021; Yuliawati, 2020). CSR funds are used mainly for developing the Village Economic Center (Balkondes) (Setiawanto, 2018). The hope is that all villages in the Borobudur sub-district, through the Balkondes program, can develop local economic activities and have unique characteristics that differ from one village to another. One of the villages that received CSR funds and the development of Balkondes was Giripurno Village.

Giripurno Village, one of the most remote and has the highest elevation, has various tourism potentials Figure 1. One type of tourism potential that can be developed in Giripurno Village is ecotourism. Ecotourism can encourage and promote natural and cultural heritage conservation practices accompanied by ecological integrity through activities that positively impact the environment (Stem et al., 2003). With ecotourism, local communities can

take advantage of this opportunity economically while remaining committed to conservation and sustainable development actions (Mathew & Sreejesh, 2017). However, many ecotourism potentials have yet to be optimally managed. As a result, the economic benefits obtained are almost nonexistent. In addition, this village received the latest Balkondes development funds compared to other villages. Not long after the Giripurno Balkondes completed construction in early 2020, the COVID pandemic hit and made tourism activities neglected. This further results in tourism potential and existing infrastructure not providing economic benefits for the Giripurno village community.

In the new normal era after COVID-19 Pandemic, many tourist attractions are being restored. There is no exception to the Borobudur Temple and the surrounding area. Thus, we aim to restore the tourism activities in Giripurno Village. Our objectives were realized by developing Winong Spring as a new tourist attraction in Giripurno Village. The Winong Spring is one of the large springs that become the icon of Giripurno Village. Developing Winong Spring as a new tourist attraction in Giripurno not only revives tourism activities in Giripurno but also becomes a unique tourism icon as part of the Borobudur KSPN.

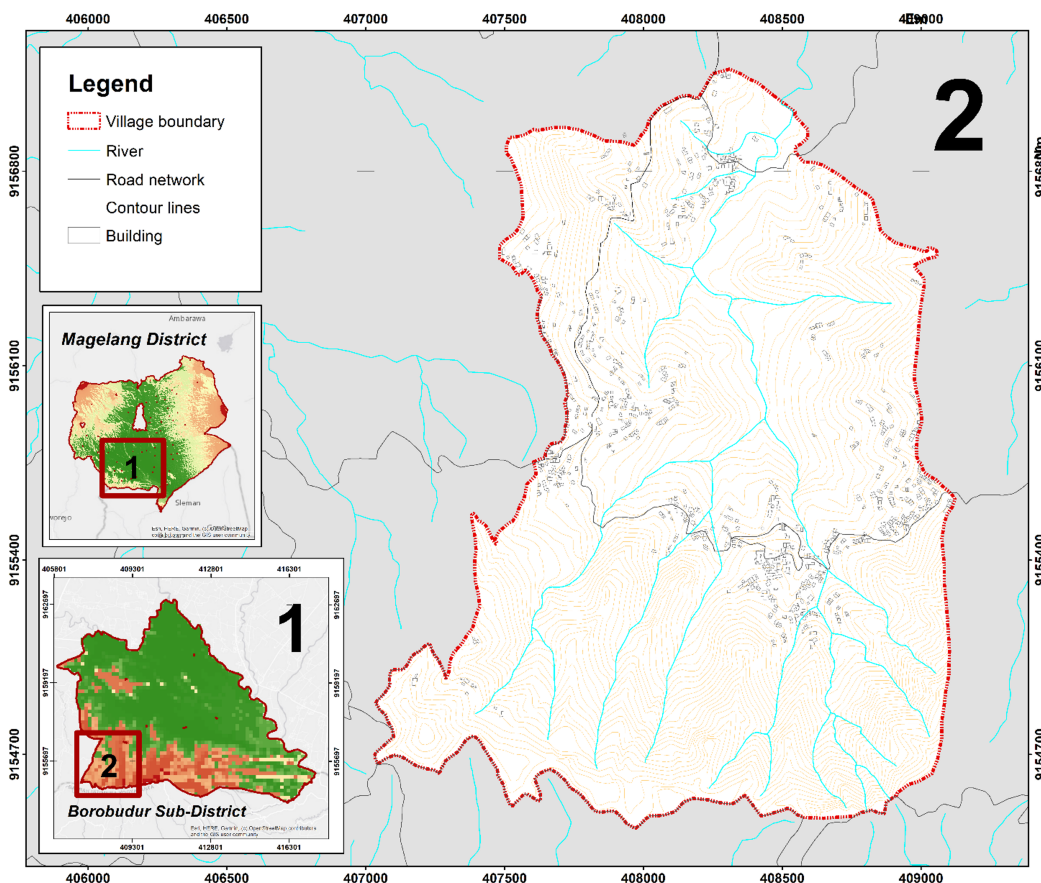


Figure 1 . Location of Giripurno Village

2. METHOD

Developing the Winong Spring area for water management activities and a tourist area was the primary goal of

research and community service activities in Giripurno Village. Apart from springs, in the Winong area, there is also a stream and a former fishpond. The main challenge of this research and community service program was the

Winong Spring area which needed to be more organized and addressed. The process of developing the Winong area was carried out in three main stages, namely (1) Pre-development, (2) development, and (3) Post Development **Figure 2**.

The first phase was Pre-Development. This phase was the stage of planning activities and designing the management of the Winong spring area. This phase included a preliminary survey, community discussions, aerial mapping, and master plan development. A preliminary survey was conducted to understand the Winong spring area overall. We conducted a focus group discussion to convey our purposes and collect aspirations. The participant of the focus group discussion are the head of the village, leader of Miriombo Kulon Sub-village, leaders of neighborhoods in Miriombo-Kulon Sub-Village and several community leaders. We chose the participant based on purposive sampling technique a non-probability sampling that relies to the researcher's judgement (Cresswell, 2014).

An aerial photograph was then obtained to create a map necessary during the site design process. The last step in the

pre-development phase was designing the tourist attraction site of Winong Spring. The result of focus group discussion and our interpretation of the aerial photograph were the most crucial part in designing the tourist attraction site.

The second phase of this program was the development process or Development Phase. The execution of the plans prepared in the first phase was in this phase. Next, the construction phase included clearing the area, procuring tools and materials, to the construction itself. The final phase was information dissemination and evaluation after completing the construction and arrangement. This phase assessed performance and determined the wider community's response to this program.

Crucial and relatively new concepts and executions were in the second phase, namely the development phase. This program carried the concept of productive conservation in water management. The concept of effective conservation prioritizes applying ecological conservation techniques while still producing sustainable economic value. Apart from the concept aspect, the development of the Winong spring area also utilized new materials that are

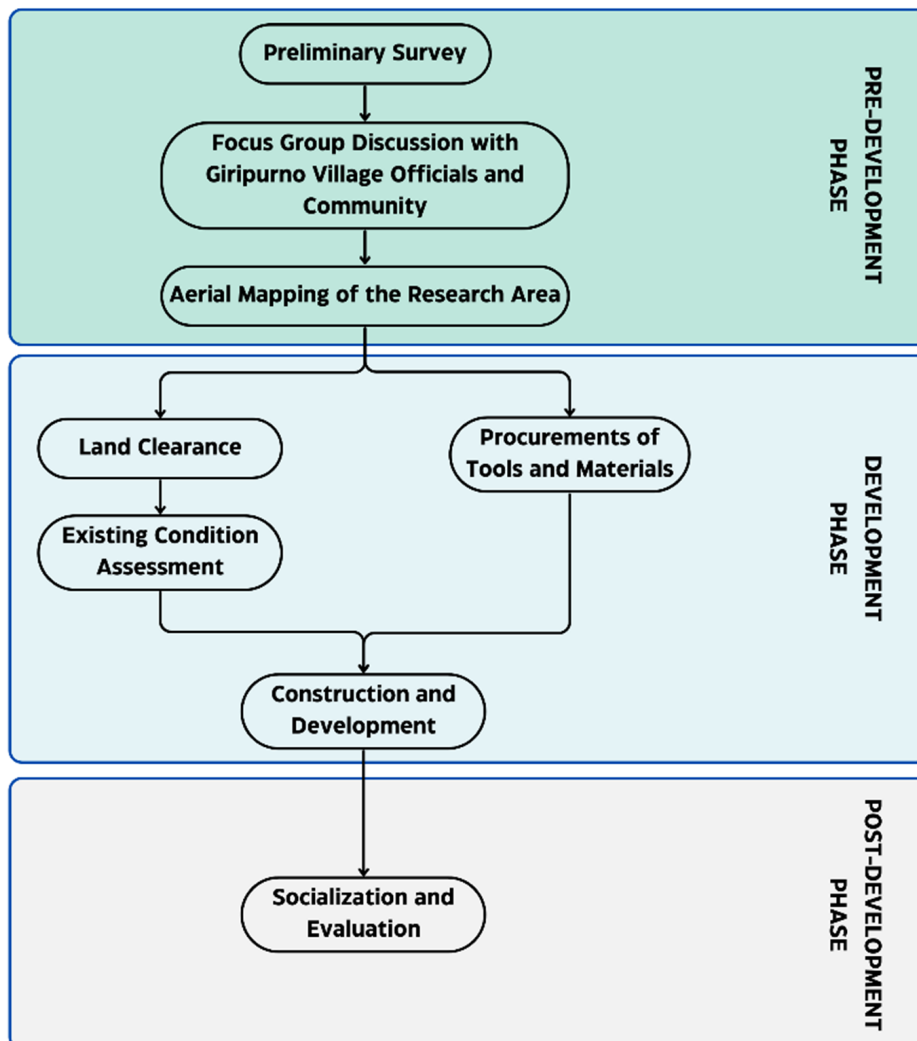


Figure 2 . Flowchart of the process of developing the Winong Spring area

appropriate and affordable for the community. Several materials are used, including gabion wire, AW-type pipe (thick), and geomembrane. These materials were relatively new to the Giripurno village community and highly resistant even in extreme conditions.

The development of the Winong Spring area actively involved the community—community involvement in this program with the contribution of space, ideas, and energy. Based on the flowchart, this program was organized through nine main activities for developing the Winong spring area **Figure 2**. The blue boxes present activities, a total of 6 activities, that involved the community. The main goal of community involvement was to understand these activities from initial planning to utilization. In addition,

the community could replicate and apply the management concept of the Winong Spring area to other potential areas.

3. RESULT AND DISCUSSION

Our project in empowering the community of Giripurno Village is a multifaceted process that lies at fostering sustainable development and social progress. Our aims are not only to enhance the well-being of the community but also fosters a sense of ownership and responsibility. Thus, in this Result and Discussion section, we explained our project based on the activity we conducted in Giripurno, the community involvement, and the sustainability and prospect of our project.

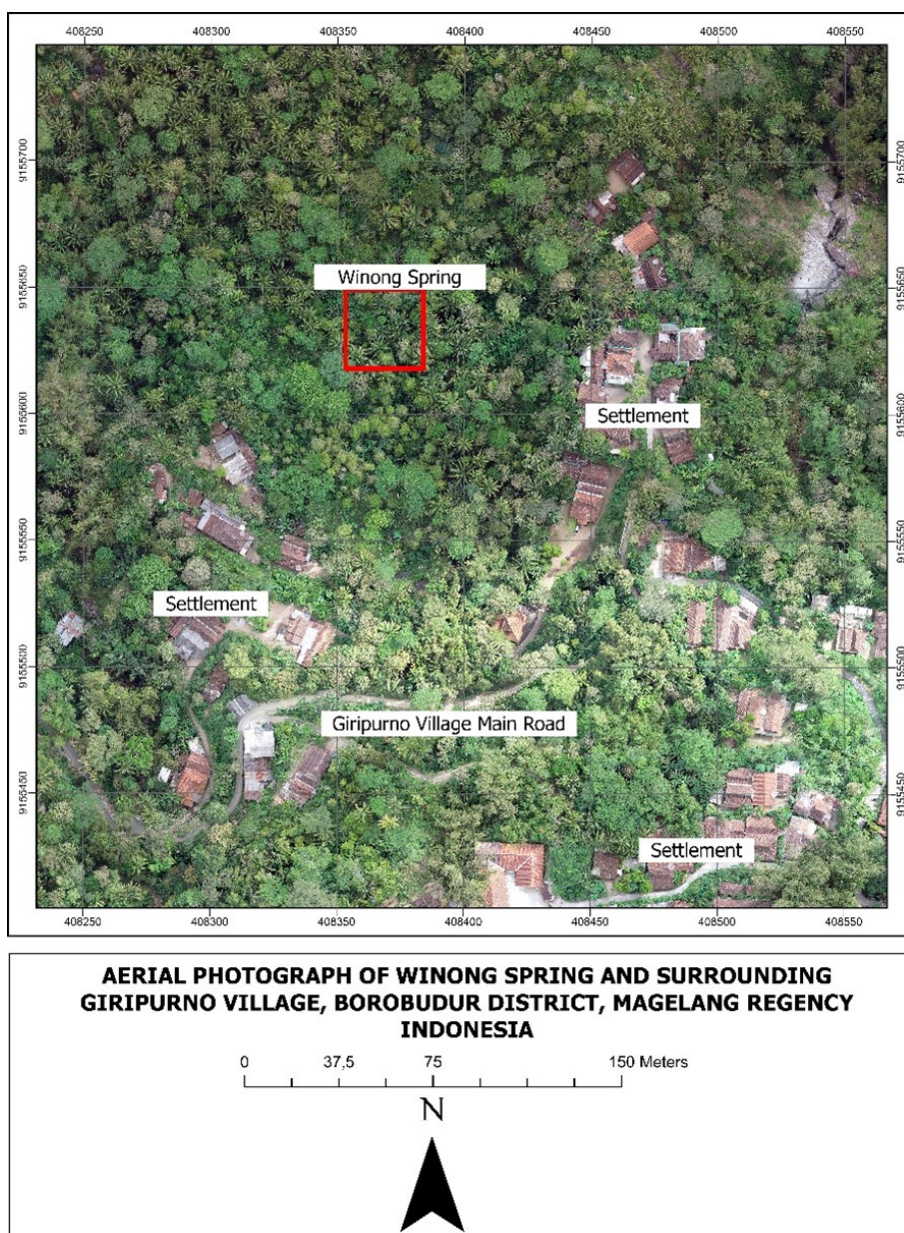


Figure 3 . An aerial photograph of the Winong Spring area and the surroundings. As can be observed from the aerial photo, the Winong Spring is located near the settlement and main road but is also still covered by dense vegetation.

3.1 Development of Winong Spring

The potential location for ecotourism development in the Giripurno Village area is the Winong Spring. Several factors were considered in choosing the Winong Spring as the location for the new tourism project with a water conservation theme: availability of water, water demand and consumption, the density of vegetation, and accessibility. Winong Spring has more water availability than other springs in Giripurno Village. In addition, Winong Spring is the main water supply for the community in Miriombo Kulon and Miriombo Wetan Sub-Village. Developing a conservation-based tourist attraction in Winong Spring will create a new economic generator and secure the water resource for areas in need. Dense vegetation around the spring **Figure 3** will provide natural water filtration, maintain soil moisture, promote groundwater recharge, and prevent erosion. Furthermore, Winong Spring's proximity to the settlement area and the main road **Figure 3** will ensure the economic viability of the tourist attraction development.

The use of the Winong spring area for tourism activities is carried out by carrying out the concept of spring conservation. This concept is embodied in two activities in Winong: the construction of long storage to prevent riverbank erosion and the use of fishponds as water retention ponds (**Figure 4** and **Figure 5**). Making these two attractions has the benefit of adding ecotourism concepts and educational content for tourism activities in Giripurno Village.

The community welcomes the planned development of the Winong Spring area for tourism activities. It can be seen from the active involvement and participation of the residents (Sub-section 3.2, **Figure 6**). The community feels that developing the Winong Spring area will provide added value for tourism activities and education for the community. It is reflected in the statement of the village leader below

"I agree that the development of Winong can be a new potential for our tourism. Moreover, the community has received training in hospitality and product development. We already have Puncak Ketepeng and Curug Watuploso, but Winong is the only one with an educational concept." (Male, Village Leader).

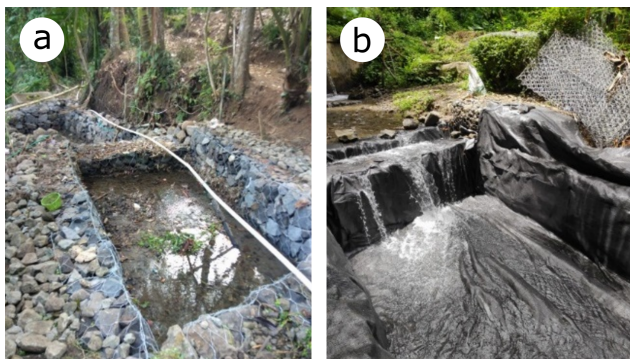


Figure 4. (a) Using gabion wire to strengthen the riverbank; (b) Use of Geotextile to protect the gabion and basement from vertical erosion.

The construction of extended storage and a water stopper is a new concept in Giripurno Village, even in the Borobudur KSPN. According to the community, the development in Winong will provide added value to the village of Giripurno in the eyes of tourists. In addition, with development based on water conservation, the benefits of springs for the community are guaranteed sustainably.

The community carries out the development of the Winong Spring area with supervision by the research team. The arrangement and development of the area utilize gabion wire and geotextile to strengthen riverbank structures. In addition, PVC pipes and geomembranes are used to revitalize and utilize former fishponds as water retention ponds **Figure 4**. The use of this material has several considerations, such as (1) the community can easily understand the installation, (2) accessible to the application, (3) long durability, (4) suitable for the characteristics of the region, and (5) the cost is relatively cheap.



Figure 5. Use of geomembrane for fishpond revitalization. The fishpond will have another function as a water retention pond during the extreme rain and flood on the Winong River.

Ecotourism development as community empowerment is not a new concept and has been practiced for a long time. In the 1990s, the negative impacts of mass tourism become significantly noticeable (Theng et al., 2015). Therefore, the development of community-based tourism approaches has risen to secure the role of the community by involving them in tourism-decision making, planning, and benefits. The concept of community empowerment through ecotourism development is aligned with the principles of sustainable development, local participation, and recognition of the community being the leading actor where local ownership, cultural preservation, environmental sustainability, and equitable distribution of benefits are being emphasized (Scheyvens & van der Watt, 2021). Although the concept of community empowerment through ecotourism development is not new, its application and understanding continue to evolve.

One example of evolving ecotourism for community empowerment is the ecotourism project based on nature's potential. Various kinds of ecotourism projects rely on the potential of nature that has been developed, such as wildlife safaris, hiking and trekking, water-based tourism, sustainable accommodation, etc. Water-based tourism has become popular in Indonesia due to its

abundant water resources. Among all types of water-based tourism, river tourism has become a new trend (Itsaini, 2022). One example of river tourism currently being run is Lepen Adventure in Malang, East Java. This ecotourism provides activities such as river, cave, and beach exploration. Tourists and the community also help to conserve the environment by planting mangroves on the coast and along the rivers (Nazarullail et al., 2017). The abovementioned project utilized mangrove planting as its flagship ecosystem benefit; our project emphasizes erosion pathway engineering and spring protection to ensure sustainable water supply and landslide protection.

3.2 Community involvement

The development of the Winong Spring area for the benefit of water management and tourism actively involves the community. This program has a design so that the Winong Spring area can benefit the lives of the Giripurno village community both socially and economically. Apart from Winong, there are many potential ways to carry out similar activities. Given this, the Winong Spring program also educates the public to replicate the concept in the Winong Spring in other locations.



Figure 6 . Community involvement during the development of the Winong Spring area

The community is actively involved in developing and constructing the Winong spring area Figure 6. Active community involvement can be seen from the planning and utilization stages. Community involvement can be seen from the initial discussion process on the development plan. At that time, the community wanted to take advantage of the Winong area for broad interests. Even the community's initiation of activities has been carried out independently, even though it failed. This community service program's existence has sparked the Giripurno village community's enthusiasm to develop their territory, especially the Winong spring, for the greater good.

Enthusiasm for the Winong Spring area development program is also reflected in the development process. The development process is carried out with the cooperation of the community members. The community is actively involved in the development stage by joining the construction process voluntarily Figure 6. Cooperation activities are carried out in rotation at each neighborhood (RT) daily. The existence of this cooperation activity itself is one of the noble traditional values that need to be preserved.

Together with the community members, the construction of the Winong spring area can be completed within three months.

Community participation in the empowerment project is crucial since it reflects the community's ownership and responsibility, provides local knowledge and expertise, enhances effectiveness, strengthens social capital, and guarantees sustainable development. The Giripurno community's active participation in developing the Winong Spring provides a strong foundation for the continuity of the prospective tourist attractions. Compared to other areas, such as the Wonolelo Resort, Mount Merbabu, where the community still needs more capacity, knowledge, and experience to develop ecotourism (Rusiani, 2018), the active participation of Giripurno Village in the initial development of the ecotourism project can be an excellent example for similar projects elsewhere. However, the active involvement of communities in the downstream process of ecotourism projects still needs to be monitored. The Giripurno community is expected to be engaged in downstream tourism activities as is currently happening in Goa Janji, Mallari Village, Bone, South Sulawesi, where the community plays an active role in food processing training and t-shirt printing as tourism merchandise, as well as language training as a supporting feature to improve the quality of tourism objects (Aziz et al., 2020).

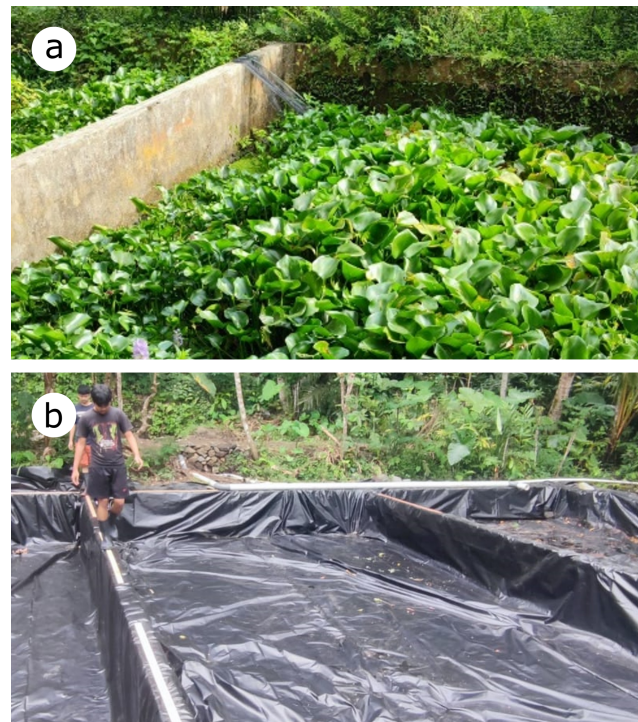


Figure 7 . Conditions of the fishpond near Winong Spring (a) before the restoration; (b) after the restoration

3.3 Sustainability and prospect

After completing the development program, the Winong spring area is transformed into a multi-function and essential area. Previously, community members only used the Winong spring area to fulfill domestic needs and latrines. The Winong spring area is ready to become a top tourist

product or location for Giripurno village. However, several things need to be considered so that the management of the Winong area can be successful and provide significant benefits.

The Winong area now has new economic potential, namely river tourism and fish farming. River tourism is currently a type of tourism that is quite a trend among Indonesian people (Itsnaini, 2022). Many enjoy this type of river tourism to heal from the hustle and bustle of urban life. Conditions that are still beautiful and good water quality are the selling points of the Winong Spring area for tourists. In addition, the existence of an integrated water management system also provides additional content, namely education. These two things will provide a broader market for tourism activities in Giripurno Village.

Another aspect that must receive attention is the selection of fishery commodities. Aquaculture activities will be carried out in restored fishponds using geomembrane materials Figure 7. The importance of choosing the right commodity is based on the failure experience of previous fish farming. In addition, selecting the right commodity can provide added value in terms of tourism and economic potential. Based on the local's experiences and experts' recommendations, the potential commodity is tilapia.

"In our experience, tilapia and pomfret was the best fish to raise here. These fish grow fast. It is different with catfish. We used to raise catfish, but the fish grow very slowly." (Male, Village Leader)

In the cold climate of Giripurno, catfish are difficult to grow. Tilapia or pomfret are suitable. However, pomfret has little economic value." (Male, Aquaculture Expert)

To support the sustainability issue, it is necessary to have a transparent management scheme for the Winong area. This management scheme is essential to avoid conflicts of interest in the future. Things that need to be adequately managed are fees, parking tickets, merchant fees, and bookkeeping of tourism and fishery products. Balkondes and their administrators that have been established can play a role in the financial and administrative management of the prospective new tourist attraction. The Tourism Awareness Group (Kelompok Sadar Wisata/Pokdarwis) can help manage the technical operations of the forthcoming tourist attraction. The community of Giripurno can become active actors in the prospective tourist attraction and cooperate with the Village Government in providing parking lots. Finally, farmer groups in the village produce Giripurno's original products to be marketed as souvenirs. With good management, the benefits of the Winong area will be maximized and comprehensive.

4. CONCLUSION

The development of the Winong spring area is one of the efforts to revive tourism activities in Giripurno Village. Tourism development based on water conservation to increase the selling value of tourism activities in Giripurno Village. The community welcomed and enthusiastically

developed the Winong area development program. This good reception was manifested by the community's desire to participate in development activities from the planning stage to implementation and outreach. Overall, all structuring activities were successfully carried out with the community. The construction of long storage and water retention ponds indicates this. These two objects can benefit the community from a social perspective by providing clean water during the dry season and economically. However, other programs must be made in the future, such as increasing tourism management capacity and improving fish farming capabilities.

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CONFLICT OF INTERESTS

The authors declares there is no conflict of interest.

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