

# Pro-Climate Tourism Development Plan and Institutional Strengthening in The Coastal Area of Poncosari Village

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## ABSTRACT

The construction of Yogyakarta International Airport (YIA) and the Southern Cross Road can potentially improve the community's economy through tourism activities. On the other hand, it caused uncontrolled development on the south coast of Yogyakarta. Increased tourism activities in the form of tourism-supporting facilities, such as hotels, restaurants, and other land conversions, can potentially impact environmental degradation. This degradation is reflected mainly in the form of rising temperatures and problems with water resources. This activity is one form of effort to develop the tourism sector in the Poncosari village as well as coastal conservation. The main focus of this activity is spatial planning of coastal tourism in the coastal village of Poncosari, which is oriented towards pro-climate tourism and strengthening of pro-climate institutions at the village level in supporting the coastal tourism sector of Poncosari village. The activity resulted in coastal spatial zoning facilitating several functions, including family tourism zones, cruising tours, camping tours, support zones, and protected zones. Family tourism zones are focused on border tourism, while cruise tours cover a broader and longer area consisting of various tourist attractions accompanied by bicycle and electric scooter routes. The campsite tourism zone is focused on areas that are more protruding inland so that they are protected from strong winds and accompanied by camping support facilities. The supporting zone is focused on culinary tourism and displaying MSME products in Poncosari Village. Meanwhile, the protected zone is focused on environmental conservation, especially turtles. The village government also supported the development of coastal tourism in Poncosari Village through a tourism awareness group (Pokdarwis) at the village level.

**Keywords:** Coastal ecotourism, Pro-climate village, Tourism zonation area.

## 1 Introduction

Climate change has become one of the most serious global problems. This is evident from the universal acceptance of the results of the UN Framework Convention on Climate Change (UNFCCC) at the Earth Summit on environment and development (UN Conference on Environment and Development, UNCED) in Rio de Janeiro, Brazil, in 1992 [1]. In 2015, the Conference of Parties (COP) 21 resulted in the Paris Agreement, which has also become the foundation and milestones for mitigation and adaptation performance [2]. The Paris Agreement also gives a new paradigm for global action on climate change which is referred to by many countries. At present, it becomes a reference for reducing the impact of climate change to reduce the risks in multiple areas and sectors as mitigation and adaptation actions increase. In short, the Paris Agenda aims to prevent the global average temperature from rising below 1.5 °C or, at worst, 2 °C and requires fast and responsive action that can touch all elements of society [3].

Climate change has caused many negative impacts on human life, particularly water resources, food, agriculture, and human health [4]-[6]. Indonesia is one of the countries affected and significantly contributes to climate change. Indonesia is one of the largest greenhouse gas (GHG) emitters globally. This contribution was mainly due to population pressure on land and increased industrial activity. It is predicted



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that in 2035, Indonesia's population will increase by 28% or 67 million people. As a result of the increasing population, currently, the growth rate of urban areas has reached 4.4% per year, and it is predicted that 68% of Indonesia's population will live in urban areas in the next ten years. The high rate of change in land use has contributed to the deforestation rate of more than 1 million hectares per year. In addition, it contributes a significant amount of GHG emissions to the atmosphere [7, 8].

The Southeast Asian region contains 15% of the tropical rainforest area, which makes it one of the largest in the world. The rate of deforestation in this region is the largest since 1990, one of which occurred in Indonesia [7]. Indonesia stated its commitment to reducing GHG emissions, primarily by reducing the rate of deforestation, at the 21st Conference of Parties (COP) 2015. This commitment was about reducing greenhouse gas emissions by 29 percent with its efforts by 2030. As a follow-up to the ratification of the Paris Agreement through Law Number 16 of 2016 and the submission of Indonesia's Nationally Determined Contributions (NDC) to the UNFCCC, nationally, the target for reducing emissions in 2030 based on the NDC is 834 million tons of CO<sub>2</sub>e on the unconditional target and 1.081 million tons of CO<sub>2</sub>e on the conditional target.

There have been many concrete actions to improve the quality of the environment, which have contributed to reducing greenhouse gas emissions in Indonesia. The actions that the community has successfully carried out can become a form of "best practices" that can be replicated and duplicated in other regions so that the GHG emission reduction target of 29% can be achieved in 2030 [9]. In 2016, the Indonesian Ministry of Environment and Forestry (KLHK) produced a regulation related to community-based climate change mitigation and adaptation, known as the Pro-Climate Village Program (ProKlim) [10]. One example of ProKlim's activities is Pro-Climate Tourism [11]. This is a climate change mitigation and adaptation practice and environmental conservation carried out by the local community through sustainable tourism activities concerned with climate change-related issues.

In Yogyakarta-Indonesia, the construction of Yogyakarta International Airport (YIA) and the Southern Cross Road has significantly impacted the local community. It supports regional development and the economy. But, on the other hand, it potentially causes unsustainable development. The development of airport-supporting facilities such as hotels, restaurants, and land conversions can change the natural environmental landscape. Protection of the natural environment is essential but often ignored due to increasing the land's economic value. A Pro-Climate tourism village was introduced to promote conservation and improve local economic activity [10]. The aim is focused on developing the tourism sector in Poncosari village and coastal conservation. The focus of this activity is to 1) develop spatial planning of coastal tourism in the coastal village of Poncosari, which is oriented towards pro-climate tourism, and 2) strengthen pro-climate institutions at the village level in supporting the coastal tourism sector of Poncosari village.

## **2 Methodology**

This project includes several activities related to tourism development based on ProKlim on the coast of Poncosari Village, especially Cangkring Beach. Cangkring Beach is located on Java Island's southern shore, which has highly extreme conditions, with plant species that can adapt severely limited by environmental variables such as poor nutrients, strong winds, and excessive salt and warmth. One of the plants that can live is Sea Pine. Sea Pine plants on Cangkring beach have grown prolifically and can produce a canopy of vegetation around the beach. Sea Pine plants can also reduce the abrasion rate, which has the potential to increase due to climate change and sea level rise. In addition, winds that blow too hard cause the land to become critical and potentially dangerous for the area behind it. This critical land was formed due to strong

sea breezes, so it could not be used as a planting area. Sea Pine plants at Cangkring Beach are helpful as a windbreaker that will deflect the wind, and the airflow will be suppressed.

The design of activities has two benefits at once. The first benefit is the existence of tourism practices based on environmental conservation activities in the form of sea pine plants. Sea pine plants also play a role in preventing abrasion, which has the potential to increase due to climate change. The second benefit of developing the tourism sector at Cangkring Beach is the emergence of activities that have the economic potential to improve the welfare of the surrounding community. Related to the development of Cangkring tourism, institutional strengthening at the village level, especially village-owned companies, is very important to achieve this goal.

This activity consists of several Focus Group Discussion (FGD) activities and field surveys conducted in Poncosari Village throughout 2022. The FGD activities are aimed at encouraging the initiation of government agencies to carry out ProKlim practices based on environmental conservation, especially those related to the institutional structure of ProKlim and the programs. In this case, it is mainly related to the role of village-owned enterprises (BUMDes/BUMKel) and Tourism Awareness Groups (Pokdarwis), which have the potential to develop ProKlim-based tourism. In addition, this activity also includes the preparation of the Cangkring Beach tourism development master plan: Cangkring Beach has the potential to be developed due to its strategic location, especially with the development of NYIA Airport, the southern route, and the unspoiled environment. In addition to the increase in visitors yearly, many parties want to invest in Cangkring Beach, including hotels and inns.

Institutional strengthening related to ProKlim-based tourism in Poncosari Village was carried out using the Focus Group Discussion (FGD) method between policy stakeholders at the village level. The FGD was conducted at the Poncosari Village Hall, Tuesday, 23 August 2022. Some of the questions asked during the FGD covered the following topics: 1) What are the most critical issues currently to be addressed with the development of pro-climate tourism in Poncosari village; 2) How is the spatial arrangement of beach tourism at this time; 3) What is the role of policymakers and who plays an essential role in the future development of coastal tourism; and 4) What is the recommended pro-climate tourism management institutional structure going forward.

## **2.1 Pro-Climate coastal tourism masterplan in Poncosari Village**

The Cangkring Beach tourism zoning master plan is carried out using a survey method. These activities resulted in the zoning of coastal tourism areas to increase the potential for coastal tourism and support sustainable ProKlim-based tourism. The zoning results shown in Figure 1 include the following:

The Central Zone is the area of entry and exit of the beach. This zone is focused on a node consisting of several activities, including culinary tourism and MSMEs.

The natural zone is a zone that is focused on tourism for camping/tents or hammocks. This is based on carrying capacity, especially groundwater availability and protection from extreme weather.

The beach recreation zone is a beachfront tourism zone, especially for family tourism which is supported by a shady atmosphere with a canopy of cypress shrimp on the shoreline.

The Roaming zone, a coastal exploration zone with various tourist objects/appearances, supported by bicycle and electric scooter paths.

Conservation zone, intended for the protection of the unspoiled environment, especially for the protection of hatchlings, conservation of Sea Pines, and protection of other biotas. The focus of the development of the zoning plan is on the coastal roaming zone, which is currently completely unexplored. Based on field surveys, various kinds of interesting coastal features can be found along the home range corridor as shown in Figure 2.



The results of the roaming zone survey resulted in a route mapping of approximately 1.2 km, composed of 2 segments. The first segment is a tracking route that has the potential to be worked out in the short



**Figure 3:** Cangkring Beach tourism zoning master plan (Source: Analysis result, 2022)

term because it has been equipped with an asphalt road. The segment begins with a long corridor with a canopy of Sea pines and ends with a headland view. The length of this segment is about 600 meters. Meanwhile, the second segment needs long-term development, including paving roads with about 550 meters and additional facilities. The second segment of the corridor starts from the headland view and is followed by a side view of the road along the coast.



**Figure 4:** Cangkring Beach roaming zone development plan (Source: Analysis result, 2022)

Another focus of developing this location master plan is a stop site for bicycles and electric scooters. The survey was conducted to find the best photo spots and stop sites for cyclists/scooters on Cangkring Beach. The selection of scooter/bike routes is based on attractive appearances and good road conditions for the convenience of visitors. The appropriate road route (asphalt) length is 850 meters long, which crosses Cangkring Beach to Cemara Udang Beach. Visitors using bicycles and scooters can see views of melon

gardens, ponds, photo spots, and stalls. Some geographical features that can become a stop site tourist attraction at Cangkring Beach are as follows:

- Fruit picking tourism: melon, etc., close to the track and can be designed in collaboration with local farmers.
- Sunrise and sunset viewing spot: beautiful locations close to the beach for viewing the sunset. Several facilities are already available, such as bathrooms, hammocks, swings, and seats.
- Education coastal spots: The high abrasion at Poncosari Village Beach causes the soil layer to shift more and impacts the Sea Pine on the beach. The slanted prawn pine is an interesting spot to take pictures and learn about the abrasion process.
- The Sea Pine tunnel: interesting photos under the Sea Pine canopy that forms like a tunnel. Photos can be taken on the way to the tunnel, inside the tunnel, and after passing through the tunnel on the beach.

## 2.2 Strengthening of pro-climate institutions at the village level

Institutional strengthening related to the Pro-climate tourism village was done using the Focus Group Discussion (FGD) that is shown in Figure 3 and Figure 4. This FGD produced several inputs for the future development and plan, as follows: 1) The main problem in the Pro-climate tourism village is the limited human resources in the construction or development of Poncosari Village in tourism activities. 2) The southern part of the Poncosari sub-district area still has a lot of potentials that have not been explored, particularly related to tourism object and activities. So, the community hopes to make a tourism master plan that can be realized soon; 3. The community suggests the urgency of the need for *pokdarwis* (Tourism Awareness Group) at the village level (a combination of local pokdarwis in each hamlet) to facilitate the development of a more structured tourist village. The formation of *Pokdarwis* at the village level is essential for tourism village branding, so it needs to be done immediately because tourism village management requires shared responsibility.



**Figure 5:** FGD activities on 23 August 2022, related to Institutional Strengthening of pro-climate-based beach tourism in Poncosari Village.





**Figure 6:** Participant spoke his opinion regarding strengthening ProKlim-based tourism institutions by forming village-level tourism awareness groups (Pokdarwis) for Poncosari tourism village branding during the FGD

### 3 Conclusions

Global environmental problems that need attention in this era are reflected in the Sustainable Development Goals (SDGs), which include: 1) Access to clean water and sanitation, 2) Clean and affordable energy, 3) Sustainable economic development, 4) Cities and communities which are environmentally sound, 5) Climate change countermeasures, and 6) Sustainable management of the marine and terrestrial environment. All these problems are interrelated and require comprehensive and innovative solutions. This study provides examples of solutions and best practices on how environmental conservation efforts as a form of climate change mitigation and adaptation can be aligned with improving the community's economy through pro-climate tourism activities. The result of this activity is expected to be packaged into a "made in Indonesia" role model in the context of climate change mitigation and adaptation.

Indonesia's commitment to actively tackling climate change is also demonstrated by being a member of the G-20 since this inter-governmental forum was formed in 1999. In 2022, Indonesia will be chairman of the G20 with the theme: global health, digital transformation, and energy transition. Two of these three themes are closely related to efforts to deal with climate change. First, the acceleration of digital transformation is related to efforts to minimize deforestation emissions and land degradation. In contrast, the energy transition is related to transferring fossil fuels to fuels produced from renewable energy. In addition to global efforts, Indonesia is increasing its efforts to deal with climate on a local scale equivalent to the smallest administrative unit, including villages and sub-villages, to even broader administrative boundaries. The above example could become an innovation as a national movement for community-based climate change mitigation and adaptation, which is one of the government's strategic steps to highlight the global issue of climate change. Thus, replication, modification, and importation of examples of this activity can spread at the national level, considering the geographical characteristics of each region.

### 4 Declarations

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