Development of Community-Based Ecotourism in Ngargoyoso District, Karanganyar Regency, Central Java Province

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Abstract. This research was aimed to (1) identify tourism objects in Ngargoyoso District, Karanganyar Regency and (2) analyse tourism readiness in Ngargoyoso District to be developed into community-based ecotourism. Data was collected through observing the environmental conditions, determining tourism objects locations through GPS, and interviewing managers, communities and tourists. The development of Community Based Ecosystem readiness evaluation follows CBE which was developed by WTO and INDECON with regard to four aspects namely socio-economic, socio-cultural, environmental and management aspects. The results showed that: (1) in Ngargoyoso Sub district there were 19 tourism objects, consists of 2 cultural tourism objects, 5 original natural objects and 12 artificial natural objects; (2) The results of the CBE readiness evaluation of Ngargoyoso Sub district were, 5 tourism objects were in very good categories, 12 objects were in good category, one tourism object was in medium category and one tourist object was in very bad category.

1. Introduction
Tourism is the main sector that contributes to sustainable growth in all countries. Tourism development can ideally improve community welfare and environmental sustainability in the region. 'Economic growth', 'community welfare' and 'environment' are three factors that make regional socio-economic systems sustainable [1]. The most important benefits of tourism activities are economic development through foreign money, tax revenues, foreign direct investment and new jobs for local residents [2][3].

The growing popularity of ecotourism activities and important contributions given to conserve the activities encourage the United Nations through the world living environment program namely the United Nations Environment Program (UNEP) to point out 2002 as the International Year of Ecotourism. The goal is to promote ecotourism on an international scale and provide learning opportunities for countries that have the potential to develop ecotourism in their region from countries that have successfully carried out ecotourism. Ecotourism, one of the alternative forms of tourism, was introduced in the 1960s and has been widely discussed, together with the concept of sustainable tourism since the 1980s [4][5]. Ecotourism is typically defined as travel to destinations where the flora, fauna and cultural heritage are the primary attractions[6] Ecotourism development must follow the principles of ecotourism, and the principle of ecotourism according to UNEP (2002) is: (a) minimize the negative impact on nature and culture that can damage a destination, (b)Educate the
traveller on the importance of conservation, (c) stress the importance of responsible business, which works cooperatively with local authorities and people to meet local and deliver conservation benefits, (d) direct revenues to the conservation and management of natural and protected areas, (e) emphasizes the need for regional tourism zoning and for visitor management plans designed for either regions or natural areas that are slated to become eco-destinations, (f) emphasizes use of environmental and social base-line studies, as well as long-term monitoring programs, to assess and minimize impacts, (g) strive to maximize economic benefit for the host country, local business and communities, particularly peoples living in and adjacent to natural and protected areas, (h) seek to ensure that tourism development limits of acceptable change as determined by researchers in cooperation with local residents, (i) Rely on infrastructure that has been developed in harmony with the environment, minimizing use of fossil fuels, conserving local plants and wildlife, and blending with the natural and cultural environment [7].

Community involvement will be important in the development of ecotourism, because they know exactly what problems exist in their area and their solution. It is generally assumed that local communities must be included in the planning and implementation of tourism because tourism activities must contribute to their welfare[8]. Community-based ecotourism involves local communities as promoters in development management and to take benefits from tourism activities in their area. Some basic requirements in community-based ecotourism development are[9].

There are plants or flora-fauna that are considered attractive for special visitors or for more general visitors:

a. The ecosystem can still accept a certain number of visitors without causing damage
b. Local residents are aware of potential opportunities, risks and changes that will occur and have an interest in receiving visitors
c. The existence of an organizational structure for effective decision making,
d. The absence of threats that are obvious and cannot be avoided or prevented against local culture and traditions
e. Early market assessments indicate potential demand for ecotourism and there are effective ways to access the market. In addition, it must also be known that the potential market does not receive too many ecotourism offers

Ngargoyoso District is located on the western slope of Mount Lawu, with an average altitude of 721 m from the sea level and an average temperature of around 20°C with natural views of Mount Lawu to the east and Surakarta city to the west is a very interesting tourism area to visit. In Ngargoyoso District there are several tourism objects consisting of old tourism objects and new tourism objects that have sprung up in recent years. Tourism object in Ngargoyoso District have a high attraction for tourist to visit because of the supporting nature that is located in rural mountainous areas with beautiful scenery.

However, the management of the area is still traditional and local. This research is to find out the tourism potential in Ngargoyoso District and provide direction on the development of Community Based Ecotourism (CBE) in this area. Rural tourism development is driven by three factors; first, rural areas have natural and cultural potential that are relatively more authentic than urban areas, and rural communities still carry out harmonious cultural and ritual traditions, second, rural areas have a relatively original physical environment or are not polluted by various types of pollution compared to urban areas, third, certain rural areas faces relatively slow economic development, so that the optimal utilization of the economic, social and cultural potential of local communities is a rational reason for the development of rural tourism1.

2. Method

Ngargoyoso Subdistrict, Karanganyar Regency was chosen as the location of the study because there are 7 natural and cultural tourism objects that have long been present and emerging new tourism objects which are managed and developed by the local community. Data was collected through: (1) checking the field using GPS to find the location of each tourist attraction, (2) interviewing government, tourism managers, local communities and tourists to find out the potential of community-
based ecotourism development, and (3) direct observation to find out the condition of the ecosystem in each tourist attraction.

Data analysis was done as follows:

a. Based on the results of GPS checking on the location of each tourist attraction the distribution of tourism objects in the research area was mapped

b. Based on the results of field observations and interviews with the government, tourism object managers, local communities and tourists, it can be analyzed the potential of community-based ecotourism development.

The readiness assessment of the Community Based Ecotourism development follows CBE which was developed by WTO (2004) [10] and INDECON (2008) [11] with regard to four aspects namely socio-economic, socio-cultural, environmental, and management aspects. All aspects are specified into more specific criteria and indicators. Each indicator has a score distribution. The higher the score obtained, the higher the level of readiness to be developed into community-based ecotourism.

3. Result and Discussion

3.1 Tourism Object Distribution in Ngargoyoso District, Karanganyar Regency

Based on data from the Karanganyar Regency Tourism Office and field observations, in Ngargoyoso District there are 19 tourism objects, consisting of 2 cultural tourism, 5 original natural objects and 12 artificial natural objects. Two cultural tourism objects are in the form of Sukuh temple and Planggatan site, natural attractions are in the form of tourist forests, waterfalls and lakes. This is in accordance with the concept of ecotourism, there are makes optimal use of environmental resources, maintaining ecological processes, helping to conserve natural heritage, biodiversity and respect the socio-cultural authenticity of host community [12]. While artificial tourism objects are in the form of tourism objects developed by the community both groups and individuals, such as agrotourism, selfie photo spots, paragliding areas. Artificial tourism objects in the research area remain nature-based such as photo spots in the middle of the tea garden, along the river, in the valley, and so on. These tourism objects are only spread in four villages, namely Berjo, Girimulyo, Segorogunung and Kemuning. The main factor in collecting artificial tourism objects is accessibility which makes residents develop artificial tourism objects near the main road in the Ngargoyoso District.

| No | Tourism Object         | Village  | Type       |
|----|------------------------|----------|------------|
| 1  | Sukuh Temple           | Berjo    | Cultural   |
| 2  | Tahura                 | Berjo    | Natural    |
| 3  | Jumog Waterfall        | Berjo    | Natural    |
| 4  | Merdada Lake           | Berjo    | Natural    |
| 5  | Planggatan Site        | Berjo    | Cultural   |
| 6  | Parangijo Waterfall    | Girimulyo| Natural    |
| 7  | Paragliding            | Segorogunung | Artificial |
| 8  | Kemuning Hill          | Kemuning | Artificial |
| 9  | Karesnan Valley        | Kemuning | Artificial |
| 10 | Sumilir Valley         | Kemuning | Artificial |
| 11 | Tanggul Asri           | Kemuning | Artificial |
| 12 | Pucung River           | Kemuning | Artificial |
| 13 | Pesona Garden          | Kemuning | Artificial |
| 14 | Jambu Merah “234”      | Kemuning | Artificial |
| 15 | Bintang Garden         | Kemuning | Artificial |
| 16 | Sebendo River          | Kemuning | Artificial |
| 17 | Kalimas                | Kemuning | Artificial |
| 18 | Jurang Salam           | Kemuning | Artificial |
| 19 | Tubing Goa Sari        | Kemuning | Artificial |

Source: Karanganyar Regency Tourism Office and Field Observation
From these data it turns out that tourism objects in the Ngargoyoso District are only spread in four villages, namely Berjo, Segorogunung, Puntukrejo and Kemuning. The map of the Tourism Objects distribution in Ngargoyoso District can be seen in the following map.

![Map of Tourism Types in Ngargoyoso District](image_url)

**Figure 1.** Maps of Tourism Types in Ngargoyoso District, Karanganyar Regency

![Tourism Sites](image_url)

**Figure 2.** (a) Sukuh Temple, (b) Jumog Waterfall, (c) Katresnan Valley

### 3.2 Community-Based Ecotourism Development Potentials

Community Based Ecotourism (CBE) is a concept of ecotourism development by involving and placing local communities who have full control in management and development so as to contribute to the community in the form of improving local community welfare and sustainability of local culture[13]. CBE also appears in accordance with the concept of community control and participation in tourism development [14]. CBE readiness assessment is divided into four aspects of assessment, namely socio-economic aspect, socio-cultural aspect, environmental aspect, and management aspect. The results of the CBE readiness assessment of Ngargoyoso District are, 5 tourism objects are in very good categories, 12 tourism objects are in good category, one tourism object is in medium category and one tourism object is in bad category. The results of the CBE readiness assessment can be seen in the following table 2:
Table 2. CBE Development Readiness Assessment based on 4 CBE Aspects Analysis

| No | Tourism Object     | Score  | Category    | Class |
|----|--------------------|--------|-------------|-------|
| 1  | Sukuh Tample       | 2.040  | Very Good   | 5     |
| 2  | Tahura             | 1.920  | Very Good   | 5     |
| 3  | Jumog Waterfall    | 1.920  | Very Good   | 5     |
| 4  | Merdada Lake       | 1.980  | Very Good   | 5     |
| 5  | Planggatan Site    | 1.350  | Bad         | 1     |
| 6  | Parangijo Waterfall| 1.920  | Very Good   | 5     |
| 7  | Paragliding        | 1.530  | Medium      | 3     |
| 8  | Kemuning Hill      | 1.770  | Good        | 4     |
| 9  | Katresnan Valey    | 1.710  | Good        | 4     |
| 10 | Sumilir Valey      | 1.770  | Good        | 4     |
| 11 | Tanggul Asri       | 1.770  | Good        | 4     |
| 12 | Pucung River       | 1.770  | Good        | 4     |
| 13 | Pesona Garden      | 1.770  | Good        | 4     |
| 14 | Jambu Merah “234” | 1.710. | Good        | 4     |
| 15 | Bintang Garden     | 1.770  | Good        | 4     |
| 16 | Sebendo River      | 1.770  | Good        | 4     |
| 17 | Kalimas            | 1.770  | Good        | 4     |
| 18 | Jurang Salam       | 1.710  | Good        | 4     |
| 19 | Tubing Goasari     | 1.710  | Good        | 4     |

Source: the calculation of four aspects of CBE

Table 3. CBE Development Readiness Assessment Category

| No | Interval    | Category | Class |
|----|-------------|----------|-------|
| 1  | 2.040 – 1.836| Very Good| 5     |
| 2  | 1.835 – 1.632| Good     | 4     |
| 3  | 1.631 – 1.428| Medium   | 3     |
| 4  | 1.427 – 1.224| Bad      | 2     |
| 5  | 1.223 – 1.020| Very Bad | 1     |

The positive factor in the development of community-based tourism in the research area is that people are aware of the importance of environmental preservation, because they understand the selling power of their tourism lies in natural beauty. Thus, both individually and collaboratively, they preserve the existing nature and improve damaged natural conditions. While the inhibiting factor for the development of CBE in this area is the lack of development of local cultural attractions and the lack of development of the macro economy.

4. Conclusion

From the data analysis, it could be concluded that:

a. In Ngargoyoso District there are 19 tourism objects, consisting of 2 cultural tourism objects, 5 original natural objects and 12 artificial natural objects. These tourist objects are only spread in four villages, namely Berjo, Girimulyo, Segorogunung and Kemuning.
b. The results of the CBE readiness assessment of Ngargoyoso District are, 5 tourism objects are in very good categories, 12 tourism objects are in good category, one tourism object is in medium category and one tourism object is in bad category.

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