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Email: jitode@ub.ac.id
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Perception of Tourist towards the Potential Development of Tumpa Mountain Area as Integrated Ecotourism, Manado, North Sulawesi Province

Benny Irwan Towoliu^{*}, Mita Erdiaty Takaendengan

Department of Tourism, State Polytechnic of Manado, Indonesia

Abstract

Tumpa is the name of mountain located at the northern part of the Manado City region which bordering The National Park of Bunaken. As a mountainous region with a height of ±623m (asl), it occupies a strategic position. In addition to being adjacent to the park, it is also part of uplands owned by the city of Manado. It serves as buffer zone (green belt) of water, horticultural and agricultural areas with mangrove coastal areas. Master Plan of Tourism Development Region in Manado City used as part of ecotourism products from mountain and forest, but so far there has been no in-depth study to assess the holistic perception of tourist in the development potency of the region as an integrated tourism in Tumpa Mountain area. This study was purposed to determine the tourist perception toward the potential development as integrated ecotourism. This research involved a qualitative research approach, described by using figures on the percentage. Fieldwork was used as a questionnaire survey. The analysis measurement using Likert Scale, scoring and analysis combined with the analysis of the interest rate (level of importance). This study result shows that the average respondent answered good with the score range between 3.5 until 4.2. It means the respondents have argued that every indicator; natural, social-cultural and infrastructure that exists in the region Tumpa Mount area is still in good condition. In the level of interest the respondents answered between 3.6 until 4.6 with category important. This means respondents expect that good environmental circumstances will be always maintained and linked with the development of tourist attraction which is very suitable to be developed as ecotourism. In conclusion, the indicators are considered good and important to be developed as an integrated ecotourism area.

Keywords: Ecotourism, Integrated, Perception, Tourist, Tumpa Mount.

INTRODUCTION

Ecotourism is a form of alternative tourism replacing mass tourism types that are considered to over exploit the natural environment and social culture. Ecotourism is currently developed by many countries around the world. In addition, eco-tourism is considered as a form of tourism that does not damage the ecological environment and social culture, and nature to conserve a life that degraded or threatened with extinction.

Ecotourism, in contrast to nature, requires additional requirements for nature conservation. Thus ecotourism is natural tourism with mild impact that caused to require maintenance of species and their habitats directly with its role in the preservation and or indirectly by giving a viewpoint to the local community. It was aimed to the local community to be able to put a value, and protect the nature and lives as a source of income.

Besides that, ecotourism also increase the awareness of visitor to conserve the natural

environment [1]. The International Ecotourism Society [2] defines ecotourism as responsible for travelling to nature areas that conserve the environment and improves the well-being of local people. It is also defined as traveling in charge with the conservation of the environment and the welfare of the host community.

The viewpoint on ecotourism is not just limited on visiting the nature but also responsible for the sustainability of the region [3-9]. Damanik and Weber [10] states that ecotourism perspective consists of three parts: 1. Ecotourism as a product; 2. Ecotourism as market, ecotourism development support local businesses that provide benefits to the local community [11]; and 3. Ecotourism acts as development approach. Furthermore Damanik and Weber [10] describe that as a product; ecotourism is all the attractions based on natural resources. Ecotourism market is a journey that is directed at environmental conservation efforts as well as the approach to development, ecotourism is a method of resource utilization and management of eco-friendly tourism.

Manado is the capital of North Sulawesi province and part of the Republic of Indonesia. In 2010, Manado has set the vision of region as a Model of Ecotourism City. But the emphasis is on

* Correspondence address:

Benny Irwan Towoliu

Email : benny.tourism@gmail.com

Address : Campus of Polytechnic. JL. Politeknik Ds Buha

Manado PO BOX 1256

marine ecotourism as the main base; Bunaken National Park as a tourist icon. The strategic position of Manado is located on the bay facing the Pacific Ocean. However, the existence of Manado cannot be separated from the mainland element of mountains and hills that form the topography of the city which is also located between the hills. Tourism development focus has been in the maritime sector, caused the land (terrestrial) sector does not get a priority to be developed. It can be seen from the profile tourists visiting North Sulawesi which almost 95% [12] aimed to Bunaken National Park. This trend is also seen in the flow of tourists who visit in Manado every year, the highest in May to October [13], then decreased from November to April. The flow of tourists is mainly influenced by weather conditions in the sea of Manado and surrounding areas. Travelers had only intended to go to Bunaken Marine Park and there are no other alternative tourist sites that can be visited. Due to the uneven deployment, it motivates the government of Manado to create a plan development of mainland area.

Manado City Government in 2012 has planned to encourage the development of tourism sector by relying on mainland natural planned areas surrounding mountains in the city of Manado. The Master Plan of Regional Tourism Development (RIPPDA) of Mount Tumpa is prioritized as an area of ecotourism product development on mountains and forests. This location is actually a water buffer zone in Manado City and surrounding areas. This location is the highest plateau in the city of Manado and the surrounding lowland which serves as plantation areas and the community agriculture, due to its adequate soil fertility. Soil fertility levels of 432.24 ha is relatively fertile and the rest (251 ha) was moderate, with a depth of up to 50 cm soil solum. Solum depth level is very useful for the development of agriculture because it has an adequate thickness of top soil to plant roots [14]. Based on the earlier study of city government in 2009, this region would serve as agro-tourism area, by looking at the crops plantation and agriculture such as rambutan, mango and papaya as well as potatoes and corn to be produced from this region. However, further study showed that this region has the core advantage to be developed as an integrated tourism area based on ecotourism. The uniqueness of such potential areas of forest, mountain and coastal mangrove forests are integrating, with proper development could

become another alternative tourism besides the Bunaken area.

The tourists perception on tourism development area is considered very important, considering how strong the appeal of tourist attraction. In addition, the site should have value of sale to be marketed and tourists are interested in visiting the region in the future. Examined tourist perceptions, experiences and argues that tourist perception is positive and their experiences are beyond expectations based on cultural enrichment and local people friendliness plus local hospitality facilities. Consumers embrace tourism as an activity which personal identity can be constructed autonomously and authentically [15]. Henderson points out that setting appropriate infrastructure and political instability, security and safety greatly affect the perception of tourists to visit to tourism destination [16].

This suggest that unique factors of tourist attractions, accessibility, ancillary, and available amenities in a tourist destination would be meaningless without the rating assessment by tourists. Thus the perception of tourists is the experience of a tourist attraction, events, or relationships obtained by inferring information and give a message.

However, they did not do in-depth study of ecotourism as an attraction. It is implied in the development of tourist area, which neglected the importance of tourists or visitor's perception who have been visited the region. The perception is in the form of comments about the potential area to be developed into an integrated tourist area, which is based on the advantages indicator of Tumpa Mountain area. Therefore, the purpose of this study assessed the perception of tourists to the potential development of the Tumpa mountain region as an integrated ecotourism in the city of Manado, North Sulawesi Province.

MATERIALS AND METHODS

Study Area

Tumpa Mountain located in the Province of North Sulawesi, with ¼ of its location is included in the administrative area of Manado City and the other part of North Minahasa Regency. There are 4 villages around the area namely Pandu, Molas, Meras and Tongkaina. These villages are part of Manado administrative while Tiwoho is administratively part of the North Minahasa Regency.

The height of Mount Tumpa is 400 to 600 m above sea level (asl) with the highest peak 623 m

asl with most hilly topography. The northern part of the mainland leads to the sea thus it is adjacent to the Bunaken National Park, ± 15 minutes from the entrance of the park on the island of Bunaken.

Tumpa Mountain area has a few natural potentials, ranging from the potential of the mountain, protected forests, smallholders, beaches and mangrove forests. This potencies form a single (integrated) unit which is mutually inseparable. In their Master Plan Tourism [17], Manado Government established this area as an area of forest and mountain ecotourism products.

Data Collection

This research involved a qualitative approach research method. The results were described by using figures of the percentage. Fieldwork used a questionnaire survey. The sampling method is accidental sample [18] with the number of samples 25 respondents who provide recommendations for the development of ecotourism sites. The questionnaire consists of 13 indicators that provide overall picture of the main potential, two potential support, 3 social and cultural attractions, 6 indicators of accessibility, 5 indicators of facilities, and 4 indicators of ancillary.

Data Analysis

In the measurement, we used Likert Scale in the form of scoring criteria [19]. The following explanations are: very good (5), good (4), fairly good (3), bad (2) and very bad (1). Scores range

categories are: 1.0-1.7 (very bad), 1.8 - 2.5 (bad), 2.6 - 3.3 (medium), 3.4 - 4.1 (good) and 4.2 - 5.0 (very good). Then compared with the analysis of interest rate (level of importance) to measure how important each indicator in condition to be maintained and developed in a tourist location.

RESULTS AND DISCUSSION

Main Potential Tourism Attraction

The results showed the majority of respondents stated that the potential main attractions of Mount Tumpa area are good, only a small proportion considered as ‘fairly good’. In more detail, the respondents' assessment on the potential tourism attraction showed in Table 1.

Potential amazing nature in Tumpa Mount region was assessed as *very good* by 40% of respondents and *good* by 28% of respondents, and the other 4% is very bad. The total score for this question amounted to 100 with an average real score of the the item is 4.0, considered as *good*.

As many as 64% of respondents expressed that potential comfortable temperature and humidity is good, while 32.2% of respondents stated *fairly good*. The remaining 4% is bad with a total score of 89 and the average real score for the item is 3.6, included as *good*.

Respondents expressed *very good* of 4% for normal rainfall, 64% for *good*, followed by 20% *fairly good*, while the remaining 4% said bad, and 8% said it is very bad. The total score for this question amounted 88, with average real score 3.5 which is in *good* criteria.

Table 1. The Value of Tourist Perception towards the Main Potential Tourism Attraction in Tumpa Mount Area

Main Attraction Indicator	Tot		VB		B		FG		G		VG	
	(N)	%	Tot	%	Tot	%	Tot	%	Tot	%	Tot	%
Amazing Nature	25	1	4.0	0	0.0	7	28.0	7	28.0	10	40.0	
Comfortable temperature and humidity	25	0	0.0	1	4.0	8	32.2	16	64.0	0	0.0	
Normal rainfall	25	2	8.0	1	4.0	5	20.0	16	64.0	1	4.0	
Seeing the sunrise and sunset	25	1	4.0	0	0.0	5	20.0	10	40.0	9	36.0	
Unique flora	25	0	0.0	0	0.0	8	32.2	12	48.0	5	20.0	
Unique fauna	25	1	4.0	0	0.0	7	28.0	12	48.0	5	20.0	
Trekking location	25	2	8.0	0	0.0	5	20.0	15	60.0	3	12.0	
Hiking location	25	1	4.0	1	4.0	8	32.0	7	28.0	8	32.0	
Fun bike location	25	1	4.0	2	8.0	5	20.0	13	52.0	4	16.0	
Camping location	25	1	4.0	1	4.0	6	24.0	9	36.0	8	32.0	
Spiritual location	25	2	8.0	0	0.0	3	12.0	11	44.0	9	36.0	
Coastal beach	25	5	20.0	7	28.0	7	28.0	6	24.0	0	0.0	
Mangrove forest area	25	2	8.0	1	4.0	3	12.0	10	40.0	9	36.0	

Note: Tot = Total, N = Number, VB = Very Bad, B = Bad, FG = Fairly Good, G = Good, VG = Very Good

A panoramic view of the sunrise and sunset from the top of Tumpa Mount was assessed. The results showed that 36% perceived *very good* and 40% *good*. While respondents considered fairly good by 20% and only 4% of respondents perceived *very bad*. The total score is 101, with average score 4, stated as *good*.

Unique potential of flora rated as *good* by 48% respondents and *very good* by 20% respondents. The remaining 32% of respondents expressed as *fairly good* and no respondents expressed *bad*. The total score is 97 averaged 3.9, thus stated as *good*.

Total of 48% respondents expressed that the potential uniqueness of fauna is *good*, 20% said *very good*, 28% expressed *fairly good* while the remaining 4% said it was *very bad*. The total score is 95, average score is 3.8, included in *good*.

Potential trekking site assessed as *good* by 60% respondents, and 12% *very good*, 28% *fairly good*, while the remaining 4% said *very bad*. With total score of 95 and averaged for 3.7, it is included in *good*.

As many as 32% of respondents stated that potential hiking location is *very good*, 28% respondents said *good*, 32% respondents expressed *fairly good*. The other was 4% respondents expressed *bad* and *very bad*. The total score is 95 with average score of the real for the item is 3.8 which are *good*.

Potential location for fun bike was expressed by 52% of respondents as *good*, while 16% of respondents expressed *very good*, followed by 13% expressed *fairly good*. The remaining 8% of respondents stated *bad* and 4% said it was *very bad*. Total score is 96 with an average score of 3.7 is *good*.

As many as 36% of respondents said *good* and 32% expressed *very good* as a camping site and followed by 24% of respondents expressed *fairly good*. The other was 4% said *bad* and *very bad*. Total score 97, averaged 3.9 considered as *good*.

As spiritual locations, 44% respondents declared as *good*, 36% said *very good* and 12% expressed good enough. While the remaining 8% said it was

very bad. The total score of 100 with an average score of 4 is *good*.

Coastal areas that have aesthetic value and suitable for swimming location were assessed good of 24% respondents, followed by 28% *fairly good* and *bad*, and the other 20% said it was *very bad*. The total score was 64 with an average 2.6 which is *fairly good*.

Mangrove forests serve as ecotourism area, assessed by 40% respondents as *good*, 36% *very good* and 12% followed by *fairly good*, 4% *bad* and 8% *very bad*. The total score is 98 with an average score of 3.9 which is *good*.

Assessment by traveler perception towards the potential tourist attraction indicates that the highest value is the amazing nature; see the sunrise and sunset; and spiritual location with real value of a score is 4.0. However, the average value of the overall score at the level of 3.72 is included as *good*. Thus it can be concluded that nature is main potencies to be developed as tourist attractions in Tumpa Mount area.

Supporting Potential Tourism Attraction

The supporting potential attractiveness regarded as espousal for the potential inherent core nature in the main natural elements (Table 2). Assessment on the potential supporting found two elements of the attractions that appeal are plantations (coconut and fruit) and cropping patterns of people who settled in the area surround Mount of Tumpa.

Potential of agriculture in the region of Tumpa Mount were expressed as *good* by 56% of respondents, 20% for *very good* and *fairly good*, while the remaining 4% is *very bad*. The total score for this question is 101 with real average score 3.9 considered as *good*.

Total of 48% respondents expressed that the potential farming model of community is *good*, followed by 28% respondents stated *very good*. The others 20% said *fairly good* while the remaining 4% said *bad* with a total score of 100 and an average score 4, included as *good*.

Table 2. The Value of Tourist Perception towards the Supporting Potential of Tourism Attraction in Tumpa Mount area

Indicator of Supporting attraction	Tot		VB		B		FG		G		VG	
	(N)	Tot	%	Tot	%	tot	%	tot	%	tot	%	
Agriculture	25	1	4.0	0	0.0	5	20.0	14	56.0	5	20.0	
Farming model	25	0	0.0	1	4.0	5	20.0	2	48.0	7	28.0	

Note: Tot = Total, N = Number, VB = Very Bad, B = Bad, FG = Fairly Good, G = Good, VG =Very Good

Overall assessment of supporting factors by respondents averaged for 3.94 that included as *good*. It can be concluded that the factors which supporting the main component of a tourism attraction should always be maintained, not to be marginalized, because they have uniqueness attraction in ecotourism scheme.

Socio-cultural Potential Tourism Attraction

Assessment of respondents toward socio-cultural community attraction surrounding the Tumpa Mount is *good* (Table 3). Livelihoods systems around Mount Tumpa are farmers and fishermen. As 40% respondents included as *good*, 8% rate as *very good* and 48% *fairly good*, while the remaining 4% rate as *bad*. The total score for this question amounted to 88 with an average score of the real for the item is 3.5 which is *good*.

As many as 40% of respondents rate as *good* for the spiritual life of the community, and 36% rate as *very good* and 20% *good enough*. Otherwise, the remaining 4% rate as *bad*. The total score for the question is 102 with average rating scores for 4.1, which is *good*.

Local wisdom of people living in the region perceived 32% of respondents as *very good*. Followed by 16% respondents expressed *good* and 40% *fairly good* while the remaining 4% is *bad* and 8% is *very good*. The total score is 90, average score was 3.6 considered as *good*.

From the assessment on the socio-cultural tourism attraction, we obtained that historical relic such as traditional values lead to a better life to be maintained, followed by local wisdom and spiritual

life. But in general, the average overall score for the indicators is 3.53 (*good*). This means socio-cultural attraction needs to be maintained and developed, regards to the community-based ecotourism.

Accessibility in Tumpa Mount area

In tourism development, the availability of infrastructure such as transportation modes, mileage, condition and road safety, and others affect tourist's decision on their destination. Factor of speed, comfort, safety and convenience are needed for a destination that deemed fit for sale. The following Table 4 showed tourist ratings to the existence of accessibility to Tumpa Mount area.

Availability of transportation mode to the locations assessed 44% as *very good*, 32% *good* and 24% *fairly good*. No respondents stated *bad* or *very bad*. The total score is 105, with average value 4.2, it is included as *good*.

Distance from the airport or harbor to the location assessed 24% as *very good* and 28% *good* followed by 24% *fairly good*. While 20% rate is *bad*, and 4% is *very bad*. The total score amounted to 87, with an average score 3.5, which is *good*.

Total of 56% respondents rate *good*, 32% rate as *very good* and 8% is *fairly good* for assessing on road conditions. While the remaining 4% rate *bad*. Total score is 104, with an average value of 4.2, considered as *good*.

For safety road, 36% respondents rate *good*, 28% rate *very good* and 20% *fairly good*. While 8% rate *bad*, and 4% is *very bad*. Total score of 94 with average 3.8, categorized as *good*.

Table 3 . The Value of Tourist Perceptions towards the Social-culture Potential in Tumpa Mount Area

Social-culture attraction Indicator	Tot		VB		B		FG		G		VG	
	(N)	Tot	%	Tot	%	tot	%	tot	%	tot	%	
Livelihood	25	0	0.0	1	4.0	12	48.0	10	40.0	2	8.0	
Spiritual living	25	0	0.0	1	4.0	5	20.0	10	40.0	9	36.0	
Local-wisdom	25	2	8.0	1	4.0	10	40.0	4	16.0	8	32.0	

Note: Tot = N = Number, Total, VB = Very Bad, B = Bad, FG = Fairly Good, G = Good, VG =Very Good

Table 4. The Value of Tourist Perception towards Existed Accessibility in Tumpa Mount area

Accessibility Indicator	Tot		VB		B		FG		G		VG	
	(N)	Tot	%	Tot	%	Tot	%	Tot	%	Tot	%	
Transportation mode	25	0	0.0	0	0.0	6	24.0	8	32.0	11	44.0	
Distance of site to airport, harbor, etc	25	1	4.0	5	20.0	6	24.0	7	28.0	6	24.0	
Existing road	25	0	0.0	1	4.0	2	8.0	14	56.0	8	32.0	
Safety of road	25	1	4.0	2	8.0	6	24.0	9	36.0	7	28.0	
Telecommunication system	25	0	0.0	0	0.0	5	20.0	7	28.0	13	52.0	
Terminal	25	2	8.0	4	16.0	7	28.0	5	20.0	7	28.0	

Note: Tot = N = Number, Total, VB = Very Bad, B = Bad, FG = Fairly Good, G = Good, VG = Very Good

Telecommunications systems rated 52% as *very good*, 28% *good* and 20% *fairly good*. No respondents felt the telecommunications is *bad*. The total score on the indicator is 108, with an average 4.3, which categorized as *good*.

As many as 28% respondents rate as *very good*, 20% *good* and 16% *fairly good* for the condition of traditional terminal. While the 16% rate as *bad* and 8% *very bad*. The total score is 86 with average value 3.4, which is *fairly good*.

Based on the perception of tourists towards accessibility above, it is implied that the system of telecommunications and transportation modes rated highly by respondents. The five indicators Assessment towards the accommodation sur-round the site showed 60% respondents answered *very good*, 16% *good* and 20% *fairly good*. Otherwise, 4% respondents are *very bad*. The total score for this indicator is 107, with average value of 4.3, which is *good*.

For restaurants, 48% of respondents rate *good*, 32% rate as *very good* and 20% *fairly good*. None of respondents perceived the restaurants as *bad*. The total score for the restaurants are 103, with average value of 4.1, which categorized as *good*.

Availability of clean water in the area was 76% as *very good*, 20% *good* while 4% *fairly good*. Total scores for is 116 with average value of 4.6, which is *very good*.

For electricity, 72% respondents perceived *very good*, followed by 12% rate *good* and 12% other is *fairly good*. No respondents expressed *bad* on the electrical system. The total score on the item is 114 with average value of 4.6, which is *very good*.

have average value of 3.89, which is categorized as *good*. Thus it can be concluded that the accessibility in the Tumpa Mount Area were assessed worthy and good. The government only needs to reorganize things that were deemed to be lacking.

Facilities Service

Service of facilities for tourists is a means of supporting factor that very important for tourism destination in order to meet the needs of tourists during the journey. The results of respondents' perceptions on service facilities in Tumpa Mount area showed in Table 5 below.

Tourist information center was rated by the respondents as 48% *very good*, 28% *good*, 20% *fairly good* and 4% *bad*. The total score is 104 with average value of 4.2, which categorized as *good*. Based on the survey, we can assume that the availability of clean water and electricity were rated highly by respondents. However, the average total value of 4.35 is generally *good*. This means that direct various facilities have been provided for the development of ecotourism in Tumpa Mount area.

Ancillary services

Ancillary services are often referred as a complement provided by local government on tourist destinations, both for tourists and tourism actors. Services provided include physical development and coordinate all sorts of activities with the legislation on tourist destination. Ancillary services in Tumpa Mount area can be seen in Table 6 below.

Table 5. The Value of Tourist Perception towards Tourism Facility Service in Tumpa Mount area

Tourism facility service Indicator	Tot		VB		B		FG		G		VG	
	(N)	Tot	%	Tot	%	Tot	%	Tot	%	Tot	%	
Accommodation	25	1	4.0	0	0.0	5	20.0	4	16.0	15	60.0	
Restaurant	25	0	0.0	0	0.0	5	20.0	12	48.0	8	32.0	
Clean Water	25	0	0.0	1	4.0	0	0.0	5	20.0	19	76.0	
Electrical System	25	0	0.0	0	0.0	3	12.0	3	12.0	18	72.0	
Tourism Information Center	25	0	0.0	1	4.0	5	20.0	7	28.0	12	48.0	

Note: Tot = Total, N = Number, VB = Very Bad, B = Bad, FG = Fairly Good, G = Good, VG =Very Good

Table 6. The Value of Tourist Perception towards Ancillary Service in Mount Tumpa area

Ancillary service Indicator	Tot		VB		B		GE		G		VG	
	(N)	Tot	%	Tot	%	Tot	%	Tot	%	Tot	%	
Organizer	25	1	4.0	1	4.0	7	28.0	13	52.0	3	12.0	
Guide	25	1	4.0	2	8.0	6	24.0	9	36.0	7	28.0	
Regulation	25	3	12.0	2	8.0	5	20.0	9	36.0	6	24.0	
Tour Travel	25	0	0.0	3	12.0	6	24.0	9	36.0	7	28.0	

Note: Tot = Total, N = Number, VB = Very Bad, B = Bad, FG = Fairly Good, G = Good, VG =Very Good

Assessment on tour organizer for the region showed 52% respondents rate *good*, followed by 12% *very good* and 28% *fairly good*. Whereas the same score 4% assessed as *bad* and *very bad*. The total score is 91 with average value of 3.6, categorized as *good*.

Tour guides were assessed 36% as *good*, 28% as *very good* and 24% considered *fairly good*. While 8% respondents rate *bad* and 4% rate *very bad*. The total score is 94 with average value of 3.8, included as *good*.

Assessment of tourism regulation that apply on tour found that 36% of respondents rate as *good*, 24% *good* and 20% *fairly good*. While 12% perceived *bad* and 8% perceived *very bad*. Total score is 88, with average value of 3.5 considered as *good*.

Travel business activities within the area were perceived 36% as *good*, 28% as *very good*, 24% *fairly good* and 12% as *bad*. The total score is 94 with average value of 3.8, categorized as *good*.

The assessment of the tourists' perception towards ancillary service implied that the highest values found in business tour indicators, and followed by guide and tourism regulation. But overall average value for the availability of additional services in the area is 3.8, which included in *good* category. Although included in *good* category, the government needs to make improvements for additional facilities for tourist activities.

Level of Importance

Analysis on the level of importance of various indicators in diverse potential tourism in Tumpa Mount area showed in Table 7. The 13 indicators of the main attractions that exist in the Tumpa Mount area need to be developed as seen from scoring average respondent which amounted to 3.94. It is important to develop the area for tourism based on the perception that included in good indicator. In addition, respondent's perception on supporting attraction and socio-cultural attractions has essential predicate to be maintained and developed. This can be seen from the average score for the second assessment on the additional attraction; 4.16 for supporting attraction and 3.76 for socio-cultural attractions.

The local site area development was schemed as an alternative tourism attraction based on integrated ecotourism. This potential will become an integral part of its own appeal, support each other and are unique to the destination city of Manado.

Assessment on accessibility indicators for all road conditions implied that according to the predicate, telecommunication system is very important to be developed. Although the average value of all the important is 4.22. Tourism should provide comfort and ease in reaching the tourism location. Modes of transportation, proximity distance between the airport and port as well as safety and comfort of road will create a good image for tourists visiting a destination.

Table 7. The Tourist Perception towards the Level of Importance on Potential Tourism in Tumpa Mount area

Indicator of Potential Tourism Attraction	Tot N	Tot Sc	R	P
Main Attraction				
Amazing nature and landscape	25	104	4.2	Important
Comfortable temperature and humidity	25	94	3.6	Important
Normal rainfall	25	89	3.6	Important
Seeing the sunrise and sunset	25	101	4.0	Important
Unique flora	25	105	4.2	Important
Unique fauna	25	102	4.1	Important
Trekking location	25	98	3.9	Important
Hiking location	25	105	4.2	Important
Fun bike location	25	91	3.6	Important
Camping location	25	100	3.6	Important
Spiritual location	25	103	4.1	Important
Coastal beach	25	94	3.8	Important
Mangrove forest area	25	105	4.2	Important
Supporting Potential				
Agriculture	25	103	4.1	Important
Farming model	25	105	4.2	Important
Social-Culture Attraction				
Livelihood	25	90	3.6	Important
Spiritual Living	25	98	3.9	Important
Local wisdom	25	94	3.8	Important
Accessibility				
Transportation mode	25	109	4.4	Important
Distance from location to airport or port	25	96	3.8	Important
Existing road	25	110	4.4	Important
Road Safety	25	109	4.4	Important
Telecommunication System	25	112	4.5	Important
Terminal	25	97	3.9	Important
Tourism Facility Service				
Accommodation	25	115	4.6	Very Important
Restaurant	25	107	4.3	Important
Clean Water	25	115	4.6	Very Important
Electrical system	25	113	4.5	Important
Tourism Information Center	25	110	4.4	Important
Ancillary				
Organizer	25	96	3.8	Important
Guide	25	97	3.9	Important
Tourism Regulation	25	95	3.8	Important
Tour and Travel	25	105	4.2	Important

Note: Tot N= Total Number, Tot Sc = Total Score, R = Rating, P = Predicate

In accordance with the mission of making the city of Manado convenient for residents and visitors, the government should also give attention to the development of local area attractiveness into a convenient tourism destination for anyone.

The tourism service facilities that were ranked very important are accommodation, restaurants, electricity and clean water. This assessment implied that the tourists are very concerned with the presence of food and beverage services

provided during their trip. The availability of accommodation, water, electricity and information centers received the predicate of *very important*, in addition to the restaurant which was considered *important*. The total average score for overall indicator on the facilities' availability is 4.48 with predicate *very important*. Governments and stakeholders must concern on the needs of tourist for supporting facilities in the area.

The predicate to the ancillary/additional facilities – managers, guides, tools and rules of travel business – is considered *important* by the respondents (Table 7) with an average score of overall value of 3.93 (important). Tour actors should pay attention to the additional facilities that tourists needed in order to develop the tourism attraction surround the Tumpa Mount area.

The results from tourists' perception showed positive values, i.e. *good* and *important* in the development of ecotourism destinations. Positive perceptions on destination will give good image [20] and facilitate the development of marketing strategies [21]. Level of importance on the development of ecotourism destination [22], will help improve and manage ecotourism as well as useful resources for planning integrated tourism development.

CONCLUSION

The assessment of each indicator component has average value as follows: 3.72 for main attraction, 3.94 for supporting attraction, 3.52 for socio-cultural attraction, 3.89 for accessibility and 3.8 for ancillary. Each of these values is at the level of > 3.5 which means *good* indicator to be developed. Otherwise, the importance level of potencies to be developed showing the average value of 3.94 for the main potential, 4.16 for supporting attractions, 3.76 for socio-cultural attractions, 4.22 for accessibility, 4.48 service facilities and 3.93 for ancillary. Based on these two assessments, the potential for ecotourism in the Tumpa Mount area are 'good' and 'important' to be developed as an integrated tourism area. The tourist perception matched the plan of integrated ecotourism development will facilitate the management consideration for decision making and form a positive image for the tourism destination in Tumpa Mount area.

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REFERENCES

- [1] Rattan, J. K., P.F.J. Eagles, and H.L. Mair. 2012. Volunteer tourism: Its role in creating conservation awareness. *Journal of Ecotourism* 11(1), 1-15.
- [2] TIES. 2000. Ecotourism statistical fact sheet. The International Ecotourism Society.
- [3] Boo, E. 1990. Ecotourism: the potential and pitfalls (2 Vols). World Wildlife Fund, Baltimore.
- [4] Lascurian, C. 1996. Tourism ecotourism and protected areas. Papers of Tourism Workshops. The World Congress IV on National Park and Protected Areas. Caracas, Venezuela.
- [5] Weaver, B. D. (Ed). 2001. The encyclopedia of ecotourism. CAB International. Wallington Oxon, UK.
- [6] Weaver, B. D. 2001. Ecotourism. John Wiley & Sons Limited. Australia.
- [7] Weaver, B. D. 2008. Ecotourism, 2nd Edition. John Wiley & Sons Limited. Australia.
- [8] Peggy, J. P. 2005. Ecotourism. Kid Haven Press. New York.
- [9] Singh, J. 2010. Ecotourism. I.K. International Publishing House Pvt Ltd. New Delhi.
- [10] Damanik J., H.F. Weiber. 2006. Ecotourism planning: from theory to application. Yogyakarta. Andi Offset 10, 37-38.
- [11] Pegas, F., A. Coghlan, and V. Rocha. 2012. An exploration of a mini-guide programme: Training local children in sea turtle conservation and ecotourism in Brazil. *Journal of Ecotourism* 11(1), 48-55.
- [12] Statistical Central Office of North Sulawesi. 2013. North Sulawesi statistical data. Statistical Central Office of North Sulawesi. Manado.
- [13] Bunaken National Park Management Board. 2010. Final Report: formulation study of potential tourism and culture, Manado City. PT. Megumi Abadi.
- [14] Agribusiness Department of Manado. 2009. Development of agrotourism area in Mount Tumpa to Manado World Tourism City. Agribusiness Department Office of Manado.
- [15] Rahman, M.S. 2012. Exploring tourists' perception: the case of Bangladesh Tourismos: An International Multidisciplinary Journal Of Tourism 7 (1), 81-98.
- [16] Henderson, J.C. 2011. Tourism development and politics in the Philippines. Tourismos: An International Multidisciplinary Journal Of Tourism 6 (2), 159-173.
- [17] Government of Manado City. 2012. Regional tourism master plan of Manado City (RIPPDA). Government of Manado City. Manado.
- [18] Antara, M. 2009. Research methodology of tourism in Bali. Graduate Program of Udayana University. Denpasar.

- [19] Riduwan. 2009. Measurement scale of research variables. Alfabeta. Bandung.
- [20] Coban, S. 2012. The effects of the image of destination on tourist satisfaction and loyalty: the case of Cappadocia. *European Journal of Social Science* 29(2), 222-232.
- [21] Rajesh, R. 2013. Impact of tourist perceptions, destination image and tourist satisfaction on destination loyalty: a conceptual model. *Revista de Turismo y Patrimonio Cultural* 11 (3), Special Issue, 67-78.
- [22] Yacob, M.R., A. Radam, Z. Zamdin. 2011. Tourists perception and opinion towards ecotourism development and management in Redang Island Marine Parks in Malaysia. *International Business Research* 4(1), 62-73.

Tourism Destination Management in Banyu Biru and Ranu Grati, Pasuruan Regency

Sony Manggala Putra^{1*}, Andy Fefta Wijaya², Ratih Nurpratiwi³

¹Master Program of Public Administrative, Faculty of Administratives Sciences, University of Brawijaya

²Faculty of Administratives Science, University of Brawijaya, Malang

Abstract

The tourism sector as one of the leading sectors in Pasuruan still faces many obstacles. The constraints associated with conditions that require improvement on tourist destination related to the presence of infrastructure, zoning, the gap between the tourism destination in the West and the East area, up to the level of visitation which has decreased from year to year. The aims of the study were to describe and analyze Tourism Destination Management conducted by Department of Culture and Tourism Pasuruan at Banyu Biru and Ranu Grati object to become competitive and sustainable tourism destination. This study used a qualitative approach with a case study method locus in the Department of Culture and Tourism Pasuruan. The results of this study indicate that the tourism destination management of Banyu Biru and Ranu Grati when reviewed in terms of competitiveness, still needs a lot of improvement related to the presence of tourism facilities and the quality of employees as service providers. In terms of sustainability, it shows that the synergy between the regional government and tourism stakeholders need to be improved. The need for the establishment of cooperation with third parties in management of tourism destination in Banyu Biru and Ranu Grati, can be used to optimize the carrying capacity and tourist destination marketing system at Banyu Biru and Ranu Grati in order to compete in a competitive and sustainable way.

Keywords: tourism destination management, competitiveness, sustainability

INTRODUCTION

The existence of tourism as a leading sector itself actually have been recognized. This is in accordance with the statement of the World Tourist Organization (WTO) that over the past six decades, tourism experienced continued expansion and diversification, becoming one of the largest and fastest growing economic sectors in the world [1]. Surely the statement demanding role of the tourism sector management to have innovation and creativity, which are able to pack wide range of existed diversity in one attractive package, making it a tourist attraction with commercial value to the tourists.

Pasuruan Regency has become one of marketable tourist destination area in East Java Province. Vision of Pasuruan regency is realizing the religious, competitive, independent, and prosperous local regency in Indonesia. To realize competitive, independent and prosperous Pasuruan, it needs to utilize the potential of the area as much as possible [2].

One way of optimizing the utilization of the potential area is through the tourism sector since the presence of the tourism sector in essence is a form of potential resources embedded in an area. There numerous tourist destination that can be found in Pasuruan. Area of Mount Bromo with a panoramic view attracts many tourists to visit. Some accommodation service of international standard can be found in the surrounding area of this attraction. Besides Bromo, there are several other tourist attractions are visited by local and foreign tourists, e.g. Taman Safari II became the object of entertainment and education in nation wide tour; Purwodadi as a national botanical garden as branch of LPPI education; and Chandra Wilwatikta Park with the greatest amphitheater potential to add an object array of tourist in Pasuruan. Although Pasuruan has a variety of potential tourist resources, it turns out there are only two tourist destination that are managed directly by the Regional Government through the Department of Culture and Tourism (DISBUDPAR) of Pasuruan Regency, i.e. Banyu Biru and Ranu Grati.

Banyubiru natural swimming pool is a natural lake located in Sumberejo Village, Winongan

* Correspondence address:

Sony Manggala Putra

Email : into_dream@rocketmail.com

Address : Magister Program of Public Administrative,
Faculty of Administrative Science, Malang 65145

District which cover the area of 4.47 ha. It is believed to have magical powers; swimming at Banyubiru is believed in helping the body to stay young and giving convenience to people who swim there. Otherwise, Ranu Grati is known as natural lake in Grati Sub-district which covers the area 1,085 ha and the only Lake/Ranu located in lowlands. The facilities that can be enjoyed in Ranu Grati are fishing, boats and water bikes [3].

However, in practice the tourism sector in Pasuruan regency still having some problems, including the presence of attraction Banyu Biru and Ranu Grati which is directly under the management of the Department of Culture and Tourism Pasuruan Regency. The constraints associated with the conditions that require improvement attractions related to the presence of infrastructure, the gap only between the attractions in the West and the East area to the associated decline in tourist arrivals.

Through the perspective of New Public Management, the concept of *Government run like business* used into proper perspective in reviewing the tourism sector. Moreover Hood in Osborne declares focus on hands-on and entrepreneurial management, as opposed to the traditional bureaucratic focus of the public administrator [4] which emphasizes the importance on the role of market management of the government sub-units that exist in performing its duties and functions. Thus the role of public administrators is required to have innovations in management of the attraction existence that is marketable and sustainable.

Complex presence of the tourism sector will require an integrated management of tourist attraction. Goeldner reveals the Tourism Destination Management consists of two aspects (Table 1), i.e. competitiveness (business economic management skills) and sustainability (environmental management capabilities) [5].

Furthermore, researchers are interested in knowing and analyzing related attractions management conducted by the Department of Culture and Tourism Pasuruan regency towards the flow management of tourism industry in facing the increasing competitive against competitors (private sector) without forgetting to emphasize the environmental aspects (sustainability). Then the research aimed to assess the management of competitive and sustainable tourism with a case study on the attraction Banyu Biru and Ranu Grati managed directly by the Department of Culture and Tourism Pasuruan Regency.

Table 1. Element of Tourism Destination Management

Competitiveness	Sustainability
Marketing	Waste
Financial	Water Quality
Operations	Air Quality
Human resources	Wildlife
Information	Forest / Plant
Organization	Visitor
Strategic Planning	Community
Project	Commeorative
Management	Recycling
	Site Protection
Management Information	
Destinaton Monitoring	Destination Research

Source: Goeldner [5]

Tourism Destination Management

Dupeyras as the Head of Tourism in Organisation Economy Cooperation and Development (OECD), explained that **competitiveness tourism management** is the ability of the place to optimize its attractiveness for residents and non-residents, to deliver quality, innovative and attractive tourism services to consumers and to gain market shares [6]. These explanations illustrate that tourist destination management should be able to maximize its appeal that emphasizes on quality, innovation and service. It is expected to provide an exciting experience for visitors.

To support the creation of a competitive attraction with a high competitiveness, it must be supported by the implementation of the principle of management that integrates several aspects. The aspects ranging from; integrated **strategic planning** of tourist destination should be synergized with the regional development plan area [7]; **organization management** consists of formulating objectives, division of labor, unity of command and coordination in the workflow manager [8]; **human resources** (employee) that determine the quality of service, can be provided to tourists visiting in resulting benefits [9]; tourism **development/project** should still concern to the physical resources or components of the tourism product in it, thus create a competitive advantage [10]; price and product are related to each other, from the preceding section it must be clear that **financial management** is a key element in inter-firm competition [9]; **operations management** deals with the production good and services and defined as a transformation system that converts inputs into outputs [11]; **marketing** as an organizational function and a set of processes for creating, communicating and delivering value to

customers [5]; and **information management** to support the implementation of the basic tasks and all things that are relevant to the tourism management [12].

Furthermore, **sustainable tourism management** recognizes the future of the tourism sector depends on protecting life of all diversity. It integrates economic and ecological concerns [13]. In practice, it is not only a tourist and natural resource consuming activity but stressed on the conservation of cultural attractions. Thus the conservation of environment and local community involvement were contributed significantly to the sustainability.

To realize tourism sustainability, they should integrate of some of the following aspects; **waste management** involves the collection, removal, processing, and disposal of materials considered waste [14]; **water quality** is essential because it has very vital role in supporting the development of tourism, without the supply of water resources there will be no development of tourism [15]; **wildlife management** is the 'manipulation' of populations and habitat to achieve a goal, in a way that benefits not only wildlife but also helps people, as well as the habitat itself [16]; **forest/plan management** can be used to the regeneration, utilization, and conservation of forests to meet specified goals and objectives while maintaining the productivity of the forest [17]; **visitor management** through the direction

of the tourist should also concern the existence of environmental attractions [18]; **community management** is the key to accelerate the achievement of livelihoods through tourism development thus future of a tourist attraction can be sustainable [19]; and **commemorative management** emphasizes the management of cultural activities within, which is designed to respond to the needs of culture information to the tourist and to get corrective action [20].

MATERIALS AND METHODS

This research used qualitative research methods with case study approach (Fig. 1). Case study method can be used to examine the individual, group, organization, or a more complex social phenomenon. Case study method approach is appropriate when used in describing and analyzing tourism destination management. Thus they will know the facts and appropriate measures to stimulate attraction in Banyu Biru and Ranu Grati. With case study approach, the researcher possible to maintain and describe the holistic characteristics of the real phenomenon such as individual's life cycle, organizational and managerial processes, changes in the environment [21]. Therefore, the researchers directly involved in this study and get a broad and complete overview about tourism destination management.

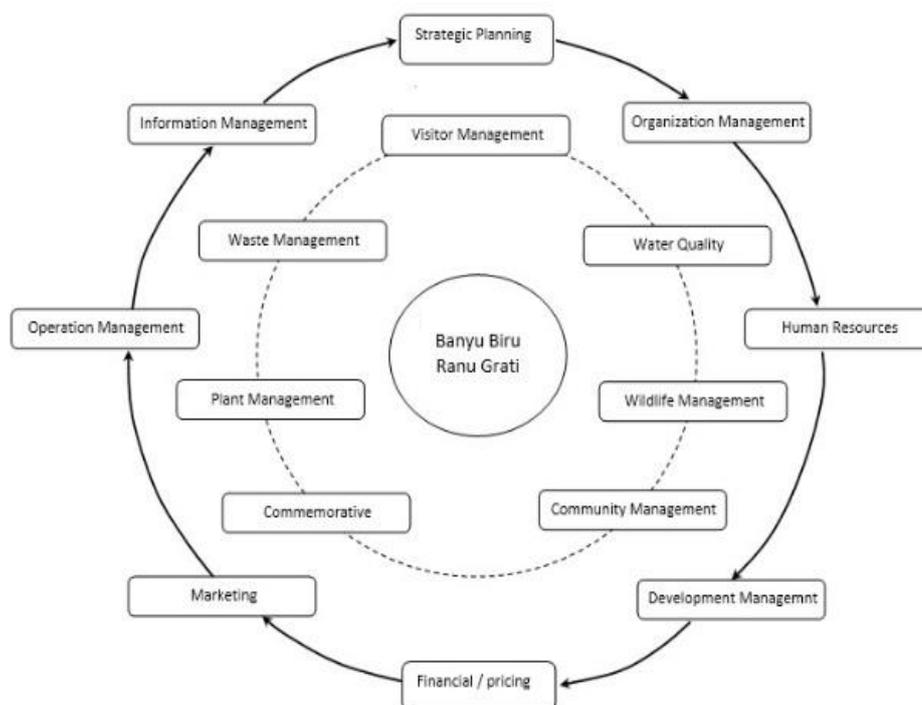


Figure 1. Framework of Tourism Destination Management for Banyu Biru and Ranu Grati

RESULT AND DISCUSSION

Competitiveness

If tourism destination management associated with the destination competitiveness, it emphasizes the level of ability to produce and market a more attractive tourism compared to other attractions that separately visited. Competitiveness in the management aspects of tourist destination consists of strategic planning, organization, human resources, project/ development, operations, financial, marketing and information; which are interconnected and form a unity cycles in creating tourist destination force.

Implementation of the strategic planning undertaken by DISBUDPAR was apparently been going well. Planning has been integrated in accordance with the direction of regional development. It is guided towards the Medium Term Development Plan (RPJMD) that has clear goals within the Strategic Plan, which sets long-term goals and Work Plan (RENJA) which set short-term goals (Fig. 2). Planning is done by DISBUDPAR towards tourist areas of Banyu Biru and Ranu Grati. The plan focuses on repair the facilities and increased tourism event.

To support the implementation of these plans, it is carried out through the organization management of existing work areas. The management of tourist destination facilitated by division of tasks through the establishment of operating units in Banyu Biru and Ranu Grati as technical implementation. These units are

directly managed by the Tourism Development Division of DISBUDPAR. The existence of the operating unit is equipped with a hierarchical structure consisting of a coordinator, secretary and staff. Coordination pattern running vertically to follow the chain of command and flexible, allowing the supply of information and policies can be channeled properly.

However, competitiveness began experiencing barriers at the stage of human resources management. Employees at the Banyu Biru amounted to 7 people while at Ranu Grati only have 5 employees; it resulted in a decrease in the quality of provided services. In addition, training is provided to employees are only given at the beginning of pre-service training. Thus the competence of employees in promoting the tourist attraction is very low. Moving on from this, the unit should improve the quality of employee resources through employee recruitment and provision of training in tourism. Paradigm of the employees in the field of tourism is appropriate only to the extent maid must transformed into professional employees because with the paradigm shift that will certainly improve the quality of service and experience traveled for tourists visiting [22].

Furthermore, we use supply and demand analysis [9] to determine the program project/ development in presenting a competitive tourism product (Table 2). The overall existence of tourism products still requires a lot of improvements.

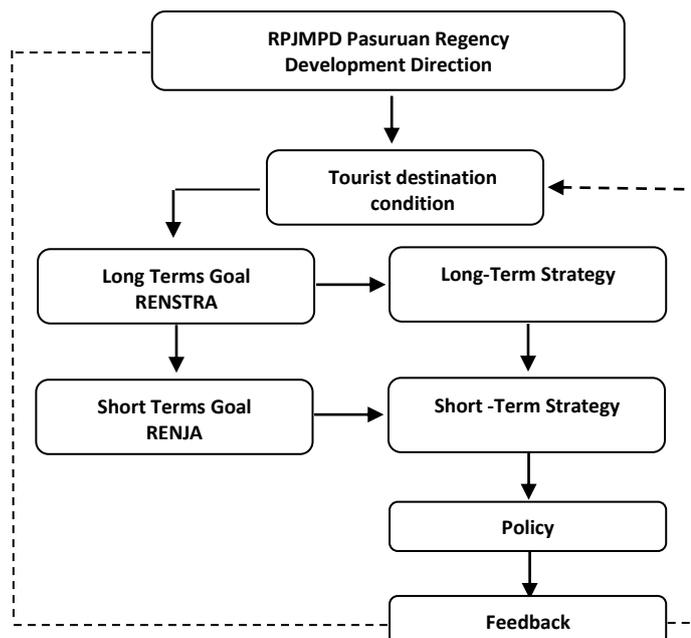


Figure 2. Framework of Establishment Strategy

Considering the conditions on the ground, the project recommendations on tourist destination Banyu Biru is the repair and improvement of the playground, an increase in the intensity of tourism events (music, orchestra, etc.) as well as explores the creative industry community. While the tourist destination of Ranu Grati condition looks as if abandoned.

The implementation of the project activity/development recommended paying attention to repair dock, zoning fishing location and facilities improvements and additions to existing games, additional varieties of tourism events in cooperation with local communities to open outlets of culinary products.

Seeing the condition that occurs within a few years, the implementation of financial management which includes the determination of the admission price for tourist destination Banyu Biru and Ranu Grati must be able to adapt market conditions. It is due to the tourists segmentation is still bounded within the scope of the local community; automatically Pasuruan still requires a market with rapid growth. Price determination by using market penetration pricing is one right way, which is set lower prices than all of its competitors in order to create a high growth over the tourism product [18]. So it should be understood that the price changes made in Banyu Biru tourist destination should be done gradually to adjust the economic conditions. Otherwise, the pricing in Ranu Grati is appropriate given the relatively low price but

needs a revision of the existing tourist facilities to maintain price stability that can be offered.

At its core, customer satisfaction is the main thing in global competition, thus it should be emphasized when the development of tourism products and quality of service is already running the maximum. It will allow ticket held rise because tourists will pay more because satisfaction is increased.

Implementation of the operation management on tourist destination in Banyu Biru and Ranu Grati still considered not run optimal and needs a lot of improvement. At this stage, we reviewed the link between human resources and development as an input to produce output of tourism services [23]. This aspect of course depending on the previous aspects thus the implementation of the operation management on tourist destination of Banyu Biru and Ranu Grati concluded incapable to run optimally. To overcome the problems on management operations, they can involve third parties that expected to boost the development of a more flexible system.

Researchers observed that the marketing activities in Banyu Biru and Ranu Grati were less communicative thus it is not widely known to the public yet. If the improvement and development of tourism products has been running, the marketing and promotion system allows to be done as a form of communication process towards the tourists.

Table 2. Analysis of Project Development Program

Attractiveness	Supply	Demands	Development
Banyu Biru			
Something to do	Swimming Pool (Swimming) Playground (Recreation)	Physical and Interpersonal motives	Repair/ quality improvement of playground facilities
Something to see	Swimming Pool (Nyadran) Stage (orchestra music)	Physical and Cultural motives	-increased intensity of tourism event -Organizing community groups
Something to buy	souvenir shop	Prestige motives	- Food Festival - Exploration results of creative industries
Ranu Grati			
Something to do	Lake/Pier (fishing) Water games (recreation) Playground (recreation)	Physical and Interpersonal motives	-repair dock and zoning fishing locations -Improvements and additions to the game facilities
Something to see	Lake (Distrikan)	Physical and Cultural motives	-empowering local communities -Add varieties event
Something to buy	Store food (fish store)	Prestige motives	-empowerment local communities -Open souvenir outlet

Implementation of promotion can take advantage of a various media. Media that can be used is the advertising or billboards mounted on locations with high intensity such as terminals, connecting road between the city and in the nearest city could be an alternative promotional activities. While social media promotion can be done via facebook, twitter, websites, thus focused market segments can be expanded.

Information management mechanism begins with input information in the form of a series of oral and written statements in the documents provided by the coordinators of each related tourist destination. The report globally contains the condition and needs of the tourist attraction. The flow of incoming information is then processed by the secretariat section that serves as a data processing unit where its presence serves as a filter against the flow of information on each field. It is associated with the function thus the information can be managed, developed and used integrally in determining the output of the planning as well as the strategy of tourist destination in the future.

Sustainability

The existence of tourist destination in Banyu Biru and Ranu Grati will not run without the support of natural resource environment in it. Tourist destination management and sustainability are closely related with the awareness of environmental issues that include waste, water quality, plant, wildlife, commemorative, and visitor management.

Implementation of waste management is closely related to facilities and infrastructure to support the cleanliness of the location of the Banyu Biru and Ranu Grati. At this stage the researchers see where the trash bin is inadequate, thus necessary to add more bins. Conventional waste management system through the combustion risk for the convenience of tourists, therefore it is necessary to change the method of waste management through recycling method that the waste management can be more environmental friendly. Through the method of recycling the waste can be processed into compost or resale thus have economic value.

As in Banyu Biru that use water in their tourism activities, the tourist destination of Ranu Grati also dominated by the waters activities. To maintain water quality in tourism activities attractions of Banyu Biru, they routinely draining the pool. Otherwise the cleaning of Ranu Grati

was not worked regularly, as constrained by existing funds.

If evaluated from the plant management, the existence of vegetation on attractions area of Banyu Biru already righteously maintained. Optimization on the use of green area can be performed with the re-utilization on area with wild plants by planting plants which has benefit for society or tourists who visiting. Meanwhile, vegetation inside the attractions area of Ranu Grati need to get more attention. The launching agenda of reforestation needs to be performed in order that keep the ledges of the lake do not experiencing a sustainable erosion.

Wildlife management on the tourist destination of Banyu Biru, implied in the existence of fish on natural pond which apparently well maintained. Sengkaring fish which contained in pond already able to adapt with tourists who visiting. Granting food which performed by visitors righteously can be more be regulated through a series regulation. Conversely, the fish existence in Ranu Grati resources is used as consumption target by tourist through the activity of fishing thus if these activities do not uncontrolled then it is feared will disrupt the existing ecosystem. Related to that, managers were able to apply the zoning area of activities, where zone of fishing and cultivating divide clearly.

If we look closely related community management, on both those objects has been occurred involvement of the community. Where in involvement process occurs through the use the local workforce inside the management object of tourism as well as emergence trade efforts through the establishment of stalls contained in attractions area. While on tourist destination Ranu Grati forms of stakeholder engagement visible with community of POKDARWIS (*Kelompok Sadar Wisata*). They has been held several times of annual event like ta'jil bazar or festival food. Surely from some engagement process that occur these directly impact the surround community's economy who gave rise to the expansion of opportunity strive local communities through procurement of goods and services as well as expansion of employment opportunities. DISBUDPAR Pasuruan should also do community building at Banyu Biru tourist destination. Advantages inclusion through the form of community that done on the tourist destination of Ranu Grati besides have an impact on the economy, it also make role of society

more independent and capable initiated within developed tourism.

One of the attractions of cultural activities in Banyu Biru is a tradition that is a series of events Nyadran spiritually purify themselves by swimming in a natural pool. Packaging Nyadran tradition accompanied by organizing music events a week is a picture form DISBUDPAR innovation in marketing local cultural attractions to tourists.

From an economic perspective it is a positive impact on the increase in traffic as well as revenue. But on the other hand, it can also be a threat for the degradation of the local community value because it is feared that the implementation of the cultural traditions instead be replaced with the music events. To anticipate this DISBUDPAR Pasuruan should embrace related community to design and implement a series of events.

While cultural activities attractions Ranu Grati is *Distrikan* tradition, known as "Iarung sesaji" which certainly attend a boat parade on the lake area. Implementation of tradition "Iarung sesaji" in Ranu Grati is well coordinated between the local community with DISBUDPAR as manager of attractions thus in practice the level of community participation is very high. In addition, the implementation of the tradition in the form of a parade appeal the tourist by making direct contact and blend into a crowd of local people dressed in traditional Javanese. Of course, through packaging cultural attractions to tourists as direct touch in addition to economic actors can also be a means to introduce the local culture to the general public.

Tourist destination visitor management at Banyu Biru and Ranu Grati has a very important role in supporting tourism in a sustainable manner. It is because of their presence in direct contact and as beneficiaries of resource tourist destination but the condition of the second object is likely to prejudice the sustainability of tourist destination; which appears from the scattered trash. Thus to make the development of sustainable tourism, the manager of the operating units along with DISBUDPAR need to direct tourist in tourism activities through restrictions on visits so as to give time for the operating unit to take care of tourism facilities. It can also be done through a tourist control board and sanctions warning to tourists who visit to pay attention the existence of the current environment of tourist activity.

CONCLUSION

Tourism destination management in Banyu Biru and Ranu Grati when viewed in terms of competitiveness still needs a lot of improvement. It is related to the presence of tourism facilities are inadequate and attractive for tourists as well as a lack of quality employees as travel service providers. Surely it resulted incompetiveness or tourist destination competitiveness at Banyu Biru and Ranu Grati still can not run optimally and seem to lag behind its competitors (other tourist attractions privately managed). Whereas, if the terms of the sustainability indicates that synergy between managers, tourists and society needs to be improved. Many environmental problems that occur as a result of tourist visits. Departing from it is necessary to modernize the management of waste management as well as tourists visiting in order to care for and to realize environmentally friendly travel. In addition, the existence of social and cultural activities inherent need to be increased to embrace the local community.

RECOMMENDATION

Appropriate conditions on the ground there should be an integrated reform, which includes marketing systems, resources and managerial capabilities. Thus the researchers recommend some alternatives that can be done within a few points:

- 1) Increasing the number of employees who are competent in the field of tourism through the recruitment and training of employees thus improving the quality of tourist services that can be provided,
- 2) Improving the quality of tourism products; where to Banyu Biru can be done through improvement of the playground as well as chipped paint play thing attractions while Ranu Grati with dock improvements, zoning fishing location and facilities improvements and additions to existing games,
- 3) Need for review and consideration for third party involved in managing the Banyu Biru and Ranu Grati which can be done through submission to the management of public enterprises (BUMD) or private but ownership is still under the auspices of the Local Government with application sharing, rental or other agreements. In doing so needs to be followed by the provision of targeting revenue to be met by third parties and the determination of the authority to the PERDA so that it allows the creation of a more

effective marketing system with regard to the analysis of the market.

- 4) Creating ecotourism activity theme, where tourism activities in both destination can be inserted with the provision of educational materials containing information boards or information related to the attractions, the presence of vegetation and ecosystem information on attractions related.

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REFERENCES

- [1] UNWTO. 2013. Tourism Highlights. mkt.unwto.org/Publication/unwto-tourism-highlights-2013-edition. Accessed February 14th, 2014.
- [2] Pasuruan Regency Regulation No.2 of 2008 on Regional Long Term Development Plan.
- [3] Office of Culture and Tourism of Pasuruan Regency. 2012. The charming beauty of Pasuruan Regency : Brochure. Pasuruan: Office of Culture and Tourism of Pasuruan Regency.
- [4] Osborne, S.P. 2002. New Public Management: current trends and future prospects. London: Routledge. p. 9.
- [5] Goeldner, C. R. 2000. Tourism: principles, practices, philosophies (Eleventh Edition). Canada : John Wiley and Sons. p. 418.
- [6] Dupeyras, A. 2013. Indicators for measuring competitiveness in tourism. Organisation Economy Cooperation and Development (OECD)Publishing. p. 12.
- [7] Yoeti, O. A. 1997. Planning and developing of tourism. Jakarta: PT Karya Unipres. p. 13.
- [8] Manullang. 2009. Fundamental management. Jogjakarta: UGM-Press. p. 64.
- [9] Vanhove, N. 2005. The economics of tourism destination. Elsevier Butterworth-Heinemann. p. 76-199.
- [10] Hadinoto, K. 1996. Development planning of tourism destination. Jakarta: Universitas Indonesia. p.21.
- [11] Schroeder, R. 2008. Operation Management. Mc Graww- Hill College. p. 14.
- [12] Siagian, S. 1983. Information system: decision making. Jakarta: PT Inti Idayu Press. p. 11.
- [13] ILO. 2012. Sustainable tourism planning and Green Jobs for Indonesia. Jakarta: ILO. p.30.
- [14] Ecolife. 2011. Definition of waste management. <http://www.ecolife.com/define/waste-management.html>.
- [15] Pitana, I. G. 2009.
- [16] Sargen, M. 1999. Managing Michigan's Wildlife. Michigan State: MDNR. p. 2.
- [17] Helms, J. 1998. The dictionary of forestry. Betheseda MD: Society of American Foresters. p. 71.
- [18] Pitana, I. G. 2009. Introduction to tourism. Jogjakarta : Andi Offset.
- [19] Damanik, J. 2013. Tourism of Indonesia. Jogjakarta: Pustaka Pelajar. p. 9.
- [20] Kell, P. 2013. Protecting historical heritage : the commemorative integrity evaluation program at Parks Canada's National Historic Site. The George Wright Forum 20 (3), 208.
- [21] Yin, R. K. 2003. Case study research (Third edition). USA : SAGE Publication. p. 3.
- [22] Nirwandar, S. 2005. Tourism sector development in the Era of regional autonomy. <http://www.parekraf.go.id>. p. 8.
- [23] Handoko, T. H. 2008. Fundamental of productional and operational management. Jogjakarta : BPFE. p. 6.

Ornamental Plants of Home Garden along the Corridor of Kopendukuh Village, Banyuwangi, East Java-Indonesia as a Basis for Ecotourism Planning

Maic A. L. Sihombing*, Ade M.C. Rohie, Nawafila Februyani, Rosalina E. Swandayani

Master Program of Biology, Faculty of Mathematic and Natural Sciences, University of Brawijaya, Malang, Indonesia

Abstract

Home garden is a habitat for many plants species which are important in planning and management of tourism in rural area. Ornamental plants have crucial function to increase the appearance of homes and buildings through landscaping. The purpose of this study is to analyze ornamental plants species which grow in the home garden along the corridor of Kopendukuh Village as one of the potential attractions of tourism development. The observation of ornamental plants diversity was carried out at home gardens along the rural corridor of Kopendukuh Village. Totally, there are about 10 home gardens were assessed. In each home gardens, plants species were recorded and identified systematically. Qualitative analysis was performed using analysis of sociability, vitality, and periodicity. Result of the survey confirm that home garden is home of about 40 ornamental plants species. These species came from 24 family. About 59% of the ornamental species was classified as individual plant species live in small groups, 28% of ornamental plant was classified as shrubs. About 65% of are ornamental plant without flowers and seeds. The diversity of plants in home garden needs special attention, especially in order to increase settlement visual quality.

Keywords: Kopendukuh, ornamental plant, sociability, vitality, periodicity.

INTRODUCTION

Rural tourism destination is a rural area that has some special characters and attractions to become a tourist destination [1]. The interaction of local people and plants is one of the interesting tourism object [2,3]. Local plants are usually grown by the people in the home garden as an additional economic income. Local-home garden plants with high diversity can provide conservation value along the travel corridors of the village [4]. Home garden is a habitat for many plants species that act as a critical resource in planning and management of tourism [1]. Home garden is a piece of land that is located around the residence and clearly demarcated, planted with one or a variety of plants and still have a relationship with home ownership. When properly maintained, the land can increase scenic beauty of environment. Home garden can be planted with various types of plants that produce and required daily [5].

The important role of home garden in rural areas in developing countries has been widely reported [1]. Home garden also contribute to biodiversity conservation and environment. Home garden can be empowered to various commodities (crops and livestock) and can be

integrated from fruit trees, vegetables, herbs, plantation crops, and animal husbandry [6].

Ornamental plant is a plant that can be shaped herb, vines, bushes, shrubs, or trees, planted as a component of the home garden which has unique form, distinctive and serves as a decoration to beautify and embellish both indoor and outdoor [7]. Ornamental plant has function to increase the appearance of homes and buildings through landscaping, open land abolish useless and increase the number of green open areas. In landscape architecture, the shape and placement of plants are important considerations.

Kopendukuh Village in Banyuwangi Regency has been developed as a rural tourism destination. Based on some resources of the village, the ornamental plant in home garden is one of crucial component that can be used as a tourist attraction. Environment quality in tourism area able to provide satisfaction and it can be used as a vehicle for education to tourists. Among the benefits of the home garden, the contribution of home garden in rural tourism destination development is rarely discussed [1].

Understanding the motives of planting some ornamental species by the local people is very important and allows planners to improve the vegetation quality of home garden which is becomes extremely important in areas adjacent to the attraction. Improving home gardens quality can be a crucial strategy to improve tourism destination quality. The purpose of this

* Correspondence address:

Maic A.L. Sihombing

Email : maicaudolinsihombing@gmail.com

Address : Master Program of Biology, University of Brawijaya, Jl. Veteran. Malang 65145.

study is to analyze ornamental plants species which grow in the home garden along the corridor of Kopendukuh Village as one of the potential attractions of tourism development and the data is crucial for the future tourism destination planning.

MATERIALS AND METHODS

Study Area

The study area is located at the home garden along the rural corridor of Kopendukuh Village. Kopendukuh Village is one of the nine villages in Giri District. It is located in the northern part of Banyuwangi Regency, East Java Province, Indonesia. Giri District is one of 24 districts in Banyuwangi Regency with total area covers 21,31 km².

Kopendukuh is a traditional village which located at the left slope of Mt. Ijen with coordinates position at 08°09'47.7" South Latitude to 114°17'36,6" East Longitude and 08°09'45.7"SL to 114°17'38.7" East Longitude. The village is home for 500 householders.

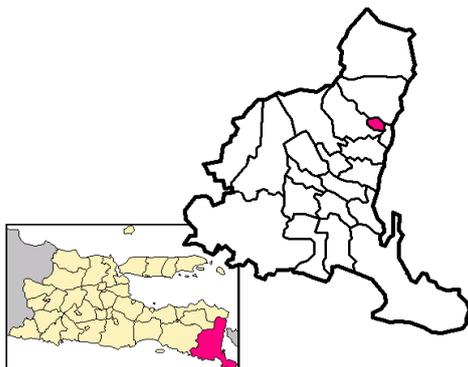


Figure 1. Map of Kopendukuh Village, Giri District, Banyuwangi, East Java-Indonesia [13].

Sampling Procedure

The study was conducted in November 2014 to determine the diversity of ornamental plants species in home garden along the rural corridor of Kopendukuh Village. Preliminary study conducted to obtain information about the condition of the research sites. The next step is filed observations at every house that has a yard. One house with its garden was considered as one plot observation. The plot that has been observed is home with the yard that have at least 3 types of ornamental plants. Plot is mapped using GPS (*Global Positioning System*). There are about 10 plots in the home garden were involved in this study. The plant species which are grown in home garden was recorded and identified using standard plant identification book [8]. At

the same time also conducted interviews with homeowners. Some of the questions related about the use of ornamental plants and the plant maintenance process.



Figure 2. Study area at Kopen Dukuh Village. Pin indicates sampling locations[14].

Analysis Data

Ornamental plant description was conducted using qualitative analysis. Qualitative analysis was performed to describes plant's sociability, vitality, and periodicity [9]. Sociability analysis was conducted in order to know the size of a certain population plant species on the site. Vitality analysis was conducted in order to determine the growth conditions and the presence of buds on a particular plant species. Periodicity analysis was conducted in order to determine the existence of a planting time to bedating through the presence of fruit and seeds as generative organs of plants.

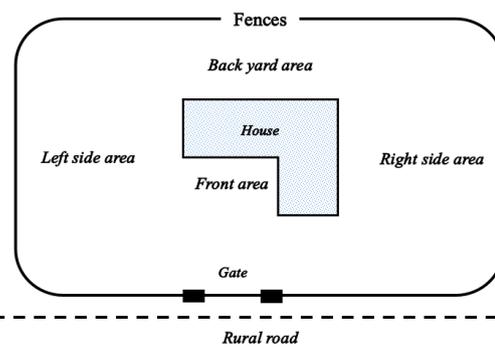


Figure 3. Spatial Arrangement of Home Gardens in Kopen Dukuh [1].

RESULTS AND DISCUSSION

Species Diversity and Distribution of Ornamental Plants

Distribution of ornamental plants along the rural corridor of Kopendukuh Village was centered on the 10 plots that can be seen in Fig. 2. There are about 40 ornamental plants species were

Ornamental Plants of Home Garden along the Coridor of Kependukuh Village (Sihombing et al.)

found. These species came from 24 families (Table 1.).

Home gardens in Kependukuh commonly consist of three zones, front area, left side and right side area that are used for planting ornamental and fruit plants. The ornamental plants are planted to improve scenic beauty of the home. Back yard is the area where many plants grow in multi-cropping system. Tall and giant trees are often found in the back yard. Some plants even have huge canopy [1].

The ornamental plants were abundant in front area. The Euphorbiaceae, such as *Jatropha curcas*, *Jatropha gossypifolia*, *Acalypha siamensis*, and *Euphorbia mili*, were planted in front area, and were used to improve visual quality of the house. Other common species are the members of Apocynaceae, *Plumeria* sp. and *Rosa hybrida*. Ornamental plants are important to increase the scenic beauty of environment.

Table 1. Ornamental Plants List in Kependukuh

Family	Species	Local Name
Euphorbiaceae	<i>Acalypha siamensis</i>	Bunga pagar (teh-tehan)
	<i>Cydista aequinoctialis</i>	Bunga bawang
	<i>Codiaeum</i> sp.	Puring
	<i>Euphorbia mili</i>	Euphorbia
	<i>Jatropha curcas</i>	Jarak pagar
	<i>Jatropha gossypifolia</i>	Jarak merah
Araceae	<i>Ixora javanica</i>	Soka
	<i>Anthurium Plowmanii</i>	Gelombang cinta
	<i>Caladium bicolor</i>	Keladi merah
	<i>Dieffenbachia amoena</i>	Beras kutah
Areaceae	<i>Spathiphyllum</i> sp.	Lili kampung
	<i>Cocos nucifera</i>	Kelapa gading
	<i>Hyphorbe lagenicaulis</i>	Palem botol
Asteraceae	<i>Roystonea</i>	Palem raja
	<i>Cosmos caudatus</i>	Kenikir
Cycadaceae	<i>Plucehea indica</i>	Beluntas
	<i>Cycas rumphii</i>	Pakis haji
Liliaceae	<i>Zamia variegata</i>	Zamia kulkas
	<i>Amarvilis</i> sp.	Bunga bakung
Acanthaceae	<i>Dianella tasmanica</i>	Lili-lilian
Acanthaceae	<i>Pachystachys lutea</i>	Bunga lilin
Agavaceae	<i>Cordyline fruticosa</i>	Andong
Agavaceae	<i>Sansevieria trifasciata</i>	Lidah mertua
Amaranthaceae	<i>Alternanthera amoena</i>	Bayam merah
Apocynaceae	<i>Plumeria</i> sp.	Kamboja bunga putih
Araliaceae	<i>Talinum crassifolium</i>	Ginseng jawa
Arecaceae	<i>Aglonema</i> sp.	Aglonema
Bromeliaceae	<i>Bromelia</i> sp.	Nanas-nanasan
Cactaceae	<i>Opuntia ellisiana</i>	Kaktus
Crassulaceae	<i>Kalanchoe</i> sp.	Cocor bebek
Dracaenaceae	<i>Dracaena angustifolia</i>	Suji
Fabaceae	<i>Arachis pintoi</i>	Kacang hias
Malvaceae	<i>Hibiscus rosasinsensis</i>	Bunga sepatu
Nyctaginaceae	<i>Bougainvillea</i> sp.	Bougenville

Family	Species	Local Name
Oleaceae	<i>Jasminum sambac</i>	Melati
Orchidaceae	<i>Spathoglottis plicata</i>	Anggrek tanah
Piperaceae	<i>Piper bettle</i>	Sirih
Poaceae	<i>Bambusa vulgaris</i>	Bambu kuning
Polypodiaceae	<i>Platyserium bifurcatum</i>	Tanduk rusa
Rosaceae	<i>Rosa Hybrida</i>	Mawar

Inventory result showed that there are 10 ornamental plants species found abundantly along the rural corridor of Kependukuh Village (Figure 4; Table 2). *Cordyline fruticosa* L., *Codiaeum* sp. and *Acalypha siamensis* were found almost in all of the plot observation. Local people in Kependukuh used *Cordyline fruticosa*, *Codiaeum* sp. and *Acalypha siamensis* as a plant barrier of their home.



Figure 4. Ornamental plants in Kependukuh village (a) *Cordyline fruticosa* L.; (b) *Acalypha siamensis*; (c) *Codiaeum* sp.; (d) *Rosa hybrida*; (e) *Plumeria* sp.; (f) *Jatropha curcas* L.; (g) *Hyphorbe lagenicaulis*; (h) *Bougainvillea* sp.; (i) *Zamia variegata*; (j) *Euphorbia mili*.

Table 2. List of ornamental plant species abundantly found along the rural corridor of Kopendukuh Village

No.	Species	Family	Habitus	Freq
1	<i>Cordyline fruticosa</i>	Agavaceae	Shrub	0.8
2	<i>Acalypha siamensis</i>	Euphorbiaceae	Shrub to small tree	0.5
3	<i>Codiaeum sp.</i>	Euphorbiaceae	Shrub to small tree	0.5
4	<i>Rosa hybrida</i>	Rosaceae	Shrub	0.4
5	<i>Plumeria sp.</i>	Apocynaceae	Tree	0.4
6	<i>Jatropha curcas</i>	Euphorbiaceae	Semak	0.4
7	<i>Hyphorbe lagenicaulis</i>	Areaceae	Tree	0.4
8	<i>Bougainvillea sp.</i>	Nyctaginaceae	Shrub	0.4
9	<i>Zamia variegata</i>	Cycadaceae	Shrub	0.3
10	<i>Euphorbia mili</i>	Euphorbiaceae	Shrub	0.3

Rosa hybrida, *Plumeria sp.*, *Jatropha curcas*, *Hyphorbe lagenicaulis*, *Bougainvillea sp.*, *Zamia variegata*, *Euphorbia mili* were planted by local people to improve visual quality of the house.

Villagers in Kopendukuh generally utilize ornamental plants as a hedge plant. Plant is one of the constituent elements of the fence. Plants provide alternative materials as a yards fence of the house. In addition for functioning as a barrier plots or ownership, there are some functions and other benefits from the use of border plants. Border plant has a variety of functions such as increase beauty of a building, as a barrier against dust, pollution and radiation sunlight [10].

Cordyline fruticosa, *Codiaeum sp.* and *Acalypha siamensis* are used by local people as a border plants. These plants are suitable plant for use as fence. Types of border plants are generally annual, have long life cycle or have a long growing age and growth is relatively slow. It is intended that the use of plants can be longer (long life time) so that the plant does not need to be replaced and the pruning is not too frequent [10].

Sociability of Ornamental Plant

Sociability is an overview on the existence of a species in a population, in this case is the existence of ornamental plants that grows in Kopendukuh village. Ornamental plants in this area are known to be found live in condition solitary, small group and large group of population. High degrees of sociability can be seen if the plant has high seed productivity, ability to grow high and great adaptability [11].

Distribution of the ornamental plants in kopendukuh village was found diverse in each plot. Based on data (Fig. 5) there are some plants that live individual or solitarily (1) with percentage 14% there are *R. hybrida*, *Plumeria sp.*, *J. curcas*, *H. lagenicaulis*, *Bougainvillea sp.*, *Z. variegata* and *E. Milli*. About 59% percent of the ornamental plants are living in a small population <50 (Soc 2) were found in each plot, while *A. siamensis* and *Codiaeum sp.* are in large population (>50) can be found only in several plot with percentage 27%.

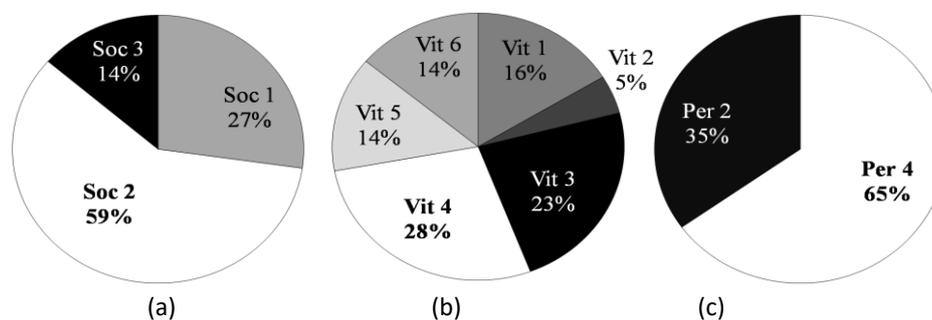


Figure 5. Qualitative analysis percentage of ornamental plants in Kopendukuh village. (a) Sociability; Soc 1 (Individual plant species live solitary), Soc 2 (Individual plant species live in small groups <50), Soc 3 (Individual plant species live in large group >50) (b) Vitality; Vit 1 (Found in the form of shrubs, growing well, and there are shoots or tillers), Vit 2 (Found in the form of shrubs, not growing well, and there are shoots or tillers), Vit 3 (Found in the form of shrubs, growing well, and no shoots or tillers), Vit 4 (Found in the form of shrubs, not growing well, and no shoots or tillers), Vit 5 (Found in the form of a bush, growing well, and there are shoots or tillers), Vit 6 (Found in the form of a bush, not growing well, and there are shoots or tillers) (c) Periodicity; Per 2 (Flowers only), Per 4 (No flowers and seeds were found).

People in Kependukuh village are deliberately cultivated these plant for the aesthetic value and used them as a border plant. For example an ornamental plant *A. siamensis* is found in large population because they were easy to be formed, with design pattern that we want. These ornamental plants also has a vary shape and color leaf so it's very popular as a home garden plants. Thus the ornamental plants can become neat and beautiful for a home garden with aesthetic value.

Based on data in Fig. 5, the percentage of sociability in Kependukuh village was dominated with sociability 2 (59%), an individual species living in small group >50. Sociability of a plant can be influenced by several things, including human impact or contribution and habitat conditions. The existence of ornamental plant communities in Kependukuh village is known to have a diverse distribution pattern and live in small populations due to human influence.

Vitality of Ornamental Plants

Based on the analysis of general vitality can be seen that the populations were widely spread in the homegarden Kependukuh Village is interest *C. fruticosa* L., *A. siamensis* and *Codiaeum* sp. The three types of this flower is easy to grow well in the yard citizens, has habitus shrubs, and have many shoots or tillers in the flower so that the population is in large quantities. According to the interview on the citizens, the plant were obtained from a funeral or found easily in the area of the village so that people feel the plant is easy to cultivate. In addition, many flowering plants are used as ornamental plants are *Plumeria* sp., *R. hybrida*, and *E. milli*. This group of flowering plant belong to trees and shrubs.

Based on the results of vitality diagram (Fig. 5) it can be seen that the highest value is vitality 4 (plants with traits that have habitus trees) as much as 28% is *R. hybrida*, *Plumeria* sp., *H. lagenicaulis*. The second highest is vitality 3 as much as 24 % with categories the plant have habitus bush such as *Cordyline fruticosa* L. , *Zamia variegata*, and *Euphorbia mili*. The plants that was found in general is a plant that can live in tropics and upland areas. Types of the plants were analyzed using the values of vitality and declared that the whole plant have habitus bushes, shrubs, and trees. Some plants have shoots and seeds, but some are not having shoots and seeds. The results of the analysis can be used as an indicator of vitality is to see the

future of plant populations and determine the influence of the environment with plant growth.

Periodicity of Ornamental Plants

Based on a research, there are 10 kinds of plants with the highest frequency of occurrence in each plot. The data is presented in a table that shows the periodicity of each population. The type of *Cordyline fruticosa* L., *Acalypha siamensis*, *Jatropha curcas* L., *Hyphorbe lagenicaulis*, and *Zamia variegata* is an ornamental plant species with a periodicity of 4 that is not found flowers and seeds with a percentage of 65%. While *Rosa Hybrida*, *Plumeria* sp, *Bougainvillea* sp, *Euphorbia milli* with periodicity 2 and found the flowers with a percentage of periodicity 35% (Fig 5.).

Flowering phase in tropical plants started in the dry season but this research was conducted in November 2014 and was beginning the rainy season in East Java Province [12]. In addition, the pattern of flowering in tropical plant species are complex. Variations in climate can make plants more sensitive, for example effects on pollinators, seed pollination agents or predators. Therefore some ornamental plants not found flowering and seed plants.

CONCLUSION

Distribution of ornamental plants are mostly found along rural roads in Kependukuh village is *Euphorbiaceae* with seven species. Method of this research was conducted using qualitative analysis. First analysis is sociability, showed that the highest value was individual species living in small groups (<50). Second analysis was vitality with percentage of 28% (mostly herbaceous plants, can thrive but no buds). Third is periodicity analysis with the highest value is periodicity 4, which means that the plants are found doesn't have flowers and seeds.

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REFERENCES

- [1] Pamungkas, R. N., S. Indriyani and L. Hakim. 2013. The ethnobotany of homegardens along rural corridors as a basis for

- ecotourism planning: a case study of Rajegwesi village, Banyuwangi, Indonesia. *Journal of Biodiversity and Environmental Sciences* 3 (9), 6-69.
- [2] Oktavianti, E., and L. Hakim. 2013. Ethnobotany Home Garden of Homestay in Tambak Sari Tourism Village, Purwodadi, Pasuruan, East Java. *Journal of Indonesian Tourism and Development Studies* 1 (1), 39-45.
- [3] Baud-Bovi M, Lowson F. 2002. *Tourism and Recreation: Handbook of planning and design*. Architectural press, Oxford.
- [4] Hakim L., Nakagoshi N. 2007. Plant species Composition in Home gardens in the Tengger Highland (East Java Indonesia) and its Importance for Regional Ecotourism planning. *Hikobia*. 15, 23-36.
- [5] Pendong, D. F., and Aprijani. 2004. Diversity of Plant Yard in Tomohon, North Sulawesi. *Biosmart* 6 (1).
- [6] Widati, F., and Iteu M. Hidayat. 2012. Vegetable Soybean (*Glycine max* L. Merrill) As Plant Yard. *Horticultural Science* 8.
- [7] Acquaah, G. 2002. *Horticulture-Principles and Practices, Second Edition*. Prentice.
- [8] Backer, C. A. Bakhuizen van den Brink, R. C. 1963. *Flora of Java*. Vol. 1. N.V. P. Noordhoff, Groningen, The Netherlands.
- [9] Mubarok, F. 2012. *Mapping the Distribution and Character of Edelweiss Populations Along The Hiking Trail Ranupani-Kalimati*. Thesis. Department of Biology, University of Brawijaya.
- [10] Werdiningsih, H. 2007. Study of Using Plants as an Alternative Fence Houses. *Enclosure* 6 (1).
- [11] Barbour, M.G., J.H. Burk and W.D. Pitts. 1987. *Terrestrial Plant Ecology*. The Benjamin/Cummings Publishing Company, Inc. California.
- [12] BMKG. 2014. Weather Forecast In Banyuwangi. East Java. http://www.bmkg.go.id/BMKG_Pusat/Informasi_Cuaca/. Accessed December 19th 2014.
- [13] Wikimap. 2014. Map of Banyuwangi, East Java. <http://wikimapia.org/#lang=en&lat=-8.200000&lon=114.370000&z=13&m=b&search=banyuwangi>. November 10th 2014.
- [14] Google Earth. 2003. Map of Banyuwangi, East Java. <https://www.google.com/earth>. November 14th 2014.

Supporting and Inhibiting Factors on the Implementation of the Master Plan Activities in Serayu River Voyage (SRV) Within the Framework of Tourism Development in Banyumas Regency

Imam Pamungkas*, Agus Suryono, Sarwono

Master Program of Public Administration, Faculty of Administrative Sciences, University of Brawijaya, Malang, Indonesia

Abstract

The Master Plan Activity of Serayu River Voyage (SRV) for tourism development in Banyumas Regency were expected to be completed within five years from 2008 to 2012, but during the period until 2013, most programs and activities have not been implemented. The results showed that the Master Plan of SRV in the framework of tourism development in Banyumas Regency has not been implemented properly. The cause is the absence of good coordination between agencies, the lack programs and activities integration, supporting documents have not been revised, absence of good socialization, and the lack of private sector contribution. The factors that constrain and support implementation of the Master Plan is described as follows. Supporting factors: competent human resources (implementor) already available at the managerial level and have intellectual tourism, it is only need to add personnel in the sector of culture; the availability of adequate budget; institutions that have been effective and efficient; High community response; High commitment of Banyumas Regent and cooperation related parties (stakeholders); and natural conditions of Serayu tend to calm and the river slope condition is small. The constrain factors: regulatory policies; integration of programs and activities; coordination and socialization implied sectoral ego that need to be addressed.

Keywords: implementation, master plan, Serayu River Voyage, human resources, regulation

INTRODUCTION

The flow of Serayu River that crosses Banyumas Regency has relative flat topography and mountains with the slope between 15°- 45°. As a flow that has approached upstream region, the presence of Serayu River Dam serves for irrigation, drinking water, river controller, flooding controller, inland fisheries, and recreation. The last function of Serayu River Dam is as a mean of recreation that is very possible to be developed in Banyumas.

Implementing activities on Master Plan of Serayu River Voyage (SRV) in the Framework of Tourism Development in Banyumas is still partial. It was not well structured and implemented by sectoral trend and showed no active role of *stakeholders*. The implementation of SRV Master Plan is expected to be a new tourist destination, but it has not been implemented according to the expectations of society and local government. The assumption occur by causative factors including: lack of coordination between stakeholders in the region, limited human resources, institutional which has not been maximum, and regulations which still need to be revised. There has not been a *redesign* to

accommodate all of the planned activities. It has no environmental documents and the role of the private sector is still lacking.

In accordance with the Indonesian Government Regulation No. 6 of 2006 on the Management of State/Region Property, the utilization of state property in the form of land implemented by the management of goods. The aimed goods manager is the Minister of Finance, because the land belongs to the central government.

According to Hadinoto [1], land in the tourism development program is the most critical resource to be managed. Land with incorrect use can cause damage and great loss for tourism. The use of land gives a creative challenge and it is open to error and loss in tourism development. In the planning and development of a tourism program, planning and use of land could be the most important responsibility. While the evaluation criteria of management regarding the necessity and suitability of land for tourism development includes: location; scenery; environmental suitability; topography; availability; and area that can be used.

The role of land in the management of tourism development is a major factor and act as a priority to be managed, so that the provision and land use should have clear status on the land. While the facilities and infrastructure are:

* Correspondence address:

Imam Pamungkas

Email : imam_pamungkas17@yahoo.co.id

Address : Master Program of Public Administration,

University of Brawijaya, Jl. Veteran. Malang 65145.

airports; terminals; ports; railway stations; telecommu-nications; road network, etc [2].

One of the most important component in tourism activity is the accessibility or the smooth transfer of a person from one place to another; movement at close range, intermediate, and far. Thus it needs transportation tools [3]. Land resources for transportation also becomes an integral part which is needed for good planning of land resource.

Development of land resources also facing the problem lack of harmony between the various interests and various sectors of the economy; which in turn will not support each other. This situation will be worsen again by a careless land resource management system.

Hadinoto [1] stated that aspects included in the conceptual planning stage is the selection of tourism land, the allocation of land use, and super-vision on the land users, as well as its budget.

Fennel in Pitana and Diarta [4] mentioned that the natural resources can be developed into a tourism resource is water. Water holds a very important role in determining the type and level of *outdoor* recreation, could be developed into other type of tourism such as beach/nautical, lakes, rivers, and others (sailing, cruises, fishing, snorkeling).

According to Hakim [5], the term of sustainable tourism is the balance between tourism and economic development, environmental protect-ion. Satisfaction between the two parties (i.e. tourists and local communities) are the main ideas in interpreting sustainable tourism. Hunter in Hakim [5] stated it is easy to discuss sustainability, implementation is the problem. It is frequently appears in the discourse and discussion of sustain-able development, including the tourism industry. Mihalic in Hakim [5] stated that the quality of the environment includes the quality of landscape or natural scenery itself, whose quality may decline due to the activity human beings.

Natural resources such as water and rivers, especially in the Master Plan Activity of Serayu River Voyage (SRV) in Banyumas, can be developed as a tourism resource and tourist destination. The development of natural resources should be balance between economic sectors and environmental protection. It should also always be maintained properly thus the quality will not decline as human activity and tourism itself.

The purpose of the research on the implementation of Master Plan Activity of Serayu River Voyage (SRV) in the framework of tourism development in Banyumas are assessing the contents of the Master Plan Activity of Serayu River Voyage (SRV) which will be implemented, the implementation of the Master Plan Activity of Serayu River Voyage (SRV) and analyze the factors that inhibit and support the implementation of Master Plan Activity Serayu River Voyage (SRV).

RESEARCH METHODS

Research Focus

The study focused on the factors that inhibit and support the implementation of the Master Plan of Activity of Serayu River Voyage (SRV). It includes supporting and inhibiting factors, internal and external.

Research Site

The study located in the Regency of Banyumas, with research site in the Department of Youth, Sport and Tourism of Banyumas and in some Local Work Unit (SKPDs) related to the object of research.

Data Collection

This stage was conducted by getting deeper personal relationships and more harmonious with various respondent/resources; in expectation for getting accurate and relevant data or information. Personal relationships are also useful to grow self-confidence and credibility of the researcher. Persuasive interpersonal communication is also needed especially to get highly sensitive information.

The stage to collect data are interview, observation, and documentation. This study used structured and unstructured interviews to develop things that require in-depth information. Observa-tion were assessed directly in the field through the five senses to the phenomenon of the problem, according to the research focus that has been set.

Documentation conducted by collecting and learning various of documentary information (documents or archive records) related to the Master Plan Activity of Serayu River Voyage (SRV). Documentation used as a reference material and preliminary data in conducting research and interviews. It also a comparison with the information obtained from the field research and interviews. The documentation include: document of Master Plan Activity of

Serayu River Voyage (SRV), the applicable regulations of law such as: laws, government regulations, local regulation, regent regulations and other relevant documents.

RESULTS AND DISCUSSION

Internal Supporting Factors

Competent human resources (implementor)

Availability of human resources support on SRV is already abundance, including NGO Association of Serayu Tourism Society (PMPS), community leaders, artists-humanist and also Tourism Awareness Group (Pokdarwis). In accordance with Edwards III [6], there are factors that have a direct and indirect impact on the failure or success of policy implementation, i.e. *resources*. Resource is in the form of human resources (implementor competence), materials/facilities and financial resources.

Enhancement of human resources at tourism sector need to be facilitated by the Government of Banyumas. The role of government in determining tourism policy is to build and facilitate the improvement of the human resources quality [4,7]. It conducted by ensuring the education and professional training to supply the need for labor in the tourism sector. Human resources in the framework of tourism policy implementation run the concern/awareness of society program [4] that contributes positively to the success of tourism.

Availability of Budget

Regent of Banyumas has expressed a commitment to budgetary policies for activities of SRV. Mill [8] explained that planning process in tourism sector should also consider the planning component that needs fund for the operation. The availability of the budget does not become a serious problem because there is a big commitment from the decision maker for waiting the aspects of legality and licensing.

Institutional

Department of Youth, Sport, Culture and Tourism in Banyumas has pretty good organizational structure, duties and functions. Similar to Wahab [9], the effectiveness of policy implementation need to meet right executor, the implementation actor is government policy, government or private parties as executor (privatization or contract).

Institution is an important factor that have a direct and indirect impact on the failure or success of policy implementation [6], i.e.

bureaucratic structure. Bureaucratic structures as the executant organizational structure has a significant influence on policy implementation.

One important aspects on the structure of each organization is the existence of Standard Operating Procedure (SOP). SOP becomes a guidance for the implementor to act. Organizational structure that occupied too long will tend to weaken supervision and lead to *red-tape*. That is a complicated and complex bureaucratic procedures, which in turn causes the activity of the organization becomes inflexible.

Internal Inhibiting Factors

Regulatory policy

Regulation in the Implementation of Master Plan Activity of SRV such as RPJMD, RIPPDA, and Spatial and Strategic Plan of SKPD has been existed. It is in line with Mill [8] that in the planning process of tourism sector should also consider the planning component, e.g. legal environment, specific laws and regulations for a tourist destination that should be known.

Another theory in the framework of tourism policy implementation, especially regulation and supervision [4]. Things that have to be implemented is building legislation and regulatory mechanisms to encourage the development of tourism. It conducted through the support of national tourism organizations, travel agent, accommodation and other sectors in the tourism.

Meanwhile, the role of government in determining tourism policy is strategic and responsible [4,7]. Government should provide and facilitate the needs of legislation, regulation, and control that are applied in tourism, environmental protection, and preservation of culture and heritage.

External Supporting Factors

Public Response

Activity of SRV in the Framework of Tourism Development in Banyumas has a very good response by the community. The Law No. 25 of 2004 on National Development Planning System (SPPN) mentioned that the purpose and principal function of development planning is to optimize community participation in development planning.

Implementation in framework of tourism policy made a social audit [4] in terms of how the local community, villagers and the surrounding communities affected by the tourism.

Natural conditions and weather factors

Natural conditions and the weather is very supportive as a supporting factor for the activities of SRV. Liu in Pitana and Diarta [4] stated that the conditions and the uniqueness of the environment, flora and fauna is often act as key attraction for tourism. Water resources has a very vital role in supporting the development of tourism.

Policy Makers Commitment

The Regent of Banyumas shows a high commitment to the implementation of the Master Plan Activity of SRV in the Framework of Tourism Development in Banyumas. Darwin [10] explained one aspect that determine the level of public policy implementability is the affected nature of the attraction.

A policy implementation process will lead to a conflict of targeted groups or community. It means there is an open opportunity for the emergence of certain advantaged groups (gainer), while on the other hand implementation of the policy disserves other groups/looser [11]. These commitment of policy makers in local government becomes the factors that support the implementation of the Master Plan Activity of SRV in the Framework of Tourism Development in Banyumas.

Related Parties Cooperation (Stakeholders)

Cooperation with relevant parties in the implementation on the Master Plan Activity of SRV has been existed, although still in initial stage. Cooperation with stakeholders is needed in the implementation of the policy as explained by Mazmanian and Sabatier in Dwijowijoto [11]. The policy's ability to structure the implementation process is hierarchical integration among implementing agencies. Meanwhile, Meter and Horn in Dwijowijoto [11] stated the variable that influences public policy is the implementation and communication activities between organizations. In addition, tourism management requires consultation with all stakeholders [4,7]. The cooperation with related parties (*stakeholders*) is also supporting factors for the implementation of Master Plan Activity of SRV.

External Inhibiting Factors

The integration of programs and activities

Less coherence on the Activity of SRV with other policies needs to be addressed thus the implementation activities of SRV will goes well.

Dwijowijoto [11] mentioned the needs for clear and consistency purpose, accuracy of financial resource allocation and hierarchical integration among implementing agencies. The integration of programs and activities become the factors that inhibit the implementation of the Master Plan Activity of SRV.

Coordination and socialization

Coordination and socialization in the Master Plan Implementation Activity Serayu River Voyage (SRV) is still not good as a result of sectoral ego created among related local government offices.

The constraint is in accordance with the opinion of Darwin [10], which explains that the an aspect that determine the implemental level of public policy is the nature of interest which affected. A process of policy implementation will lead to a conflict of target groups or communities. It means there is an open opportunity for the emergence of certain advantaged groups (gainer), while on the other hand implementation of the policy disserves other groups (looser) [12].

Hoogwood and Gun suggested that the implementation of policies needs necessary conditions of communication and perfect coordination [13]. Communication is the glue of organization, and coordination is the origin of teamwork and synergy formation. The lack of coordination and socialization including factors that inhibit the implementation of Master Plan Activity of SRV.

SWOT Analysis

Strength

- a. Serayu River Voyage (SRV) is potential to develop water recreation, land recreation, cultural recreation, and educational recreation.
- b. The need of green open space as requirements of Serayu River Voyage activity can be maintain.
- c. Accessibility (in the form of a path) to the location of Serayu River Voyage has been well available.
- d. Institutions by the Department of Youth, Sports, Culture and Tourism in Banyumas.
- e. Regulations and policies in the planning of Master Plan, the Regional Regulation, Strategic Planning and Medium Term Development Plan (RPJMD).

Weakness

- a. Low Competent of Human Resources.

*Master Plan Activities in Serayu River Voyage (SRV)
(Pamungkas et al.)*

- b. Potential land in the border/riverbanks of Serayu.
- c. Land for Green Open Space has not been dominated by the Government of Banyumas.
- d. Accessibility to the location still need regular maintenance.
- e. Rules and policies are still not properly implemented.
- f. Different understanding on the rules and policies.

Opportunities

- a. Having cooperation prospect with private parties (investor).
- b. Cooperation of provincial governments and central government.
- c. Land leasing system by Banyumas Regency from Central Government.
- d. Improvement on human resources and procurement of employees
- e. The same perception on rules and policies.

Threats

- a. SRV has risk of flooding and natural disasters.
- b. Need a substantial budget for maintenance.
- c. Threaten ecosystems and environmental damage, especially on the rivers and riverbanks, etc.
- d. Threaten the social and cultural life of society and local knowledge (local wisdom).
- e. The existence of regulation and legislation policies should be evaluated as a supporting activity of Serayu River Voyage (SRV)

RECOMMENDATION

Based on the conclusions, we recommend some of the following:

- 1. The policy for the implementer in the creation of programs and activities that support Serayu River Voyage should meet program targets and activities of SRV.
- 2. Improving the design of tourism cooperation to expand and improve the potential network marketing/promotion of tourism, especially SRV activities in order to develop tourism in Banyumas.
- 3. Improving the policy in the Master Plan Activity of SRV by revising the master plan design completed by coordinate geographic points of SRV activities' location (digital map) and determines the locus of land utilization or the overall need of SRV land.

- 4. Construct environmental document as in the form of Environment Impact Assessment (AMDAL) that includes integrated activities in SRV footprint; in accordance with Regulation of the Minister of Environment No. 5 of 2012, protected areas and tourism areas should have documents on the environment.
- 5. Preparation of Detailed Spatial Plan which contains and sets the space design and space utilization for the Implementation Activity of SRV. Certainty of the law is a reference for each businessmen, tourism stakeholders and public to participate in SRV activities.
- 6. Revision of Regional Tourism Development Master Plan, because it has not been implemented properly and needs to be adjusted to the Regional Regulation on Spatial Planning of Banyumas Region Year 2011-2031.
- 7. Applying for the permission on the use of Serayu River channel and on lands at the edge or border of Serayu River.
- 8. Conceptualization of cooperation pattern with the central government in the utilization and use of land owned by the central government that is located along the banks of Serayu River or in the water border areas. The cooperation could use a lease system.
- 9. The addition of employees with specific competencies with Employment Agreement (P3K) which is suitable with regulation No. 5 of 2014 on Civil Administrative State. Apparatus competencies can be enhanced through various technical training and workshops.
- 10. Implementing publication, socialization, public hearing and promotion through printed, electronic and other information media such as social networking. Socialization and this publication should be conveyed to the bottom of society through public institutions.
- 11. Making data and information systems by establishing data and information systems of tourism integrally to ensure operational continuity and also functioned as market information.
- 12. Increase the budget and determination the priority scale in the Implementation of Master Plan Activity of SRV.
- 13. Priorities determination in the development of Serayu River thus no overlap utilization of river channel on Serayu River Dam.

14. Finalization of the Master Plan Activity of SRV Period 2015 as follows:
 - a. Revision of construction design
 - b. Making environmental document
 - c. Development of roads and infrastructure
 - d. Arrangement of Detailed Spatial Plan
15. Finalization of the Master Plan Activity of SRV Period 2016:
 - a. Licensing on the use of land border and Serayu River channel
 - b. Drafting a pattern of cooperation
 - c. Drafting the revision design of Regional Tourism Development Master Plan
16. Finalization of the Master Plan Activity of SRV Period 2017 includes:
 - a. Physical construction on Phase I of Dock I SRV in the location of Serayu River Dam
 - b. Addition and improvement of human resources in tourism
 - c. Implementation of cooperation design
 - d. Physical Development Phase II Dock I SRV in the location of Serayu River Dam
 - e. Physical Development of Dock II SRV in the Location of Pegalongan Village, Sub-District of Patikraja
17. Finalization of the Master Plan Activity of SRV Period 2018 includes:
 - a. Physical Development of Dock IV SRV in the Location of Petir Village, Sub-District of Patikraja
 - b. Socializations and publications
 - c. Physical Development of Dock III SRV in the Location of Kaliori Village, Sub-district of Kalibagor
 - d. Design travel packages
 - e. Making the system of Regional Tourism on Development Implementation

- [7] WTO. 1980. Social and cultural impact of tourism movement. World Tourism Organization. Madrid.
- [8] Mill, R. C. 2000. Tourism, the international business. Sastrio, T. B. (Transl.). Raja Grafindo Persada. Jakarta.
- [9] Wahab, S. 1992. Tourism Management. Gromang, F. (Transl.). Pradnya Paramita. Jakarta. p. 137-139.
- [10] Darwin. 2002. Good Governance and public policy. Seminar of Realizing Good Governance as State Democracy Agenda. NGO Forum of Yogyakarta Special Region. September 30th 2002, Yogyakarta.
- [11] Dwidjowijoto, R. N. 2006. Public policy for developing country, formulated models, implementation and evaluation. Elex Media Komputindo. Jakarta.
- [12] Dwiyanto, A. 2000. Reform of governance and regional autonomy. Center of Population Studies and Policy. Gadjah Mada University. Yogyakarta.
- [13] Hoogwood and Gunn. 1986. Policy analysis for the real world. Oxford University Press. London.

REFERENCES

- [1] Hadinoto, K. 1996. Development planning of tourism destination. UI-Press. Jakarta. p. 79.
- [2] Yoeti, O.A. 1994. Introduction to tourism knowledge. Angkasa. Bandung.
- [3] Sammeng, A.M. 2001. Tourism horizon. Balai Pustaka. Jakarta.
- [4] Pitana, I G., and Diarta, I K.S. 2009. Introduction to tourism. Andi Publisher. Yogyakarta. 88-114.
- [5] Hakim, L. 2004. Fundamental ecotourism. Bayumedia Publishing. Malang. 11-116.
- [6] Edwards III. 1980. Implementing public policy. Congressional. Quarterly Press, Washington.

Fruit Plants Species along Corridor in Kependukuh Village as a Resource for Rural Tourism Development

Widya Kristiyanti Putri, Abu Naim*, Hendra Setiawan

Master Program of Biology, Faculty of Mathematics and Natural Sciences, University of Brawijaya, Malang, Indonesia

Abstract

This research aims to identify fruit plants species which is potential for tourism attraction, spatially describes fruit plants distribution and identify local people's response for fruit plants as tourism attraction in Kependukuh village, Banyuwangi. Survey was done along the villages corridors. The fruit plant species along corridors was identified and mapped using GPS. Furthermore, semi-structural interview was used to gain informations of local people response about fruit plants as tourism attraction. There were about 18 species and 162 individuals were found along corridor of Kependukuh village. Fruit plants always found in local home gardens along rural corridor. Local peoples argue that fruit plants important for numerous purposes. Local people support tourism development in rural area which based on the fruit plants richness (i.e. agrotourism).

Keywords: fruit plants, mapping, corridor, rural tourism.

INTRODUCTION

Rural tourism is a kind of tourism which has characteristics that signify a rural area; including small settlements, low population densities, agrarian-based economies, and traditional societies [1]. In rural tourism, there are several interesting aspect to become tourism attraction, such as culture, natural landscape, specific flora and fauna which life in their area, etc. One of potential resource for tourism attraction is fruit plants field [2].

Fruit plants in Indonesia have a unique characteristic because it affected by season. In harvest time, fruits field became interesting place to visit because visitors can eat fruit directly from the field. They even can teach their children about fruit plants. Thus, fruit plants as food producer can be used as tourism attraction base on agroecotourism. Tourism attraction base on agroecotourism have some function, not only attraction for tourist but also for conservation tools [3]. Besides that agroecotourism can used as additional income for local people [4].

Export commodity of agriculture was dominated by plantation sector that reach 133.37 billion dollars in 2010 to 2013. Especially in fruit was dominated by mango with growth rate reach 29.56% while the lowest was mangosteen with growth rate 9.49% per year [5]. Fruit plants can be divided in two groups, wild fruit plants and

cultivar fruit plants. Cultivar fruit plants which cultivated in local people field have many variations, consist of native fruit plants and exotic fruit plants.

Banyuwangi is an area with abundant natural tourism attraction. Fruit is important product to support tourism, especially in agrotourism development [2]. Most of fruit plants in local community field in corridor of the village to Ijen Carter is common fruit plant in Indonesia, e.g. manggo (*Mangifera indica* L.), rambutan (*Nephelium lappaecum* L.), manggosteen (*Garcinia mangostana* L.), durian (*Durio zibethinus* Murray), water apple (*Syzygium aquea* (Burm. f) Alston) and guava (*Psidium guajava* L.) etc. [6].

Kependukuh village is very potential for tourism object which base on agroecotourism, using their fruit plants as the attractions. Besides they can make additional income, they can conserve their fruit plants especially their native fruit plants.

Almost every people's field of Kependukuh have their own fruit plants. These fruit plants are very interesting for tourists who pass their village to visit Ijen Carter. Objectives of this reserch are to identify fruit plants species in Kependukuh village which is potential for tourism attraction, mapping distribution of fruit plants in Kependukuh village and to know about the response of local people for fruit plants as tourism attraction.

MATERIALS AND METHODS

The study area was located in the Kependukuh village, Glagah District, Banyuwangi on coordinates of 08°09'47.7"S, 114°17'36,6" E (Fig. 1).

* Correspondence address:

Abu Naim

Email : naimrahmatullah87@gmail.com

Address : Master Program of Biology, University of Brawijaya, Jl. Veteran Malang, 65145

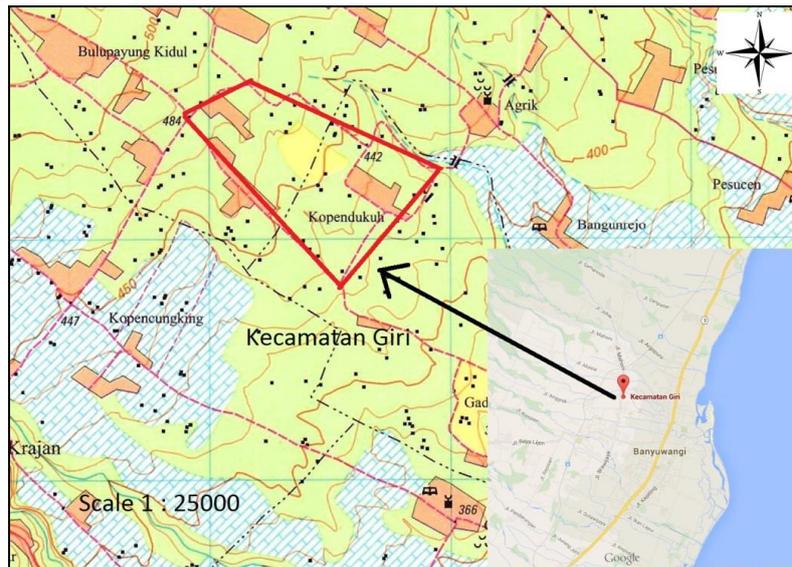


Figure 1. Map of Kependukuh village

It is a corridor which connected to a famous tourism object, Ijen Crater. Most people in Kependukuh village are farmers, who represent people from Banyuwangi Regency [7]. The data of fruit plants was obtained through direct survey method, plant mapping, and plant identification. Data collection was carried out in November 15th, 2014.

Method that use in sampling was researcher appoints key informants then they will recommend some other informants as resource. The informants were the local people who lived for long time in Kependukuh village and have fruit fields. Survey conducted in semi structural interview was expected to be closer to the people which include some information about locations of plants, type of plants, and experience in fruit plant treatment.

The spatial distribution was mapped by GPS. The coverage survey are in range of Fruit Crops discover at a distance of 10 m along right and left side corridor of Kependukuh village. Coordinate data that was obtained by plotting on a map use Quantum GIS (QGIS) 2.4.0 (Chugiak) [8] and overlay with countour map layer from ASTER image GDEM V2 (product of MET land NASA). It is also overlay with a base map of the study area conditions to perform a digitized map with geographical map of Indonesia [9]. Coordinate data that has been plotted processed further using *geoprocessing tools* of QGIS. *Buffers* features are used to determinethe distribution of a species and *intersect* feature was used to determine the distribution of occupied habitat which is shared between each species of fruit

crops. The results of the analysis are then overlaid with other layers to obtain the final result of the zoning map of fruit trees along the corridor in Kependukuh village.

Plant identification was conducted by direct observation. The local and scientific name of plants consider with the growth place was noted. Plant age as the indicator of maturity could become consideration of restoration project. The older plants mean they reserved the area for long time and useful for local people while the younger plants mean they are introduction species or they had been damage and replanted. Measurement of plant age used diameter at breast height (DBH) method. Then the plant can be classified as seedling, sapling, small tree, tree or shrub (Table 1).

Table 1. Age classification of fruit plants

Plant classification	Definition
Seedling	DBH < 7.5 cm
Saplins/Poles	DBH 7.5-24 cm
Small tree	DBH 25-37cm
Tree	DBH > 38 cm
Shrubs	-

Source: Keane [10]

RESULTS AND DISCUSSION

The distribution of fruit plants concentrated to the settlement along rural corridors. Basically, a home garden is loaded in term of fruit species (Fig. 2). This rural road is an alternative track for tourists who want to visit Ijen Crater which located at the west side of this village or for special destination to enjoy the variation fruits.

*Fruit Plants Species along Corridor in Kependukuh Village
(Widya Kristiyanti Putri et al)*

Fruit plants can be found along the corridor in Kependukuh Village. Local people plant it in their yard because it has a lot of function, such as its fruits are edible, its canopy can be use as shade, and its branch can be used as fire wood. Based on observation in fields, local people also sold their fruits in local markets. Scholars point out that the functions of fruits plants for local people yard are numerous, encompasses plants for commercial used, consumption, shade plant, and fire wood [2,11].

Based on the interview, local community has other purposes in growing the fruit plants in home garden, i.e. prevent flooding in rainy season and maintain ground water supply in a dry season. Another function of fruit plant for local people is stabilization of environment quality as land erosion control, biodiversity and reserves carbon. Along corridor in Kependukuh village there were 18 fruit plants species. These species were *Salacca zalacca*, *Nephelium lappaceum*, *Musa x paradisiaca*, *Carica papaya*, *Artocarpus heterophyllus*, *Ananas bracteatus*, *Passiflora edulis*, *Garcinia mangostana*, *Lansium*

parasiticum, *Chrysophyllum cainito*, *Cocos nucifera*, *Citrus x sinensis*, *Psidium guajava*, *Syzygium aquea*, *Durio zibethinus*, *Theobroma cacao*, *Hylocereus costaricensis*, and *Persea americana*.

There were 10 plots with each plot consists of 7 to 12 species of fruits (Fig. 3). Total number of individual fruit plants which found was 162 (Fig. 4). All of these species are common fruits and favor by local community. Most of them can be found in courtyard and backyard of resident's home along the corridor in Kependukuhvillage. Many fruit plants were found in the corridor Kependukuh village because local people still have extensive homegarden around the house. We still found orchards which deliberately made by the local people as a form of economic investment. Ko-pendukuh village is part of Giri Sub-district and smallest population density (29.681 people) in Banyuwangi. The average population density is 279 people per km² [12]. Existence of home garden in corridor was result of low population density in the region.

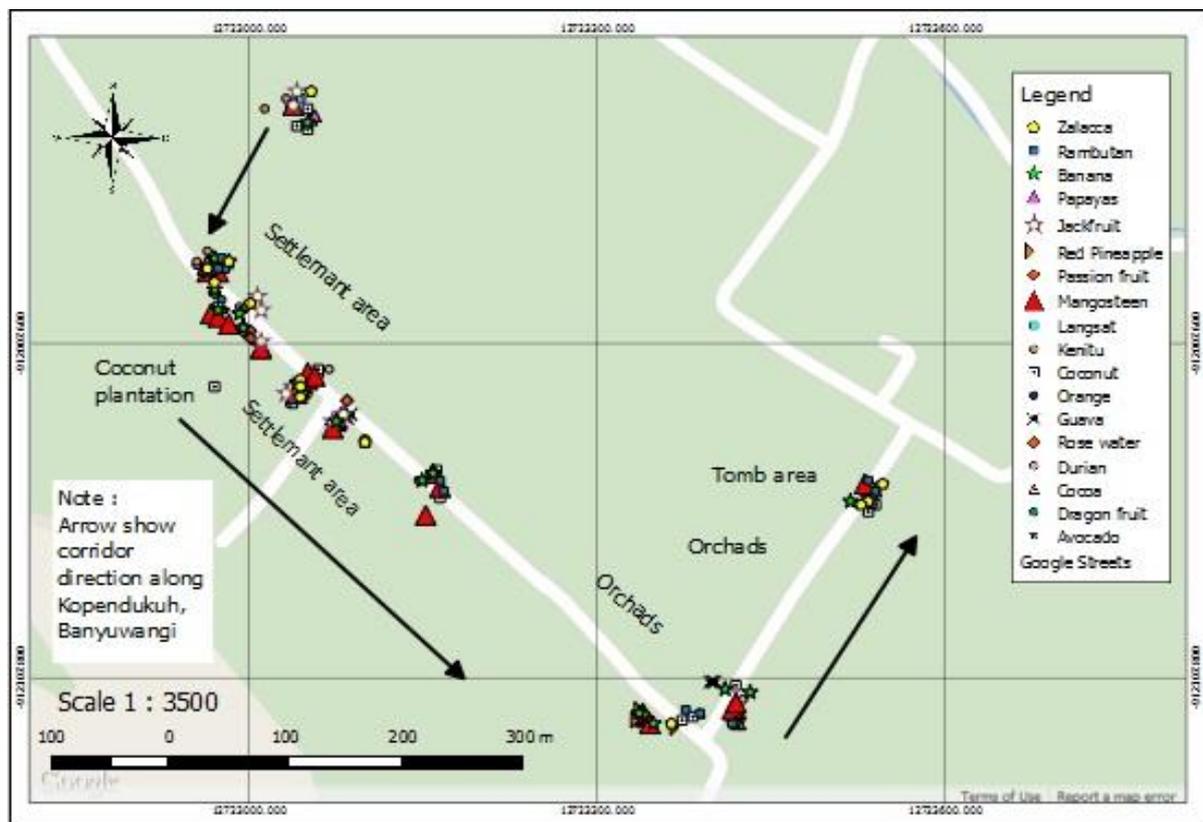


Figure 2. Map of fruit plant's distribution in Kependukuh

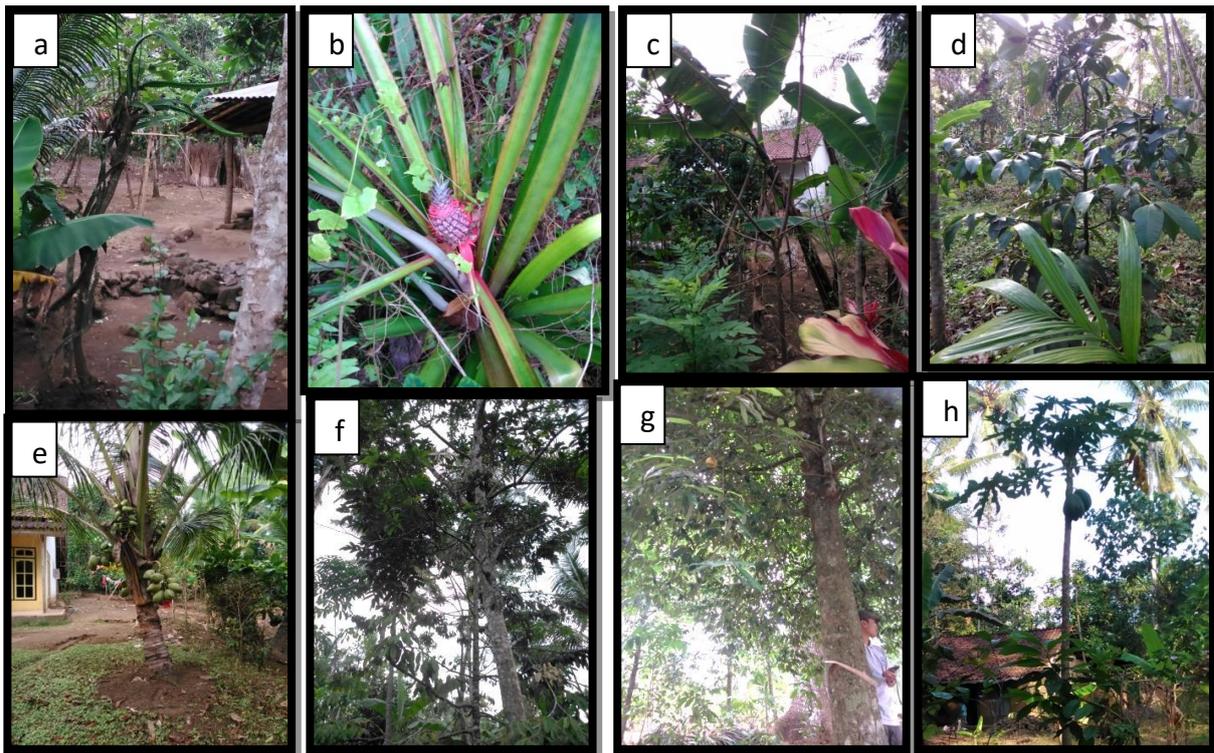


Figure 3. Fruit plants along corridor in Kopendukuh village
(a=Dragon fruit, b=Pinneapple, c=Banana, d=Mangosteen, e=Coconut, f=Durian, g=Kenitu, h=Papaya)

Distribution of fruit plant along the corridor in the Kopendukuh village dominated by seeded fruit plant such as coconut (*C. nucifera*), mangosteen (*G. mangostana*), durian (*D. zibethinus*), papaya (*C. papaya*) and zalacca (*S. zalacca*) (Fig. 2). Not only have high economic value, the fruit plants are suitable with the topography. The topographic is generally highland and has an average slope rate of 40° with an average high rainfall. This condition is very suitable for the growth and development of the fruit crops. Based on DBH measurement, fruit plants that were found along the corridor in Kopendukuh Village categorized as seedlings and trees (Fig. 5). Observation in 10 sites along this corridor got 47 kinds of regenerations and 46 trees. Regeneration was dominated by mangosteen while tree was dominated by coconut.

The highest amount of coconut as tree meaning that coconut was cultivated in this area for long time. Meanwhile, number of mangosteen in sapling showed that this plant cultivated by Kopendukuh local people recently. Coconut and mangosteen have potential as tourism attraction and main commodity of Banyuwangi, East Java. Mangosteen and coconut have been exported routine to Japan and

Thailand. Mangosteen could be exported in 2 containers or equal to 40 ton while coconut export to Thailand in 30 containers per week (1 container=20 ton). These exports have increased in last years.

Based on these maturities, development of fruit plant as tourism attraction in recent day was focused in coconut because it can be used directly, but in future it will focus in mangosteen. According to interview with 15 local people, we found that they gladly support village development for tourism site such as agritourism fruit plants. There were productive fruit plants in their field and backyard (Fig. 6). These fruit were used for their meal, medicine, or commercial need.

As seen in figure 5, mangosteen was grow in almost all field after coconut. This because in 1998 the government program was to make mangosteen as main commodity for export need. We gained information from local people that they can harvest their fruits all years. They never have serious problems such as pests, gulma or less of water like in East Java's field problems generally. They keep their field with natural ways thus safe for their environment. Local people didn't use fertilizer or only use compos fertilizer and never use pesticide (Fig. 7). This method is suitable for one of ecotourism objectives.

*Fruit Plants Species along Corridor in Kependukuh Village
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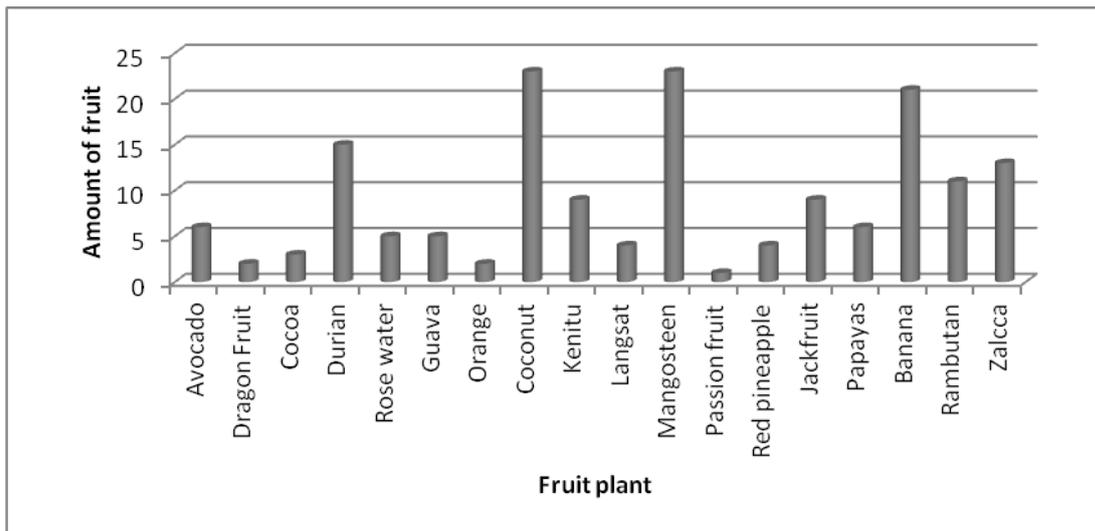


Figure 4. Number of fruit plants found in home gardens along rural corridors

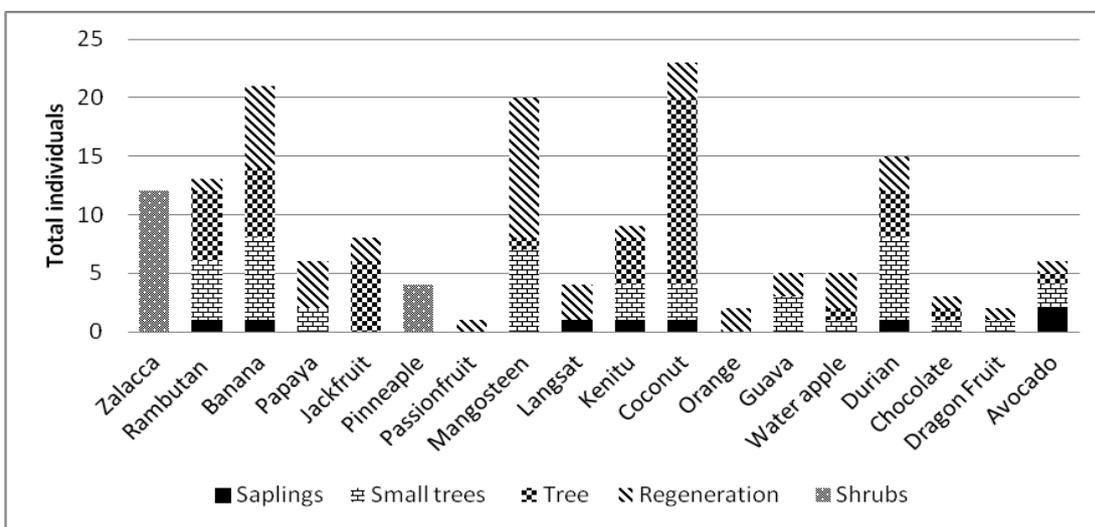


Figure 5. Fruit plants clasification based on DBH in Kependukuh Village

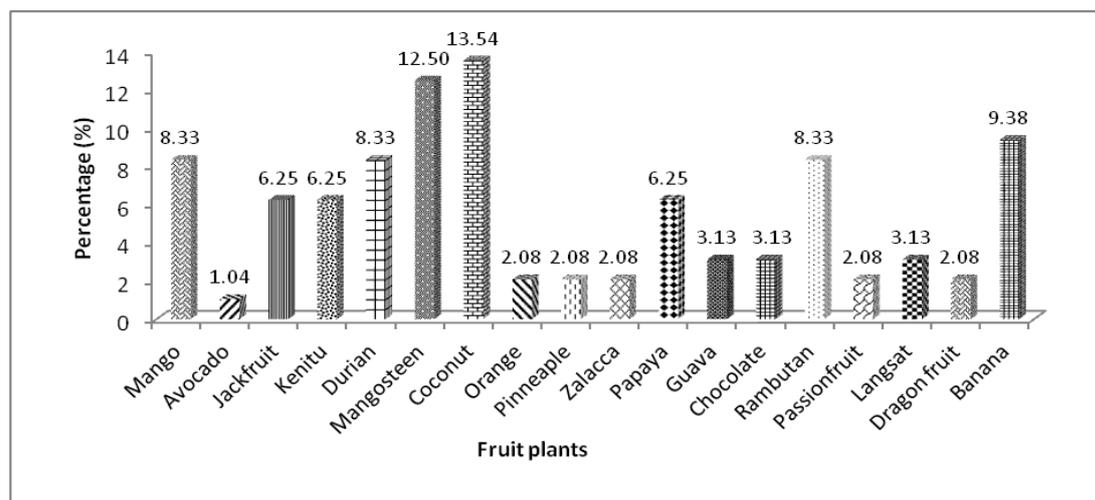


Figure 6. Percentage of fruitplants in respondents' field and backyard (n=15)

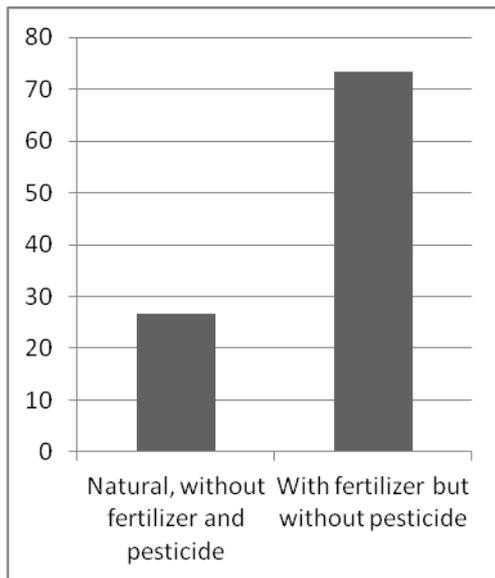


Figure 7. Diagram of treatment method for fruit plant in respondents' field and backyard (n=15)

CONCLUSION

Fruit plants that found in along corridor Kopen dukuh village were zalacca, rambutan, banana, papaya, jackfruit, pineapple, passion fruit, mangosteen, langsung, kenitu, coconut, orange, guava, water apple, durian, chocolate, dragon fruit and avocado. Local people gave positive responses for fruit plants as tourism attraction. Total of 18 species of fruit plants was found in their field and along corridor were treated with natural ways, e.g. without fertilizer and pesticide. This research concluded that plant fruits species along corridor in Kopen dukuh village could become resource for rural tourism development.

REFERENCES

- [1] Okech, R., M. Haghiri, and B.P. George. 2012. Rural tourism as a sustainable development alternative: an analysis with special reference to Luanda, Kenya. *Cultur* 6 (3). www.uesc.br/revistas/Culturaeturismo.
- [2] Hakim, L. 2014. *Ethnobotany of home garden: food security, health and agro-tourism*. Selaras Publisher, Malang.
- [3] Blangy, S., and H. Mehta. 2006. Ecotourism and ecological restoration. *Journal for Nature Conservation* 14, 233–236.
- [4] Stronza, A. 2007. The economic promise of ecotourism for conservation. *Journal of ECO Tourism* 6 (3). DOI: 10.2167/joe177.0.
- [5] Ministry of Agriculture, 2014. *Statistic of exsport-import on agriculture commodity*

- 2001-2013. *Jurnal Statistik Ekspor Impor Komoditas Pertanian*. ISSN: 2337-9578. Directorate General of Processing and Marketing of Agricultural Products. Ministry of Agriculture.
- [6] Zakiyah, Z., S. Indriyani, and L. Hakim. 2013. Pemetaan Sebarandan Karakter Populasi Tanaman Buah di Sepanjang Koridor Jalur Wisata desa Kemiren, Tamansuruh, Dan Kampunganyar, Banyuwangi Regency. *Journal of Indonesian Tourism and Development Studies* 1 (2), 46-51.
- [7] Central Statistic Bureau of Banyuwangi. 2014. Population. <http://banyuwangikab.bps.go.id/>. Accessed November 10th, 2014.
- [8] Quantum GIS Development Team. 2003. *Quantum GIS Geographic Information System*. Open Source Geospatial Foundation Project. <http://qgis.osgeo.org>
- [9] Bakosurtanal (Office of National Coordination and Mapping). 2000. *Digital geographic map of Indonesia*. Sheet 1607-444. First Edition.
- [10] Keane, R. E., 2006. Tree Data (TD) sampling method. USDA Forest Service Gen. Tech. Rep. RMRS-GTR-164-CD. Accessed November 10th, 2014.
- [11] Purnomosidhi, P., S. Roshetko, J.S. Mulawarman. 2002. *Propagation and cultivation of fruits, specifically on durio, mango, orange, Melinjo, and Sawo*. Bogor: ICRAF.
- [12] Central Statistic Bureau of Banyuwangi. 2012. *White book of sanitation in Banyuwangi Regency*. Accessed January 13th, 2014.
- [13] Lukaszkiwicz, J. and M. Kosmala. 2008. Determining the age of streetside trees with diameter at breast height-based Multifactorial Model. *Arboriculture and Urban Forestry* 34(3),137–143.

Diversity of Snakes in Rajegwesi Tourism Area, Meru Betiri National Park

Aji Dharma Raharjo*, Luchman Hakim

Departement of Biology, Faculty of Mathematics and Natural Sciences, University of Brawijaya, Malang, Indonesia

Abstract

Rajegwesi tourism area is one of the significant tourism areas in Meru Betiri National Park, East Java, Indonesia. The area rich in term of biodiversity which are potential for developed as natural tourism attraction. The aim of this study is to identify snakes species diversity and its distribution in Rajegwesi tourism area. Field survey was done in Rajegwesi area, namely swamps forest, residential area, rice fields, agriculture area (*babatan*), resort area, and Plengkang cliff. This study found some snakes, encompasses Colubridae (10 species), Elapidae (four species), and Phytonidae (one species). There are Burmese Python (*Python reticulatus*), Red-necked Keelback (*Rhabdophis subminiatus*), Painted Bronzeback Snake (*Dendrelaphis pictus*), Black Copper Rat Snake (*Coelognathus flavolineatus*), Radiated Rat Snake (*C. radiatus*), Striped Keelback (*Xenochrophis vittatus*), Checkered Keelback (*X. piscator*), Spotted Ground Snake (*Gongyosoma balioderius*), Gold-ringed Cat Snake (*Boiga dendrophila*), Common Wolf Snake (*Lycodon capucinus*), Banded Wolf snake (*L. subcinctus*), Cobra (*Naja sputatrix*), King Cobra (*Ophiophagus hannah*), Malayan Krait (*Bungarus candidus*), and Banded Krait (*B. fasciatus*) was found. These snake habitats distributes at 21 coordinate points.

Keywords: conservation, ecotourism, snakes.

INTRODUCTION

Snakes are legless-carnivorous reptiles living on every continent except Antarctica and can be found in aquatic, arboreal, and terrestrial areas [1]. Snake habitats diversity can be influenced by geographical factors such as climate, altitude, humidity, and other micro-conditions. Snakes are valuable components to their ecology communities; playing several complex roles, included predators and prey, and has an economic value for humans. Every part of the snake usually used by human for culinary, medicinal, pets, and other purposes. The most valuable part of snake are skin (phyton), meat, bile, and fang (cobra) [2]. Because of its value, snakes harvesting for commercial purposes become populer, so this reptile populations become endangered in their natural habitats. Deforestation and land conversion also made some snakes species were extinct [3].

Rajegwesi is one of the nature-based tourism destination areas in Meru Betiri National Park. Administratively, the park located at two regencies, Jember and Banyuwangi, East Java. Coordinated in 8.5333°S, 113.7833°E. It spans across 580 km² of varying topography; including sandy, coastal plains, mangrove swamps, lush rainforests, and highlands of over 1,000 m. Meru

Betiri National Park has several tourism areas; one of them is Rajegwesi, a coastal area. Aim of this study is to identify snakes species distribution along Rajegwesi tourism area.

MATERIALS AND METHODS

Field survey was done at Rajegwesi area of SPTN 1 Sarongan. Field survey was conducted from January to April 2014. The snake habitat survey was focused in resort area, agriculture area (*babatan*), swamps, rice fields, residential area, and Plengkang cliff. We used modified-cruising methods by Branch [4] to explore and observe each of snake habitats. Each area was visited twice a day, 9-12 am and 7-11 pm (GMT +7).

Direct observation was performed by using flashlight, Global Positioning System (GPS), and digital camera for documentation. We used Handbook of Visual and Field Identification of 107 Indonesian Snake [5] for identification. For additional data, interview was performed to national park officers. Questions were addressed to identify the frequencies of respondents (national park staff and local community) to found and see snake, the locations, snake types and morfology descriptions. We processed all geographic data, such as coordinate point of snake habitats, by using GIS (Geographic Information System) combine with Google Earth-based map.

Informants were interviewed (12 men and 1 woman), looking for existence of snake species. Snakes encounter location based on informant

* Correspondence address:

Aji Dharma Raharjo

Email : ajidharma165@gmail.com

Address : Department of Biology, University of Brawijaya,
Jl. Veteran Malang, 65145

are Rajegwesi resort area, agricultur area (Babatan), c) swamp area, d) rice field area, e) residents area, and f) Plengkang cliff area (Figure 1). Resort area are maintained and half area used to tree nursery locations. These tree functioned to maintain the forest condition and it's used as composting training for community.



Figure 1. Snake Habitat due to Informant: a) resort area; b) agriculture area (*Babatan*) ; c) swamp area; d) rice field area; e) residents area; and f) Plengkang Cliff area

RESULTS AND DISCUSSION

Burmese Python found in swamp near the rice fields of human places. It also found in Plengkang cliff area, this place has a rocky ravine conditions directly adjacent to sea. According to the local community, this snake reaches 800 cm long size. *Python reticulatus* life depend on the availability of water, so often found not far from water bodies such as rivers, ponds and swamp. *Python reticulatus* main pray is some small mammals, birds and other reptiles such as lizards. Small snakes eat some frogs, lizards and fish. Large snakes are reported preying on dogs, monkeys, jungle pigs, deer, including a man who 'lost' to place waiting for its prey [6].

Red-necked Keelback found in public area of rice fields and river water area overgrown with bamboo and shrubs. This species found while sunbathing on Luwungan tree. Acording to David and Vogel [7], Red-necked Keelback characteristics is chessboard color in under the scales of dorsal skins. Maximum body length reaches 130 cm at the North, but in parts of Sumatra only reach of 80 cm length. In generally about 60 cm

and mature snake head colored with green stone (dark olive green) on the upper side, with yellow and red light behind to nape [5]. Painted Bronzeback Snake found in the area around Resort office and home garden. This snake characteristics is thin slender, up to about 150 cm long, found on hibiscus plants. Has red tounge with a long tail size, reaching a third of the total body length [7].

Gongyosoma baliodeirus has minim data species. Familiar with limb snake term. This species found in guava tree in home garden surrounded by banana plant and cotton tree. This snake has a maximum length of 50 cm and preys invertebrates, mainly insects and spiders [5].

Gold-ringed Cat Snake found around swamp tree and frequently found in marsh environment because it is easy to find their preys. This snake according to informants (fishermen), has 150 cm length size with black and yellow shade. Black Copper Rat Snake is common name of *Coelognathus flavolineatus*, due to its striped color. This snake was found in coffee plant terrestrial with rice fields, with 100 cm of length. This snake is able to sized up to 180 cm length and most species remain small and only reaches about 120 cm length. Some authors describe this species is able to grow in maximum length up to 200 cm [5].

Radiated Rat Snake (*Coelognathus radiatus*) is one species that is often encountered by the society. This snake's length up to 100 cm, reported by informant when cleaning the livestock cage during this study. Comparing the observation to the identifications book of snakes, same style and habits of Radiated Rat Snake were agreed. These snakes are capable to living in all types of habitats to 1.500 m altitude and can be found at wooded areas, villages and towns [8].

Common Wolf Snake found grass field area adjacent to the rice fields and diurnal. This species can be found at residential areas, plantation areas as well as areas of lowland forest. These snakes are very agile and nimble and have a painful bite [5].

Striped Keelback snake has a small slender body and maximum body length about 50 cm. The main character is white line parallel to the right and left in face to camouflage. Snake found in ditch paddy field. This species found in lowlands with high humidity, especially on the Java Island. This snake preys amphibians and fish [9].

Banded Wolf snake (*Lycodon subcinctus*) found in piles of litter and rice husk. The main character

is slim body shape with about 80 cm length size. Black and white ring-shaped motif, almost same with Malayan Krait or Banded Krait and sometimes that color penetrate the stomach. This genus differentiated by size and style of the head. Spatulate head, dark brown or black, gray or white ventral. Its has short tail but slender and tapered [9].

Cobra found by informants when grassing for cattle during the study. Entong as common name, because the head shape while opening hood-like Entong when it feels threatened. The species has a medium to large body size, stocky, can reach 185 cm of length size, but most only about 13 cm. The head shape larger than neck with a blunt rounded mouth and nostrils large. Eyes of medium size with round eye pupil [10].

King Cobra species found by informant at swipe area directly adjacent with Meru Betiri National Park. Identification by using Field Guide based the shape, characteristics of color and size. Communities knows it as *Entong* snake. Reported that almost 4.8 m length size and up to 12 kg body weight snake have been found at Singapore. Unlike most other snakes, males are longer and larger compared to females [7].

Malayan Krait was found by one of the informants at swamp area adjacent to the beach with 100 cm length size. Informants seen this species at swamps area among piles of dead leaves. Informants easily recognize this snake because of it's striking color and the size is fairly large. According to identification books this species similiar with *Bungarus Candidus*. They have stated slender body with about 100 cm length size from head to tail, and maximum length is about 155 cm [7].

Banded Krait found in the back yard cattle stalls owned by residents. This snake has 150 cm maximum length, very sensitive and prefer to stay away from humans. This snake has triangle-like bodies shaped with sharp angle on top. Striking color with black and white stripes. Black color continued to the side of abdomen. Wide head with black arrows patterns on top, and dull white mouth. Banded Krait snake hunt mainly at night (nocturnal) above the ground (terrestrial), and during the day hiding under a pile of wood or stone [7].

Results in Table 1 indicate type of snakes in the residential area, i.e. *Rhabdophis subminiatus*, *Lycodon capucinus*, *Xenochrophis Piscator*, *Coelognathus flavolineatus*, *Bungarus fasciatus* and *Gonglyosomo balioderius*. In the swamp

areas: *Boiga denropila*, *Bungarus candidus*, *Python reticulatus*, *Coelognathus radiatus*, and *Xenochrophis vittatus*. *Python reticulatus* found at Plengkang Cliff. In the rice fields include *Xenochrophis vittatus* and *X. piscator*. Agriculture area (Babatan) include *Naja sputatrix* and *Ophiophagus hannah*, while in resort area we found *Dendrelaphis Pictus*, *Gonglyosomo balioderius* and *X. piscator*.

Table 1. Preference of Snake Habitat in Rajegwesi

No.	Habitat	Σ Counted Snake
1	Resort area	3
2	Agriculture area (Babatan)	2
3	Swamp area	2
4	Rice field area	5
5	Residential area	7
6	Plengkang Cliff	2

Table 2 shown 13 species in *not threatened category* (Least Concern), 1 spesies in evaluation (Not evaluated) and 1 susceptible species are threatened (Vulnerable). Although there are some snakes in Meru Betiri National Park classified as Least concern, its presence remains necessary to be monitored. Even some species already vulnerable endangered, thus snake habitat in Meru Betiri areas need to be maintains and manages correctly. The snakes conservation status facilitated by national park management in managing the forests. Logging and opened agriculture needs to be monitored to minimize snakes habitat disturbance. Proper management also support Rajegwesi villages development progress and open special tours chances.

Mapping in Figure 2 is a compilation from informant and research explorations. Study area locations includes 6 points, labeled with paddy fields area, agriculture area (*babatan*), swamps area, resorts area, residents area and Plengkang cliff area. Distribution differences of snakes' types were related to the condition of each habitat type. Existing habitat types has its own characteristics that support needs of living snakes, either in the form of cover for protection and easy for obtaining prey. Scrub habitat has a large land closure. Habitat area of open land settlement is humid because there are sources of water. Additionally, amphibian as the prey can be found in these habitats. Abundance prey and cover vegetation, make an ideal habitat for snakes so it is easy to find [11]. Thus rapid changes in ecosystem, resulted in death or living creatures went in search of a more suitable habitat [11].

Table 2. Snake Family distribution in Rajegwesi area

Family	Σ Species	Name	Taxon	IUCN Status
Pythonidae	1	Burmese Python	<i>Python reticulatus</i>	Least Concern
		Cobra	<i>Naja sputatrix</i>	Least Concern
Elapidae	4	Malayan Krait	<i>Bungarus candidus</i>	Least Concern
		Banded Krait	<i>B. fasciatus</i>	Least Concern
		King Cobra	<i>Ophiophagus hannah</i>	Vulnerable
		Red-necked Keelback	<i>Rhabdophis subminiatus</i>	Least Concern
Colubridae	10	Painted Bronzeback Snake	<i>Dendrelaphis Pictus</i>	Least Concern
		Spotted Ground Snake	<i>Gongyosoma balioderius</i>	Least Concern
		Gold-ringed Cat Snake	<i>Boiga dendrophila</i>	Least Concern
		Black Copper Rat Snake	<i>Coelognathus flavolineatus</i>	Least Concern
		Radiated Rat Snake	<i>C. radiatus</i>	Not Evaluated
		Common Wolf Snake	<i>Lycodon capucinus</i>	Least Concern
		Striped Keelback	<i>Xenochrophis vittatus</i>	Least Concern
		Checkered Keelback	<i>X. piscator</i>	Least Concern
		Banded Wolf snake	<i>L. subcinctus</i>	Least Concern



Figure 2. Distribution Map of Snakes in Rajegwesi

CONCLUSION

Based on biological identification, the snakes classified into three family: Colubridae (10 species), Elapidae (four species), and Pythonidae (one species). Snake habitats found in 21 coordinate points.

REFERENCES

- [1] Taylor, B. and M. O'Shea. 2004. The great big books of snakes and reptiles. Hermes House Publications, London, UK.
- [2] Soehartono, T. and A. Mardiatuti. 2003. Pelaksanaan Konvensi CITES di Indonesia. Jakarta: Japan International Cooperation Agency (JICA).
- [3] Supriatna, J. 1995. Ular berbisa di Indonesia. PT. Bhratara Karya Aksara. Jakarta.
- [4] Branch A. 2009. Cruising manual. British Columbia Government. Columbia.
- [5] Marlon, R. 2014. Panduan visual dan identifikasi lapangan (107+ ular Indonesia). Jakarta: PT Indonesia Printer.
- [6] Shine, R., Ambariyanto, P.S. Harlow, Mumpuni. 1998. Ecological traits of commercially harvested water monitors, *varanus salvator*, in northern sumatra. *Wildlife Research* 25, 437-447.
- [7] David, P. and G. Vogel. 1996. The snakes of Sumatra. An annotated checklist and key with natural history. Edition Chimaira. Frankfurt, 148-149.
- [8] McKay, J.L. and R. Lilley. 2012. New distributional records from the Lesser Sundas, Indonesia. *Herpetological Review* 43(1), 109-111.
- [9] Mish, F.C. 2004. Merriam-Webster's collegiate dictionary, 11th Edition. Merriam-Webster. Springfield, Massachusetts.
- [10] O'Shea, M. 2005. Venomous snakes of the world. UK: New Holland Publishers, 94.
- [11] Irwan Z.D. 2007. Prinsip-prinsip ekologi ekosistem, lingkungan, dan upaya pelestariannya. Jakarta: Bumi Aksara.

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FOCUS AND SCOPE

Competitiveness of destinations, products and Indonesian tourism business; Diversification of tourism products; Incentive system of business and investment in tourism; Information, promotion and communication in tourism; Tourism supporting infrastructure; Security and convenience in tourism; Tourism policy; Unique tourism community life (living culture); Local knowledge, traditions, and cultural diversity; Diversity and attractions in ecotourism; Diversity of natural attractions in ecotourism; Pluralistic diversity of ecotourism society; Diversity of ecotourism activities; Hospitality of the local resident; The quality of tourism services; Quality of HR in tourism (Standard, accreditation and competence certification); The market share of tourism and integrated marketing system; Package of tourism attraction; Development of tourism regions; Community based Eco-Tourism.

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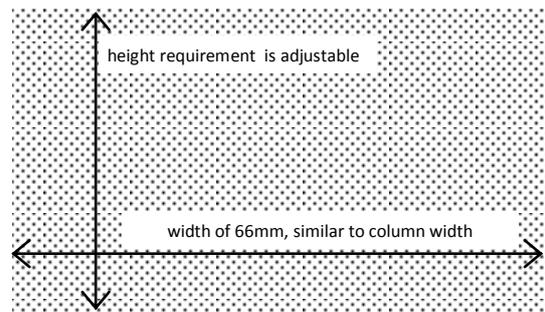


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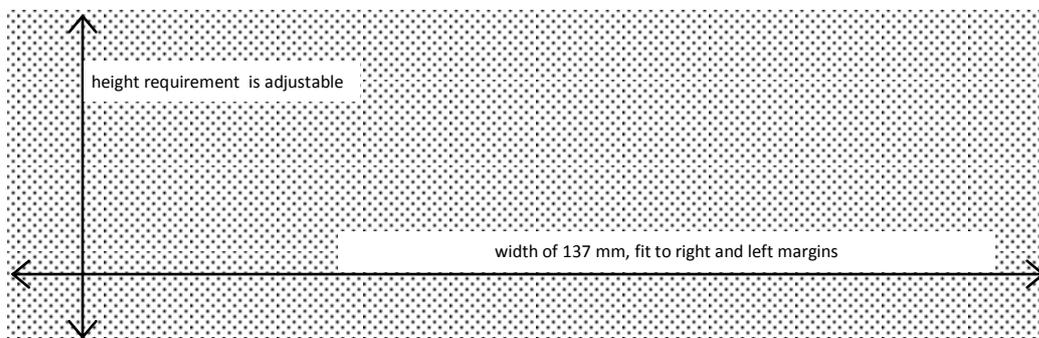


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- [4].Syafi'i, M., Hakim, L., dan Yanuwiyadi, B. 2010. Potential Analysis of Indigenous Knowledge (IK) in Ngadas Village as Tourism Attraction. pp. 217-234. In: Widodo, Y. Noviantari (eds.) Proceed-ing *Basic Science National Seminar 7* Vol.4. Universitas Brawijaya, Malang. (Article within conference proceeding)
- [5].Dean, R.G. 1990. Freak waves: A possible explanation. p. 1-65. In Torum, A., O.T. Gudmestad (eds). Water wave kinetics. CRC Press. New York. (Chapter in a Book)
- [6].Astuti, A.M. 2008. The Effect of Water Fraction of *Stellaria* sp. on the Content of TNF- α in Mice (*Mus musculus* BALB-C). Thesis. Department of Biology. University of Brawijaya. Malang. (Thesis)

CONCLUSION (Calibri 10 Bold, Left, Capslock)

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- [1].(Calibri 10 Justify, citation labelling by references numbering)
- [2].Vander, A., J. Sherman., D. Luciano. 2001. Human Physiology: The Mecanisms of Body Function. McGraw-Hill Higher Education. New York. (Book)
- [3].Shi, Z., M. Rifa'i, Y. Lee, K. Isobe, H. Suzuki. 2007. Importance of CD80/CD86-CD28 interaction in the recognition of target cells by CD8⁺CD122⁺ regulatory T cells. *Journal Immunology*. 124. 1:121-128. (Article in Journal)

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1st floor Building E of Graduate Program, Brawijaya University
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Email: jitode@ub.ac.id
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