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The Floating Market of Lok Baitan, South Kalimantan

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Abstract

Tourism plays an important role in the development of local economic. Tourism has been reported contributes significantly in the local development. Floating market in South Kalimantan has potentiality as tourism attraction, but there are limited study of the value of floating market as tourism attraction. This paper aims to describe the floating market in Lok Baitan, South Kalimantan as a potential attraction for local tourism development. This paper confirm that principally floating market is the integral part of the local people in South Kalimantan, especially who live along Barito rivers. Floating market rich in term of natural and cultural resources that is potential to further development as tourism attractions. There are also numerous possibility to develop tourism programs, ranging from nature based tourism to cultural tourism. In the perspective of tourism development, the community based tourism see to be the significant strategy to develop. Through community based tourism, floating market tourism in Lok Baitan will contribute to the local economi development. From such resources, there are numerous possibility for the development of tourism program and attractions. In such a case, floating market tourism in Lok Baitan should be set up following community based tourism. This will become the key for tourism as a component and strategy for local economic development.

Keywords: community based tourism development, culture preservation, floating market, South Kalimantan.

INTRODUCTION

Tourism is one of the important sectors for local economic development. Throughout the world tourism has been promoted as one of the important instrument to initiate and support local development. The benefits of tourism have been widely reported. In countries where culture and nature abundance, tourism especially has potentiality to be developed to support local development. Tourism also provides significant position to promote area becomes widely known. Tourism is geographically important to promote remote and less known area. Tourism not only flourish and developed in well known area, but it is also occurs in remotes area. Therefore, tourism sector is crucial key for the development area [1,2].

Kalimantan Island is important habitat for tropical biodiversity in the worlds. Kalimantan has been reported as home of numerous tribal communities with its own culture. Recently however, the high value of biodiversity in Kalimantan has been under serious degradation due to anthropogenic factor. Illegal logging, forest fire, environmental degradation, rivers pollution area the important aspect contributes to Kalimantan's biodiversity degradation. Mining occurs in every where and contributes to numerous wildlifes habitat degradation. Naturally, Kalimantan island is home of numerous potential tourism attraction. In such a case, effort to promote Kalimantan's mega biodiversity as a tourism attraction has been initiated in several regions. Many animals and plants has been identified endemic to Kalimantan, and therefore becomes important object for tourism [3]. Local people in Kalimantan are practicing indigenous knowledge to manage natural resources and results numerous unique landscape [4]. In such a case, the potential of cultural landscape is one of the potential aspects in the development of tourism [5].

One of the important tourism attractions which are found only in Kalimantan is floating market. Floating market is originally in the traditional trading system of people around Barito Rivers. The culture which is related to rivers lead market in the rivers is common and accessible for people. These have been occurring for a long time in South Kalimantan. Floating market is become tradition among Banjarese, a local people along Barito River. In Kalimntan Island, among five provinces in Kalimantan, floating market only found in South Kalimantan. The floating market at Lok Baitan North Kalimantan has long history as a part of the Banjerese life along Barito Rivers [6].

Women are the main participant in floating market systems. Women dominated traders in the floating market rivers. They come from numerous villages along Barito Rivers to sell numerous agricultural products, such as

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vegetables, fruits and spices. Banjarese sellers in floating market using single small traditional boat called *Jukung*. Activity usually started in early morning. Modern facility was absence and all market activity was supported by traditional equipment. Previous study point out several difference aspect of floating market compared to the modern market in South Kalimantan [6]. Physically, there are no physical buildings in floating market, but in traditional market there are physical buildings to facilitate trading activity. The traditional market is dirty and there are few opportunities to be developed as tourism attraction, but floating marker has its unique aspect which area able to be developed as tourism attraction. In traditional market, market open in the morning to noon, but floating market opens at the morning.

Lok Baitan floating market located at Lok Baitan Village in Sungai Tabuk Sub-district in Banjarese Regency, South Kalimantan. The market has been knows as one of the Banjerese cultur in human-economic activity. The aim of the paper is describes the floating market of Lok Baitan, South Kaliman and its potentiality as tourism attractions. Focus of discussion was to describe the natural and cultural aspect of floating market at Lok Baitan.

RESOURCES OF LOK BAITAN FLOATING MARKET

Natural resources

River is the important aspect among Banjarese along Barito River. Rivers is one of the landscapes's component which are important in human movement. In the absence of road, rivers is the important media for local people transportation [7]. History of intensive uses of rivers in Kalimantan related to the past poor provincial development. The modern era of South Kalimantan comes after the independency of Indonesia from Dutch colonization era. Compared to the Java Island, the development of infrastructure in Kalimantan Island in the first era of Indonesia as new freedon countries was poor. The initial development of public infrastructure in Kalimantan has been started at the fifteen century, where South Kalimantan still under monarchy system. In the early establishment of Indonesia, south Kalimantan declared as part of the Indonesia. The initial development has been initiate in the early of independent era, but because human resources and funding for development was limited, infrastructure development was less implemented. In such situation, rivers plays an important role for local people movement.

In the modern era of South Kalimantan, the uses of rives has been widely recognized important. Rives still plays an important roles in numerous industrial activity in South Kalimantan. The recent development program of road and infrastructure in Kalimantan cannot replace the position of rivers as a media for human movement. It is particularly import in the remotes area in south Kalimantan, where infrastructure is impossible to build. South Kalimantan has abundance rivers ecosystems which are important in people daily life. Rivers has become the integral part of local people in Kalimantan and therefore it is important to separate rives and people in the recent modern development era in South Kalimantan. It is especially can be observed in floating market (Fig.1), where traditional market in barito Rivers occurs in the modern era [8].

Numerous commodities was sold in floating market, most of them are local fruit and vegetables (Fig. 2). It is representing the diversity of fruit and vegetables from agricultural land and home gardens of remotes area in South Kalimantan. Natural attractions that can be enjoyed around the village are encompasses the view of the village along the river, the view of the village along the village road and small rivers that divided the village. These natural resources need to be conserved integrally, especially to ensure the sustainability of natural resources [9].

Figure 1. The activity of floating market in Lok Baitan, South Kalimantan

Figure 2. Numerous commodity was sold in Lok baitan floating market

Cultural Resources

Culture is an important part of human life. In Indonesia, it is estimated about 300 tribal community life throughout archipelago, from Sabang in the West to Merauke in the east. The diversity of local culture in Indonesia is a potential resources for tourism development.

Social interaction, visiting the neighbors by rowing through the river from one house to another house, cooking together, participating and enjoyingng traditional cultural activity are the among potential cultural attraction for culture-based tourism development. According to scholar, culture is the important capitals for tourism destination [10]. Banjarese daily life system and culture are also potential to develop as tourism potential attractions.

Culinary richness is one of the representative of cultural richness, especially in managing resources and preparing foods. Banjarese rich in term of culinary due to the support of diversity of spices, herbs, vegetate and fruit. Many of them are endemic. Local people in South Kalimantan has ability to recognize and prepare numerous material to becomes specific menu which are differs to the other menu in Indonesia. This cultural richness is one of the important aspect for future culture-based tourism in South Kalimantan, including culinary tourism inside the programs [11].

PROGRAMS ATTRACTIONS

Tourism program and activity is the crucial component of tourism. In such a case, therefore, inventorying and assessing tourism attraction was considered important. In Lok Baitan floating market, basically tourism attraction can be classified into natural and cultural tourism potential attraction. These can be important resources for tourism development [12].

The activity on Lok Baintan floating market starts around 5 am in the morning until 12 pm in the afternoon. The number of traders in the floating market is uncertain, it depends on the available commodities that they want to be sold. Mostly the commodities are sold come from their own plantation crops. Numerous tourism programs and activity can be developed. Tourists can enjoy the scenery of natural big river, the settlements alongside the river that describes the life of the local people with the river culture. Besides watching trading activity between the traders and the customers, tourists can also enjoy the sensation of eating on the jukung or kelotok and the tourists are also allowed to row the jukung themselves like the traders do (Table 1).

Banjarese is rich in term of culinary which are a potential to be developed in culinary tourism. Banjarese traditional food is including *lontong banjar*, *nasi kuning*, *mie habang*, *soto banjar*, *nasi sop* and *masak habang*. Banjarese traditional cakes are *babongko*, *gaguduh*, *apam*, and *kokoleh* (Fig. 3). Local fruit can only be found and enjoyed only on its harvesting time. These can be managed to enrich floating market tourism in South Kalimantan [11].

Figure 3. Diversity of traditional cake sold in Lok Baitan Floating market

Table 1. The spectrum of tourism in Lok Baitan area and the potential activity to be developed and integrated in floating market development

Tourism Category	Activity
✓ Nature-based tourism	✓ Enjoying the scenery
✓ Cultural tourism	✓ Enjoying the trading activity of the local people along the river
✓ Culinary tourism	✓ fishing and enjoying the traditional food
✓ Edutourism	✓ Seeing and enjoying the local settlement (house on stilts) alongside the river
✓ Ecotourism	✓ Enjoying the traditional life of the local people ✓ Enjoying the local people activity alongside the river ✓ Enjoying to row down the river by using traditional boat (*jukung*) ✓ Learning about history ✓ Enjoying the scenery and the crop from the local plantation by picking the crop from the trees ✓ Learning how to plan the seed and interact with the local people

COMMUNITY-BASED TOURISM

The participation of local people in tourism development recently received a lot of attention among scholars. There are numerous benefits of community based tourism. Community based tourism enhance the local economy development. The community based tourism open new windows for the development of remotes area. Many countries has been implemented community based tourism as a strategy for tourism development which able to increase and enhance local economic development [13].

As far, the evidence of community based tourism in Lok Baitan floating market was absent. Visitor come to floating market usually are in short time, following the operational times of floating market. This occurs due to the absence of tourism programs. The environment of tourism and hospitality among Banjarese along Barito Rivers was absent due to the long absent of tourism program, especially community development program in tourism.

Several aspect can be supported to meet sustainable and community based tourism in Lok Baitan Villages. For instance, the villagers' houses can also provide as a home stay for the tourists who want to stay and feel and interact directly with the local people. Problems related to the integration of settlement into tourism facility related to the quality of house, especially its health environment and sanitation. As far the health quality was poor and need to be improved. The local government should be able to changes the local people perspective to manage environment and promotes tourism as ne economic prospect. Therefore, it is the challenges and opportunities for stakeholder and local government to establish community based tourism program in Lok Baitan. In many area where sustainable tourism implemented, the involvement of local government and stakeholder was crucial [13].

CONCLUSION

It is clear that floating market in South Kalimantan is one of the potential tourism attractions. There are two important resources for tourism attraction, namely natural and cultural resources. The management of both resources was important and should be draft integratively and supported by regulation which area issued by provincial and regency levels. The development of floating market in Lok Baitan, therefore, should be implemented following sustainable development principles. From the richness of natural and cultural resources, there are opportunities for the development of numerous tourism program. In such a case, involving local community was important. The community based tourism is one of the strategy tourism development in Lok Baitan.

REFERENCES

[1] Sharma, K. K. 2004. Tourism and regional development. Sarup and Sons. New Delhi.

[2] Koens, J.F., C. Dieperink, and M. Miranda. 2009. Ecotourism as a development strategy: experiences from Costa Rica. Journal of Environment, Development and Sustainability 11(6), 1225-1237.

[3] Fuller, D. O., T. C. Jessup, and A. Salim. 2004. Loss of forest cover in Kalimantan, Indonesia, since the 1997–1998 El Nino. Conservation Biology 18(1), 249-254.

[4] Rahu, A. A., K. Hidayat, M. Ariyadi, and L. Hakim. 2014. Management of Kaleka (traditional gardens) in Dayak community in Kapuas, Central Kalimantan. International Journal of Science and Research 3(3), 205-210.

[5] Hakim, L., J. E. Kim, and S. K. Hong. 2009. Cultural landscape and ecotourism in Bali Island, Indonesia. Journal of Ecology and Environment 32(1), 1-8.

[6] Rahmini, N., M. Pudjihardjo, A. Hoetoro, and A. Manzilati. 2015. The role of bonding, bridging and linking at traditional markets in Indonesia: a study at Lok Baintan floating market Banjar Regency South Kalimantan. Journal of Apllied Economic and Bussiness 3(3), 76-88.

[7] MacKinnon, K. 1996. The ecology of Kalimantan Vol. 3. Oxford University Press.

[8] Dudgeon, D. 2000. The ecology of tropical Asian rivers and streams in relation to biodiversity conservation. Annual Review of Ecology and Systematics, 239-263.

[9] Margules, C., S. Sarkar, and C. R. Margules. 2007. Systematic conservation planning. Cambridge University Press.

[10] Kirshenblatt-Gimblett, B. 1998. Destination culture: Tourism, museums, and heritage. University of California Press.

[11] Long, L. M. 1998. Culinary tourism 55(3). University Press of Kentucky.

[12] Inskeep, E. 1991. Tourism planning: an integrated and sustainable development approach. Van Nostrand Reinhold.

[13] Russell, P. 2000. Community-based tourism. Travel and Tourism Analyst 5, 89-116.

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City Branding Strategy on the Evaluation of Tourism Destination Problems in Rural Area
(Evidence from Pasuruan City, Indonesia)

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Abstract

This research find the essential problems of tourism destinations in rural area in Pasuruan City, Indonesia. Based on the phenomenology method and using an open questionnaire, researcher make a deep interview with manager of 10 tourism destinations in Pasuruan city relating with their condition. All of the tourism destinations sample in this research represent four tourism destinations categories includes natural, cultural, agricultural and special destinations. In general the essential problems was meet by most of the tourism destinations are poor management system, unspesific additional facilities, and no innovative marketing strategy. In the evaluation of this problems, city branding strategy is offered to cover a comprehensive solution. The main dimensions of city branding strategy for this problems are green space branding, identifiable image and positive brand experience.

Keywords: City Branding, Rural Area, Tourism Destinations.

INTRODUCTION

Tourism is the essential sector to improve economic condition in certain region. However, tourism should be integrated with other sectors to work together in order providing good supplement facilities such as qualified hotel, good transportation and positive government regulation. Place marketing and the development of destination brands has become strategic tools all over the world due to a growing competition among destinations [1]. Indonesia as one of the most popular destination has a particular report relating tourism contribution in national foreign exchange that gaining to US$ 10 billion in 2014 [2]. The finding of previous research also describes that tourism sector gives a significant contribution for economic development such as increasing job opportunities, regional income and foreign exchange, and the equality of economic development [3]. Parallel to these conditions, Indonesian government tried to introduce tourism destination through decentralized strategy which giving an authority to province government managing their region.

Based on Indonesia Government Law No. 23 of 2014, it is described that each aoutonomy region has the authority to manage their activities in order to achieve economic welfare. In that case, most of the tourism destination in Indonesia is managed by province or state government.

In general, each destination are located in different area such as urban area and rural area which different catergorized such as natural destination and also modern destination. Most of the cities in Indonesia are categorized as urban area that second only to the rural area. Around three of five Indonesia citizen stay in rural area [4]. Therefore this research concern about developing tourism destination in Indonesia particularly in rural area. Rural area refer to the the certain area having low population and consist of the citizen doing an agriculture business. Rural area is also defined as a geographic area that is located outside cities and towns [5].

This research conducted an observation of tourism destination in Pasuruan city which is one of the rural areas in East Java, Indonesia that consisting of 24 subdistrict and 341 villages. In Pasuruan city, most of the citizens are farming (33.98%), and then followed by industrial, tourism, and others sector with respective figures of 24.69%, 17.79% and 23.54% [6]. There are some tourism destinations in Pasuruan that categorized as popular destination in Indonesia such as Mount Bromo, Safari Indonesia Zoo, and Kaliandra Sejati and also unpopular destination such as Kakek Bodo Waterfall, Jawi Temple, Banyu Biru Natural Water Park, and so on. Mount Bromo is one of the popular destination in Indonesia visited more than 550,000 visitor in 2014 from Indonesia and overseas. However, another destination such as Jawi Temple is visited only around 15 people each day.

The contradictive condition among tourism destinations in one city indicates unappropriate

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city branding in that area. Some of the researcher mentions that city branding has similar concept of place branding. Despite destination branding, the government has to consider about their city reputation. More and more towns, cities, regions, and countries are investing in branding campaigns in order to establish a reputation for themselves, and to have a competitive edge in today's global market [7]. Place branding concentrates on creating a brand management system focused on the identity [8], and distinctive and definitive characteristics [9] of a particular place [10]. To sum up, this research has an intention to explore the fundamental problem of tourism destinations in Pasuruan city and also provide the city branding strategy based on research object condition.

THE IMPORTANCE OF BRANDING IN TOURISM DESTINATION

Branding as the potential strategy to improve popularity of tourism destination was introduced in 1998 by Annual Conference of Travel and Tourism Research Association. Every destination must be preparing the destination brand in which defined by the name, symbol, logo, word mark or other graphic that both identifies and differentiates the destination [11]. The proper branding strategy significantly contribute to the popularity of host destination as the unique destination [12]. The core of destination branding is to build a positive destination image that identifies and differentiates the destination by selecting a consistent brand element mix [13]. Destination branding can be defined as a way to communicate a destination's unique identity by differentiating a destination from its competitors [14]. Previous studies argue that brand identity and brand image are critical ingredients for a successful destination [13,15,16]. The image of a place is also an important asset. It emphasized that the image itself is the beginning point of tourist's expectation, which is eventually a determinant of tourist behaviors [17]. Destination image is a critical stimulus in motivating the tourist [13]. It is likely to be a critical element in destination choice process, irrespective of whether the image is truly representative of what a place has to offer or not [18]. Previous study also explained that image building is the former step, but there still remains a critical later step: the brand identity [13]. Consistent brand elements reinforce each other and serve to unify the entire process of image formation and building, which in turn contributes to the strength and uniqueness of brand identity.

THE IMPORTANCE OF CITY BRANDING

The essential function of city branding is undoubtable having more advantage for related city. In order to build city branding, it is needed to create a positive brand of each destination in that area. Its proven by some countries such as Australia, Brazil, Argentina and Spain have been apply place branding strategy. The destination brand building concept has not only been limited to the countries; it has also taken place in the different regions and cities [1]. The increasing number of visitor and boardening tourism destination have been influenced by the successful of branding destination [19]. Comprehensive definition of a place brand a network of associations in the consumer's mind based on the visual, verbal, and behavioral expression of a place, which is embodied through the aims, communication, values, and the general culture of the place's stakeholders and the overall place design [20]. To manage place branding strategy, it needs good collaboration among stakeholders such as consumers (local people, employees of local organizations and targeted visitors), primary services (services at the heart of the core brand, for example, retailers, hotels and events), secondary services (brand infrastructure relationships) and the media (marketing communication channels advertising, publicity and public relations and organic channels arts and education) [21].

MATERIAL AND METHODS

Research Method

This research used qualitative method based on the phenomenology approach in order to explore the phenomenon in tourism destinations. Open questionnaire was used to get a comprehensive information from respondents relating competitive advantage and problems in each destination. The open questionaire is distributed to the manager and staff of 10 tourism destinations in Pasuruan city including Kakek Bodho Waterfall, Banyu Biru Natural Water Park, Bakti Alam Forest and Agriculture, Jawi Temple, Kaliandra Sejati, Grave of Mbah Semendhi, Cheng Hoo Mosque, Ranugrati Lake, Taman Dayu Water Park, and Baung Mountain. Tourism destinations in Pasuruan city consist of natural destination, city destination, religion destination, artificial or special destination, agricultural destination, culture destination and festival destination [22].

All of this research object represent all of the related categories. This research also captured the facilities in each destinations. This research was conducted in 2013 for 6 months (July to December).

Research object

This part describes about the brief history of each destination in Pasuruan city as a part of this research object's. Brief description of the tourism destination in Pasuruan showed in Table 1.

Table 1. Brief Description of Tourism Destinations in Pasuruan City, Indonesia

No	Tourism Destination	Brief Description
1.	Kakek Bodho Waterfall	Kakek Bodho waterfall is established in 1980 by local government in Pasuruan, Indonesia. This destination become a part of heritage destination because there is fenomenal story of this waterfall. Based on the local people story, in colonize era of Dutch in Indonesia there is a wisdom and patient person that known as Kakek Bodho. Kakek Bodho is a servant of Dutch family retiring to get a simple life and leave the happy thing in the world such as a monk life. He meditate in remote area and help the people in surronding area. When Kakek Bodho died, in the near of his grave is found a waterfall as the blessing for local people. Therefore, Kakek Bodho waterfall save a attractive history for local people and visitors. There are around 30-50 visitor in weekdays and 200 visitors in weekend.
2.	Banyu Biru Natural Water Park	Banyu biru natural water park has been establish since the collonial era (before 1930s) and some of the artifact was found such as Ganesha statue and Betara Siwa statue as the symbol of Gods in Hindu's relegion. Pasuruan government renovates this destination to encourage more visitors. This detination has a deep historical background for Pasuruan citizen. Therefore, this destination is managed under the government department.
3.	Bhakti Alam Forest and Agriculture	Bhakti alam forest and agriculture is one of the agricultural destinations that consist of tropical fruit plantation, animal husbandry, green house, camping ground and others natural facilities. This destination becomes the prefe-rences of some school in East Java to conduct their training program for students.
4.	Jawi Temple	Jawi Temple is the heritage of Singhasari Kingdom are hold in 13th century. In former, people guess that this place is a Buddhist's monastery or Hindu's temple, but the scientist conclude that this is a burial of King's Kertanegara (the last King of Singhasari).
5.	Kaliandra Sejati	Kaliandra Sejati is one of the international tourism destination in Pasuruan city, because there are always international visitor in each seasion. Similar with other natural destination, Kaliandra Sejati provides camping facilities based on international standard. Kaliandra Sejati was established at April 1997 by Kaliandra Foundation. Some of the program arranged in this object such as conservation of local plant, preservation of local environment and culture.
6.	Grave of Mbah Semendhi	Mbah Semendhi is the prominent figure of Islam in Java that originally comes from Banten, West Java, Indonesia. For Moslem people, his grave is really important especially for the history of Islam development in Indo-nesia. The number of visitors are among 200-300 people in weekdays and 3000-5000 people in weekend.
7.	Cheng Hoo Mosque	Cheng Hoo Mosque is one of the beautiful mosque in Indonesia because of the unique architecture of its. This mosque is inspired by prominent figure of Islam that orriginally comes from China, Captain Cheng Ho. Captain Cheng Ho take an expedition to Indonesia in 1404 –1443 and achor to Pandaan. This mosque use a fully chinese architectured.
8.	Ranugrati Lake	Ranugrati is a lake that have a historical story for Indonesian people. Ranugrati have a large area around 1,085 Ha and the only one lake in Indonesia that take in lowland. Based on the history, Ranugrati is created by Begawan Nyampo that angry to the local people killing his son Baru Klinting.
9.	Taman Dayu Water Park	Taman Dayu water park was established by Ciputra.Co as one of the facilities in their property land. However, this object also become a public destination for Pasuruan people. In Taman Dayu water park there are some attractive facilities for outbond adventure.
10.	Baung Mountain	In this mountain, there are several object that can be visited such as Baung waterfall and camping facilities. Visitor can get some benefit when enjoy this object such as education, research and development, and cultivation.

RESULTS AND DISCUSSION

This research identified several critical problems impeding the development of tourims destinations based on four categories (natural destination, cultural and religion destinations, agricultural destinations and special destinations) in rural area such as Pasuruan City, Indonesia describing as follows.

Natural Destinations

Natural tourism destinations in Pasuruan city is the potential object for tourism industries, because its have a wonderful landscape alike another similar destination in Batu city, East Java. However, it meets some critical problems con-straining the development of related destinations in this categories as follow as:

- There are no spesific facilities to support natural tourism destinations.

  In the natural destinations, it should be prepared relating facilities for natural ad-venture such as camping ground, outbond facilities and so on. For instance, Kakek Bodho waterfall provides a complicated facilities that combining artificial facilities and natural facilities. In this case, some of the artificial facilities tend to damage the attractiveness of original destination. The management of Kakek Bodho waterfall pro-vides another artificial swimming pool and playground to attract children, but this condition tend broke brand positioning of this object.

  If it is compared with Coban Rondo waterfall in Batu city, there are a significant differences between them. Coban Rondo waterfall is one of the popular destinations in Indonesia having international visitors be-cause its has a suitable additional facilities such as camping ground and outbound facilities. Management of Coban Rondo destination tries to enhance good brand positioning of their object.
- There are no innovative strategy in their marketing programs.

  Most of the natural destinations in Pasuruan city use government website as the only one media to promote their desti-nation. The basic reason of this condition is all of tourism management under the go-vernment department. They do not have an innitiative to broaden their marketing media. Therefore, the number of visitor in these destination is too low compared to another natural destination in other area in Indonesia.
- There are no comprehensive facilities in some of the natural destinations such as appropriate parking area and canteen. These facilities become an important consideration when someone visit a certain tourism destinations.

Cultural and Religion Destinations

Most of the tourism destinations in cultural and religion categories is heritage destination such as historical temple and grave of prominent figure in the past. In this case, these destinations become a media to learn about culture in the previous era and remember the contribution of prominent people. Some of the cultural and religion destination get a positive attention not only from local people in Pasuruan but also their visitor because they believe its destination is holy place. Therefore, they want to maintain these destinations voluntary. For instance Grave of Mbah Semendhi is one of the religion destination getting a positive attention from all people.

In other case, some of the destination did not get the similar respond and tend to forgotten by local people and visitors. Some of the visitor destroy the statue in temple and not concern about maintenance. It is ironical condition. Therefore, there are a different problem bet-ween cultural destination and religion desti-nation describing in this part. The critical problem in cultural destinations in Pasuruan city as follow as:

1. Lack of maintenance for heritage destionation (temple) from government and visitors effecting the small number of visitors. For instance in Jawi Temple, there are only 10 to 15 visitors each day.
2. Most of the cultural destinations in Pasuruan city only have a few marketing promotion media to introduce their destinations such as twitter and facebook page. In fact, some of the media did not update for long time and only have a few information regarding the object. It is unattractive promotion strategy. Therefore, most of the visitors in some of the Pasuruan's temple comes from a local people knowing the place from their parent.
3. There are no specific management structure in the most of the cultural

destinations. In addition, some of the destination only consist of 2 people as cleaning service employee and security employee. Therefore there are some suggestion from desti-nation's management toward government policy because they do not have repre-sentative of management.

Some of the critical problems also meet by religion tourism destinations, but it is a different problems compared to cultural destinations. It is described as follow as:

1. Most of the management team in religion destination reject the collaboration offer from their local government because they do not want to commercialize the object. They believe that religion activities should not become commercialization, eventhough government of Pasuruan city want to renovate this object based on national standard. In this case, there is untrust feeling of management team toward government policy.
2. There are no management structure managing this object. Its only have rest area for visitors after visit the grave. Management of this destionation does not have a detail future development program.
3. Most of the religion destinations in Pasuruan city only use word of mouth as their marketing media to promote their object. They tend to ignore another promotion media.

Agricultural Destinations

Agricultural tourism destination in Pasuruan city are potential destination in Indonesia because there are a lot of attractive agriculture in this city. Most of the agricultural tourism desti-nation in Pasuruan targeted for family object. Its already have a good management system, but some of the problems still exist such as:

1. Lack of potential human resource for the position of mantaining agriculture field.
2. The are no qualified road to the location of tourism destinations. For instance, the con-dition of the road to the location of Bhakti Alam agricultural destination is really dang-erous because too many hole among of them.

Special Destinations

Most of the special tourism destinations in Pasuruan city are managed by private company. They have a good management system and structure. They also provide continuous im-provement program in order to develop their tourism product and service. For instance, Kaliandra Sejati produce enzym product to do therapy treatment for the customer. Kaliandra adopt this innovation from Japanese technology. However, there are some problem that have to concern with management and local govern-ment, such as:

1. The government did not provide a good road to the location of the object. Therefore, the foundation has to make their own qualified road to attract their customer eventhough using their own budget and only several kilometers from the destination.
2. Lack of communication between management and government regarding developing program of special tourism destinations. Therefore some of the special tourism destinations not promoted yet in government website.

CITY BRANDING STRATEGY

There are many research that describe about city branding criteria to develop the popularity of the city. For instance, city branding model focus on city brand attributes, which are social bonds, business opportunities, safety, cultural activities, shopping, clean environment, nature, transport, and government services [23]. In other hand, there are mainly three approaches for promoting cities: cultural mega events, restoration and promoting heritage and the construction of iconic buildings [21,24]. In this study, city branding strategy will be offer based on the tourism destination problems in the rural area in Indonesia.

Green Space Branding

Some of the popular cities in the world have been adopt the green space branding strategy, especially in the Europe continent. Europe's Green Capital Award is a specific award for the most green city which granted by the European Union on an annual base [25]. Green in marketing science reflect to environmental policy and biophysical dimension. The environmental policy dimension concern for pollution control, reduced carbon dioxide output and limited resource consumption [26]. The biophysical di-

mension of green celebrates the green space component of cities, highlighting the important role of urban vegetation in securing a high quality of life [27]. Based on this study, Pasuruan city as the rural area in Indonesia must create these specific activities such as:

a. Government provide a hybrid public trans-portation that having a direct access to the hotel in the city.

   Therefore, domestic and international tourist can use this transportation to go to tourism destination in the city. This hybrid public transportation collaborate with local hotel and also local or national travel agent to make a complete tour program through-out tourism destinations in Pasuruan city. This program have a purpose to introduce some of the unpopular tourism destinations in Pasuruan city to the tourist.

b. Government provide a wonderful and green city park in the several area with eco and clean concept to improve the air quality in the city.

   Eventhough Pasuruan have several ma-nufactures, but they must maintain the quality of environment. The number of people that concern about green concept is significantly increase year to year. Therefore this society prefer to choose the tourism destinations having a good environment.

c. Government provide a good access road not only surrounded tourism destination but also all of the area in the city.

   This facilities will attract tourist to visit more places in the city such as souvernir shop and cullinary destination in the city. In this case, government can develop the local business in that area.

Indentifiable Image

When Hankinson [21] describe about construction of iconic building to promote cities, it is indicated that the city must perform the indentifiable image. These strategy is appopriate to solve the unspecific facilities problem of natural destination in Pasuruan city. Pasuruan City as the rural area in East Java has characteristic as the natural tourism city because it has many natural tourism destinations. Some of the natural destinations in Pasuruan city did not have spesific facilities conducted with the origin object. In order to strengthen the destination image, government can collaborate with tourism destination management to create a new concept of destination, particularly focus on the originality of destination object. For instance, the natural tourism destinations such as Kakek Bodho waterfall has to focus on strengtening the object. Kakek Bodho waterfall should provide the additional facilities such as outbond facilities, the adventure program, camping program and so on relating with enjoy the natural landscape. For the others destination has also to provide the suitable additional facilities such as build a museum in Jawi Temple area to attract more tourist visit that destination. Museum not only the education media but also can strengtening the heritage destination.

Brand Experience

Creating positive brand experience is one of the key success factor to attract revisiting of tourist. Government as the third parties in this industry can create a certain program collaborating among management of tourism destinations, hotels and travel agents. This program as called as city tour which create a comprehensive tourism program such as visiting natural destination, cultural destinations, special destinations and agricultural destinations. The purpose of this program is to develop all of the tourism destinations in Pasuruan City including hotel industries and travel agents industries. Regarding the transportation, travel agent can collaborate with local government using the hybird transportation vehicle. Comprehensive city tour program will increase a positive experience of tourist and encourage them to give positive recommendation to other parties to visit Pasuruan city. Tourism destinations management and government also have to provide an innovative marketing strategy such as creating the own website and active information about their object.

CONCLUSION

Based on this research, we found some of the critical problems in Pasuruan's tourism destination including: (1) there are no specific support facilities in natural tourism destination; (2) there are no innovative marketing strategy to introduce tourism destination; and also (3) lack of communication between management and local government in order to manage related tourism destinations. The main strategy to evaluate these problems are city branding strategy which is focus on green space branding, identifiable image

and brand experience. The green space branding strategy consist of providing hybrid transportation, green city park and good access road. In addition, identifiable image could be created through promoting originality of tourism object. Furthermore, positive brand experience of local and international tourist can be build by comprehensive city tour program.

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REFERENCES

[1] Gracia, J. A., M. Gomez and A. Molina. 2012. A destination branding model: an empirical analysis based on stakeholders. Tourism Management 33, 646-661.
[2] BPS. 2015. Indonesia in Figure, 2015. Center of Statistic. Jakarta.
[3] Mathieson, A. and G. Wall. 1982. Tourism: economic, physical, and social impacts. Longman House. New York.
[4] Ifad. 2015. Investing in rural people in Indonesia. International Fund for Agricultural Development. Available at: ifad.org.
[5] Roberts, L. and D. Hall. 2001. Rural tourism and recreation: principles to practice. CABI publishing.
[6] Pasuruankab. 2014. Gambaran umum. Government of Pasuruan Regency. Available at: pasuruankab.go.id.
[7] Anholt, S. 2010. Places: identity, image and reputation. Palgrave MacMillan. Houndmills.
[8] Freire, J. R. 2005. Geo-branding, are we talking nonsense? a theoretical reflection on brands applied to places. Place Branding 1(4), 347–362.
[9] Zhang, L. and S. X. Zhao. 2009. City branding and the Olympic effect: a case study of Beijing. Cities 26(5), 245–254.
[10] Sevin, H. E. 2014. Understanding cities through city brands: city branding as a social and semantic network. Cities 38, 47-56.
[11] Ritchie, B. J. R. and R. J. B. Ritchie. 1998. The branding of tourism destinations: past achievements and future challenges. Paper of Annual Congress of the International Association of Scientific Experts in Tourism, Destination Marketing: Scopes and Limitations.
[12] Esu, B. B. and V. M. Arrey. 2009. Branding cultural festival as a destination attraction: a case study of Calabar Carnival Festival. International Business Research 2(3),182-192.
[13] Cai, L. A. 2002. Cooperative branding for rural destinations. Annals of Tourism Research 29(3), 720-742.
[14] Morrison, A. and D. Anderson, 2002. Destination branding. Available at: http://www.macvb.org/intranet/presentation/DestinationBrandingLOzarks6-10-02.ppt.
[15] Florek, M., A. Insch and J. Gnoth. 2006. City council websites as a means of place brand identity communication. Place Branding 2(4), 276e296.
[16] Nandan, S. 2005. An exploration of the brand identity-brand image linkage: a communications perspective. Brand Management 12(4), 264e278.
[17] Ryan, C. and H. Gu. 2008. Destination branding and marketing: the role of marketing organizations. In: Oh, H. (Ed.). Handbook of hospitality marketing management. Butterworth-Heinemann. Oxford. 383e411.
[18] Um, S. and J. Crompton. 1990. Attitude determinants in tourism destination choice. Annals of Tourism Research 17(3), 432e448.
[19] Pike, S. 2005. Tourism destination branding complexity. Journal of Product and Brand Management 14(4), 258e259.
[20] Zenker, S. and E. Braun. 2010. Towards an integrated approach for place brand management. Paper of 50th European Regional Science Association Congress. Jönköping, Sweden.
[21] Hankinson, G. 2006. The management of destination brands: five guiding principles based on recent developments in corporate branding theory. Brand Mangagement 14(3), 240-254.
[22] Tourism and Cultural Department of Pasuruan City. 2015. Info wisata. Available at: disbudpar.pasuruankab.go.id.
[23] Merrilees, B., D. Miller, C. Herington. 2009. Antecedents of residents' city brand attitudes. Journal of Business Research 62(3), 362–367.
[24] Kavaratzis, M. 2005. Branding the city through culture and entertainement. AESOP 05, Vienna.
[25] European Green Capital Award. 2012. Available at: http://www.hamburg.de/content

blob/1251348/data/10-green-capital-eu-broschuere-en.pdf.

[26] Kahn, M. 2006. Green cities: urban growth and the environment. Brookings Institution Press, Washington, D.C.

[27] Beatley, T. 2011. Biophilic cities: integrating nature into urban design and planning. Island Press. Washington, D.C.

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Tourist Object in Tomohon City as a Basic Consideration for Tourism Destination Development in Highland Ecosystem

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Abstract

Tourism potential attraction identification is the crucial aspect in tourism destination planning and development. Tomohon in North Sulawesi rich in term of tourism attraction, but tourism development is limited. Based on the tourism potential identification, Tomohon has numerous natural and potential attractions. The highland environments of Tomohon contributes significantly in natural tourism object. Tourism potential distributes in all area of Tomohon city with north Tomohon as centre of tourism destination. Natural resources of Tomohon should be managed in sustainable manner following sustainable principles.

Keywords: agrotourism, mountain tourism, sustainable tourism, tourism data.

INTRODUCTION

Tourism is becoming important in Indonesia. Tourism development in Indonesia can play a strategic role in national development and may be designated to provides new opportunities of jobs and reduce poverty. Tourism has the potential to create support for local economic development. The most important characteristic of Indonesia tourism product is the unique cultural and natural attractions. Indonesia archipelago is home is the numerous tropical biodiversity. Indonesia has numerous tribal communities with its unique traditional value and knowledge to manage natural resources. This has important consequences in tourism development [1,2,3].

Most countries involved in tourism industry have some development planning, including compilation of basic data of natural and cultural tourism object. Tourism resources identification is the ultimate aspect to sustainable tourism destinations, especially in area where tourism and conservation occurs. Basically, information on the natural and cultural resources should be available in the first steps of tourism destination planning. A significant contribution of preliminary survey of tourism resources has been its benefits in planning process. Preliminary survey produces a variety of basic data that are important for destination planning and product development [4].

Tourism in North Sulawesi is important sector for regional development and environmental conservation. Integrating tourism in cultural preservation and biodiversity conservation is important for tourism development in North Sulawesi. There is numerous tourism attraction in North Sulawesi which are important for local economic development. Tomohon city in North Sulawesi is one of the centre of tourism attraction [5,6,7]. According to statistical data, tourist grows significantly. Domestic tourist at 2010 was recorded about 23,832. Number of tourism in crease in 2011 (30,576 domestic tourist) and in 2012 (54,311 domestic tourist). In 2013, about 126,597 domestic tourist was recorded visit Tomohon. Number of international tourist was recorded about 3,954 in 2010 and 4,872 in 2011. These number increase about 5,434 in 2012 and 13,534 in 2013. The economic contribution of tourism was reported significant [8]. The statistical data of tourist arrivals shows that tourism sectors is one of the potential economic earning in Tomohon. Located at the highland environment, Tomohon offer spectacular landscapes which are crucial in tourism destination development. Highland landscapes is the driver of the tourism grows in Tomohon area and factors of the expansion of tourism accommodation development. The aims of the paper is to describes the potentiality of tourism object of Tomohon city in North Sulawesi.

DIVERSITY OF POTENTIAL TOURIST ATTRACTION

Tomohon city located at highland region in North Sulawesi province. Together with Lake Tondano, the area of Tomohon and Tondano has been declared as national strategic area for tourism development (locally KSPN Tomohon-Tondano) (Fig.1). Geographically, Tomohon

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located at latitute 01°18'51" and longitude 124°49'40". Administratively, Tomohon city covers an area about 147.21 km^2. The city located at 400-1500 asl with temperature ranges from 18°C to 30°C. The rainfall was about 291.04 mm/month and the average of humidity was recorded about 90.67% [8].

Tomohon area rich in term of tourism object. As far, some important tourism destination has been mentioned visited by tourist (Fig.2). These destinations are described below.

1. *Lake Linow*

Lake Linow is one of the potential lake for tourism activity in Tomohon city. Lake Linow has been considered as one of the unique lakes because the existence of active sulfur holes in the periphery of lake. Sulfur contributes significantly to the lake color which are visually very attractive and beautiful as tourism attraction. Lake Linow has been visited by both domestic and international tourist. Accessibility is consi-dered easy, and some tourist facility in lake Linow has established to enhance tourist satisfaction in lake Linow.

2. *Bukit Doa*

Bukit Doa, or Kelong Hill, Prayer Hill of Tomohon is one of the important sites for religious tourism in Tomohon. Kelong hills located at the slope of Mt. Mahawu with beautiful highland panorama. In some points along road to Bukit Doa there are special sites for religious tourism, including Chapel of Mother Mary, The Grotto of Mother Mary, Mahawu Cave and Amphitheater to facilitate religious-based activity. Bukit Doa is special religious sites among Christians community in North Sulawesi. Bukit Doa is a religious tourist icon and religious tourist symbol for people in North Sulawesi.

3. *Mount Mahawu*

Mt. Mahawu is potential tourism desti-nation for mountaineering and special inte-rest tourism development. Mt. Mahawu is important habitat for numerous plant tree species such as *Ficus celebensis*, *Pinanga* sp, *Sauraria minahasae*, *Pinanga caesia*, and *Pigafeta filiaris*. This mountains is also habitat for animals such as wild boar and bird species, i.e. Scalybreast kingfisher and Mountain tailorbirds. There are also Crimson-crowned Flower peckers, Sooty-headed bulbuls and Grey-sided Flower peckers were found in Mt. Mahawu [9]. Mt. Mahawu is important habitat for numerous biodiversity, and therefore tourism program and development in Mt. Mahawu should be designed following sustainable tourism principles.

4. *Rurukan*

Rurukan is very famous village with spectacular highland panorama. Highland environment offer spectacular panorama and cool climates which are preferred by tourist. There are agrotourism program in Rurukan. Flower and vegetables are the important instrument of tourism attraction in Rurukan villages.

Tomohon flower festival is one of the important tourism events in Sulawesi. The local government of Tomohon very active to promotes Tomohon as tourism destination. Every August, there are special events called Tomohon Flower Festival which area implemented as a tourism attraction and promotion.

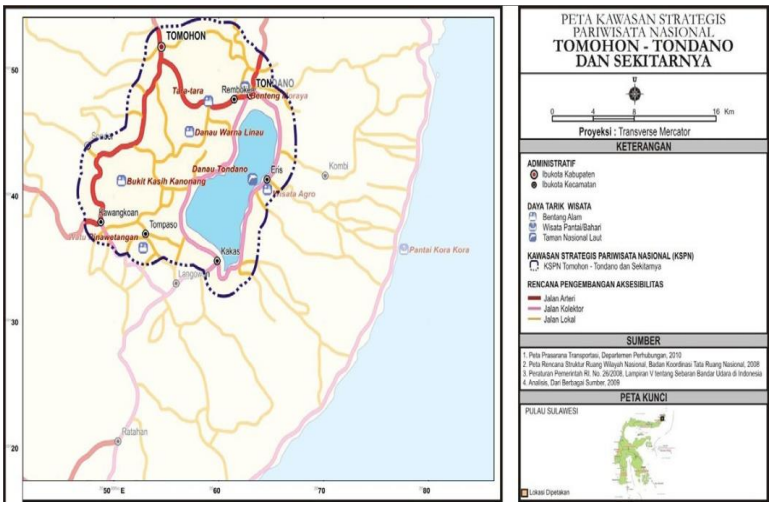

Figure 1. The Geographic Position of National Strategic Area for Tourism Development of Tomohon-Tonado (KSPN Tomohon-Tondano)

Figure 2. Some Natural Tourist Object in Tomohon.
A= Bukit Doa (www.indonesia-tourism.com)
B= Wawo walian Hills (http://amazingtomohon.com)
C= Lake Linow (anekanusantara.blogspot.com)

SPATIAL DISTRIBUTION OF ATTRACTION

Tourism potential object distributes in five regency of Tomohon, namely North Tomohon, South Tomohon, central Tomohon, East Tomohon, and West Tomohon (Table 1). North Tomohon has the highest number of tourism attraction, ranging from natural, cultural and religious tourism attractions.

There are however, some interesting villages for tourism development. Rural area of Tomohon city, namely Rurukan, Kakaskasen II, Kinilow, Pinaras and Lahendong that has been reported as potential sites for tourism. These areas varies in topography, ranging from flat to slopes lands. These area principally dominated by agricultural lands.

Rurukan village

Rurukan village located at East Tomohon sub district that has been known as the highland destination to enjoy mountains landscapes. In some point, visitors can see highland landscape with Mt. Mahawu, Temboan Hills and Tintingon peak. There are also panorama of the crater of Mt. Mahawu and Mt. Lokon. Bunaken islands easily observed from some sites in Rurukan Villages. Visitor also can see Lake Tondano with agricultural lands.

Kinilow

This village was known as centre of bamboo crafting. There are some tourist home-stay with standard facility and beautiful panorama. Kinilow village has potential beauty landscape for further tourism attraction development.

Kakaskasen II

Kakaskasen II villages administratively belong to North Tomohon sub district. This villages was known as flower village and sites for trekking to Mt. Lokon. Trek to Mt. Lokon can be said spectacular, with beautiful panorama. In agricultural lands, local people manipulate sloping upland. Rapid development of agriculture and the uses of chemical fertilizer in this area has been considered as one of the important aspect for unsustainable farming. There has been a major increase in the agricultural area with intensification farming.

Pinaras

Administratively, Pinaras Village belong to the South Tomohon sub district. There are numerous attraction in Pinaras villages, including hot water and water fall. The Pinaras water fall was estimated has 70 m in high, and the accessibility to the waterfall was easy. The distance of waterfall from Tomohon city was about 7 km. This waterfall is one of the favourites tourist destination in Tomohon.

Lahendomg Village

Lahendomg villages belong to South Tomohon sub regency. There is numerous nature based attraction in Lahendong villages, including Lake Linow. There are pines plantations in Lahendong which is potential to develop as camping ground and other nature-based activity.

Table 1. The Distribution of Natural and Cultural Attraction of Tourism in Tomohon

NORTH TOMOHON	SOUTH TOMOHON	CENTRAL TOMOHON	EAST TOMOHON	WEST TOMOHON
Nature	***Nature***	***Cultural***	***Nature***	***Nature***
1. Mt. Lokon	1. Mt. Lokon	1. Opo Tololiu statue	1. Rurukan rural tourism	1. Industri Rumah Tradisional
2. Regesan water fall	2. Lake Linow	2. Wood craft industry	2. Peak of Temboan - Rurukan	2. Waruga-waruga
3. Indraloka pool	3. Pine forest	3. Duct colonial building monument	3. Arboretum Mt. Masarang in Paslaten II and Rurukan	3. Amphitheater
4. Lupa Lelah Hills	4. Hot water pool Lahendong	4. Waruga	4. Susuripen Cave-Rurukan	4. Walanda water spring
5. Korompis Wewengkang botanic garden	5. Lake Tampusu	***Religious***	5. Mt. Mahawu, Rurukan	***Cultural***
6. Opo Worang Monument	6. Tumimperas waterfall	1. Sion church	***Cultural***	1. Mahzani
7. Inspirasi hills	7. Wawo hils	2. Hati Kudus church	1. Beriman traditional market	2. Maengket dance
8. Flower market	***Religious***		2. Maengket dance	
9. Craft industry	1. Nurul Iman mosque			
Religious	***Cultural***			
1. Seminary Catholic "St. Fransiskus Xaverius"	1. Maengket dance			
2. Pagoda	2. Masarang Palm sugar factory			
3. Vihara "Surya Dharma"	3. Bamboo music			
4. Vihara "Buddhayana"	4. Waruga			
5. Bukit Doa Mahawu				
Cultural				
1. Maengket dance				
2. Bamboo Music				
3. *Mahzani*				
4. *Kadera* stone				
5. *Waruga*				
6. *Sumanti* stone				
7. Tumotowa stone				
8. Pasuwengen stone				

Another potential villages for tourism development is encompasses Tondangow Village with white hills as tourism attraction, Pangolombian with Lake Limaney as tourist attraction, Woloan with traditional woody building industry as tourism attractions, Kayawu and Taratara with wide paddy terrace landscapes as tourist attractions. As far, there are few development policy in such villages to become competitive and sustainable tourism development. In perspective of local economic development, there are potentialities for the potential attraction development which are able to meets local economic development strategies. Scholars point out that this aspect is important [10,11].

IMPLICATION FOR DESTINATION DEVELOPMENT

Different object require different approach and models of development. The development of Tourism in Tomohon provides significant example for the harmonious development between economic and environmental conservation in highland environment. Located at highland environment, the development of natural resources for tourism should be done in sustainable manner. In the perspective of regional hydrological cycle, Tomohon is important for water resources catchment area for the lowland area, i.e. Manado city. Therefore, Tomohon is important ecosystem in regional hydrological process. Rapid land uses changes in Tomohon provide significant negative impact to regional water cycle. With the decreasing of vegetation in highland ecosystem through rapid settlement and agricultural development, considerable amount of water are potentially loss [12]. The spatial development of tourism in tomohon therefore needs he basic consideration of hydrological aspect.

It is recommended that the regional planner and local government should have a proper integrated management plan. Local government is responsible for planning the space and natural resources in sustainable manner. Natural tourism object can be very sensitive. Numerous flora and fauna and fragile species. In the recent years, an enormous amount of research and literature in tourism has been produced on the important

issues of environmental management in tourism destinations. Maintaining and conserving biodiversity is considered important to the success of tourism industry. In North Sulawesi, the local governments usually has legal authority and management contributions over most recreation forest, lakes and fragile landscapes [6].

The second issues related to the tourism destination development in Tomohon are related to the local people. Tourism development in Tomohon should be able to provides new opportunities for jobs and other local economic-based activity. Scholars point out that tourism development should be able to provides positive impact to local community, both social and economical aspect. In many case, however, there are example of the ittle contribution of tourism to local community [11]. This is become significant point of local government of Tomohon to increase local people involvement in tourism destination management.

Sustainable tourism stresses the important of balance between economy, ecology and social aspect in tourism destination. In such a case, the integrated management is important to deliver actions towards sustainable development. Process of the development of each aspect are continual, integrated and holistic. Tourism stakeholders, especially businessman, typically vary in their belief, reasons and background to the tourism development. One important implication is the sustainable balance among economy, social and environments is related to the communication. Stakeholder in Tohohon city need to be involved in any stages of destination planning, development and monitoring. It is especially important in sustainable tourism destination management [13,14,15].

CONCLUSION

Recent rapid global tourism sectors grows contributes to the rapid development of tourism in Tomohon area. Tomohon has abundance natural and cultural resources for tourism development. Tourism development may further result in environmental and social disturbance. Therefore, the development of tourism potential in Tomohon need the comprehensive research in the basic natural and cultural resources, the potential distribution in the context of spatial aspect, and the design to convert potential resources becoming actual tourist product.

REFERENCES

[1] Picard, M., M. F. Lanfant, J. B., Allcock and E. M. Bruner. 1995. Cultural heritage and tourist capital: cultural tourism in Bali. International tourism: identity and change, 44-66.

[2] Ross, S. and G. Wall. 1999. Evaluating ecotourism: the case of North Sulawesi, Indonesia. Tourism management 20(6), 673-682.

[3] Cukier, J., R. Sharpley and D. J. Telfer. 2002. Tourism employment issues in developing countries: examples from Indonesia. Tourism and development: Concepts and Issues, 165-201.

[4] Inskeep, E. 1991. Tourism planning: an integrated and sustainable development approach. Van Nostrand Reinhold.

[5] DeVantier, L. and E. Turak. 2004. Managing marine tourism in Bunaken National Park and adjacent waters, North Sulawesi, Indonesia. Project Report of Natural Resources Management III and Program's Areas & Agriculture Team. Jakarta.

[6] Hakim, L., M. Soemarno and S. K. Hong. 2012. Challenges for conserving biodiversity and developing sustainable island tourism in North Sulawesi Province, Indonesia. Journal of Ecology and Environment 35(2), 61-71.

[7] Pangemanan, A., L. H. Maryunani and B. Polii. 2012. Economic analysis of Bunaken Nasional Park ecotourism area based on the carrying capacity and visitation level. Asian Transactions on Basic and Applied Sciences, 2(2).

[8] BPS Tomohon. 2014. Tomohon dalam angka. Statistic Centre of Tomohon City. North Sulawesi.

[9] Butar Butar, R. R., L. Hakim and I. R. Sastrahidayat. 2015. Plants as flagship species in tourism destination: a case study at mount Mahawu Tomohon, North Sulawesi, Indonesia. International Journal of Conservation Science, 6(4).

[10] Neto, F. 2003. A new approach to sustainable tourism development: Moving beyond environmental protection. Natural Resources Forum 27(3), 212-222.

[11] Cawley, M. and D. A. Gillmor. 2008. Integrated rural tourism: concepts and practice. Annals of Tourism Research 35(2), 316-337.

[12] Van Wirdum, G. 1991. Vegetation and hydrology of floating rich-fens. Geert van Wirdum.

[13] United Nations. 1979. Guidelines for rural centre planning. UN- Economic and social commission for Asia and the Pacific. New York.
[14] Spenceley, A. 2005. Nature-based tourism and environmental sustainability in South Africa. Journal of Sustainable Tourism 13(2), 136-170.
[15] Epler, B. 2007. Tourism, the economy, population growth, and conservation in Galapagos. Charles Darwin Foundation.

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Spatial Diversity of Macrobenthic in Ngenep Spring Due to Anthropogenic Activities

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Abstract

This aims of this study are to determine the macrobenthic community structure between the drainage near residence and spring; and to determine effect of local environment on macrobenthic community structure at the Ngenep village. Field study was conducted in 3 drainage, i.e. residential drainage, spring and rice field irrigation. Macrobenthic were sampled by the surber net and hand net in three stations in each drainages. Abiotic factors were assessed at the same stations. Macrobenthic community structure and diversity was determined using Important value index, Shannon-Wiener index and Bray Curtis index. Cluster of benthics and abiotic factors were analysis using Principal Component Analysis (PCA). Abiotic data showed no statistical significance in 3 drainage (P>0.05) but showed increasing trend from spring to field irrigation and the highest at residential drainage. The 17 taxa of macrobenthic were found with high important value index are Melanoides tuberculata, larva's of Ephemeroptera and Plecoptera. Highest Shannon-Wiener index observed at irrigation (2.781). The cluster analysis of abiotic factor showed that spring was in different cluster with residential and irrigation, meanwhile, PCA analysis of macrobenthic showed each place was different cluster. Conclusion of this study is anthropogenic activities alter the diversity and community structure of macrobenthic.

Keywords: Anthropogenic Activity, Macrobenthic, Ngenep.

INTRODUCTION

Ngenep villages, Malang Regency, East Java, Indonesia have a spring and the water is utilized for many things. Most of the citizen in Ngenep are farmers (3,911 people from 13,499 people) and use the water for agricultural purposes and daily purposes such as bath and laundry [1]. Anthropogenic activities in Ngenep village may alter the water quality. Bioindicator organism, such as plankton, benthic macroinvertebrates or fish may be employed to assess the aquatic commu-nity quality and water quality. Benthics are effective tools for environment health assessment; these are easy, cost-effective, and quick assessment [2].

Macrobenthic are the organism that dwells in the bottom of the water body. These organisms have role in water mineralization process, assist the water organic material cycle, and become the linking chain between plankton and peryphiton to higher tropic level in aquatic community. Many studies used macrobenthic as the bioindicator of water quality because of its rela-tively easy to conduct, inexpensive, and because of its limited migratory pattern able to give better water quality assessment. Anthropogenic land-based activities such as urban runoff were given impact on the distribution and species diversity of macrobenthic invertebrates [2]. Ngenep are one of the most spring sites at Malang and near human residence.

The aims for this study are to determine the community structure of the macrobenthic bet-ween the drainage that built near the residence and spring; and to determine the effect of local environment to macrobenthic community structure. The data of the study are expected as the reference to water remediation and conser-vation management for near human dwelling-water bodies.

MATERIALS AND METHODS

Study Sites and Benthic Sampling

Ngenep Village, Malang City is located at 7°44'-8°26'LS and 112°17'-122°57'BT with high-land topography at 250-500 m asl elevation. The study was conducted in November 2013. Field study was conducted in 3 drainages; (1) the stream of drainage near the human residence, (2) the stream near the spring and (3) the stream near the field irrigation. The spring is the source of water in the drainage.

Macrobenthic was sampled using surber net and hand net in 3 stations, based on selective sampling, which categories are substrates differences and riparians. Collected macro-benthic was sorted using pinset and white plate and then preserved with 70% ethanol in labeled sterile vials. Identification is conducted in Ecology

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and Animal Diversity Laboratory at Department of Biology, University of Brawijaya using the stereo microscope and reference literature [2,3,4].

Abiotic Factor Measurements

Abiotic factors are measured at the same stations and triplicate. The measured factors are: water temperature (°C) using thermometer; stream velocity ($m.s^{-1}$); conductivity (µ mhos) using conductivity meter; water pH using digital pH meter; Dissolved oxygen (DO) ($mg.L^{-1}$) using digital DO-meter [4,5], DO data were used to measure the water BOD; Total Organic Matter (TOM) [6]; water turbidity using turbidity meter; water nitrate content ($mg.L^{-1}$) method [7]; and water orthophosphate content ($mg.L^{-1}$) method [8]. We also slightly described the stream substrate using direct observation.

Data Analysis

Macrobenthic community structure is determined using: (1) Important value index to determine the relative importance of each species; (2) Shannon-Wiener index to estimate the community diversity; and (3) Bray Curtis index to estimate the dispersal and similarity of macrobenthic [5,9]. Principal component analysis (PCA) for abiotic factor and macrobenthic were employed with PAleontological STatistics (PAST) program. ANOVA analysis is employed using SPSS 16.0 for Windows.

RESULT AND DISCUSSION

Abiotic Factor

The abiotic data from three water bodies showed no significant differences (P>0.05) for almost the entire factor. The only difference was water at residential drainage have faster velocity than the other (Suppl.1). Although the abiotic factors have no statistical differences, there are some trends that occur. DO, BOD, conductivity, TOM, and turbidity have increasing pattern from spring to field irrigation and the highest at residential drainage.

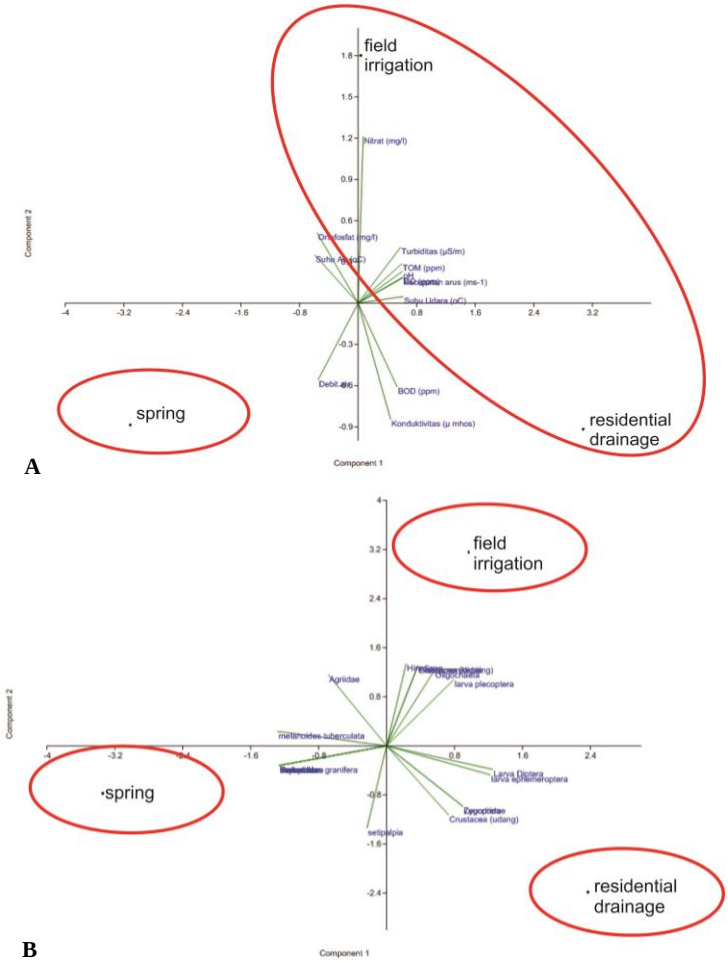

Figure 1. PCA Analysis of Abiotic Factor and Macrobenthic of 3 Water Bodies at Ngenep Village
A: Abiotic Factor; B: Macrobenthic

Cluster analysis and PCA showed that irrigation and residential drainage have very high similarity (93%) (Suppl. 2) and it became the same cluster with 80% threshold. It suggested that the spring have different quality, and anthropogenic activity may one of the causes. Biplot of PCA showed that many abiotic factors have tendency to the irrigation and residential cluster. Nitrate content is highly positive correlated to irrigation. Water debit is positively correlated to water spring (Fig. 1).

Anthropogenic activity near the spring does not have considerable impact based on the abiotic data. The increasing trend of DO, BOD, conductivity, TOM, and turbidity are mediated by anthropogenic activity, but no significant ($P > 0.05$). Increased conductivity is result of human impacts such as organic pollution and nutrient enrichment [10]. Turbidity usually goes around with conductivity patterns [11].

Benthic Community Structure

We found 17 taxa of macrobenthic from three drainages with the most found taxa are *Melanoides tuberculata*, larvae of Ephemeroptera and Plecoptera (Fig. 2). The high observed Shannon-Wiener index was observed at irrigation (2.781), resident drainage (2.554) and spring (2.064) (Fig. 3).

Shannon Wiener diversity index value showed that every water bodies have value more than 2, which is considered good. The community stability in the three places is not easy to change if there are slight disturbances from the environment. Lower diversity index in water spring may caused by the substrate. Most of the substrate at the water spring are sand, meanwhile the others are rocky and slight sand. Sandy environment have less diversity than rocky, and most of them are suspended feeder or carnivores such as Polychaeta, Bivalvia and Crustaceas [12]. We found many *M. tuberculata* (Bivalvia) in spring.

Cluster analysis using Bray Curtis Index and principal component analysis (PCA) were conducted to determine the dispersal of the macrobenthic (Fig. 1). The data showed that three water bodies have different macrobenthic based on 80% similarity and become three different clusters (Suppl. 3). The data suggest that antrophogenic activity alters the macrobenthic community stronger than the abiotic factor.

The oxygen concentration was the most important factor for Ephemeroptera, Coleoptera, Trichoptera, Hemiptera, Odonata, Diptera and Hydropsychidae. The BOD was the most important factor for Hydrophilidae and Hirudinea, whereas the turbidity for Collembola [13]. The water spring have the lowest DO between the three and have less Ephemeroptera.

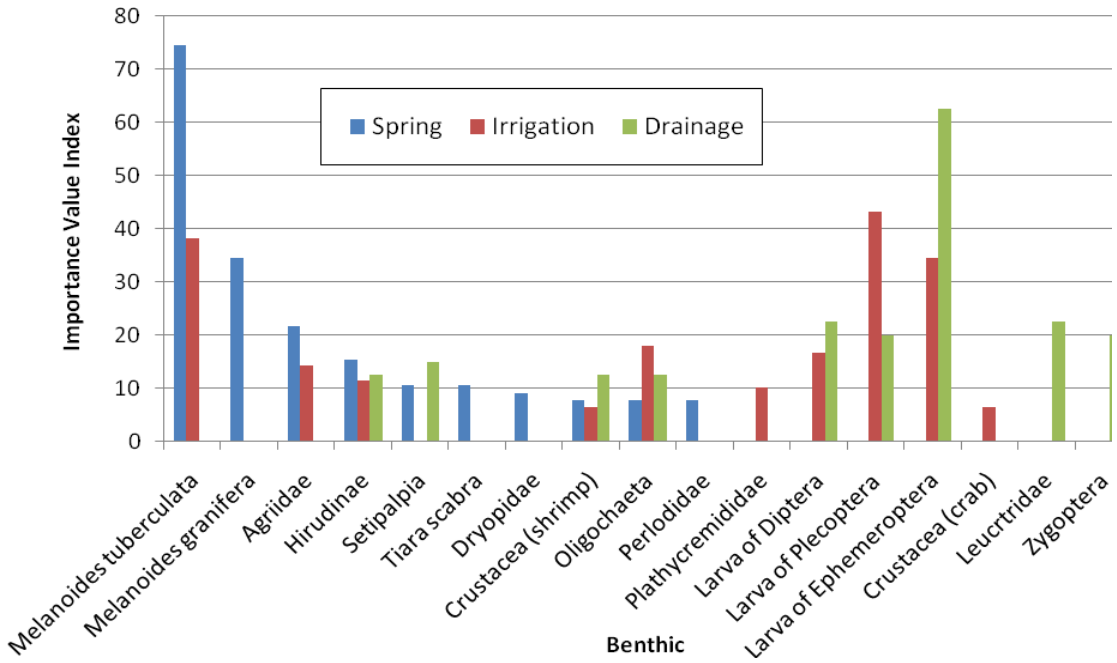

Figure 2. Important Value of Macrobenthic in three types of drainage at the Ngenep Village

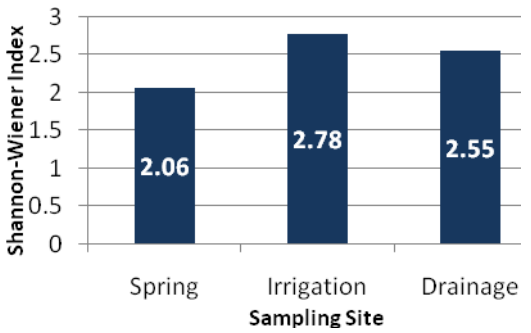

Figure 3. Shannon-Wiener Diversity Index of Spring, Irrigation and Residential Drainage

Melanoides tuberculata is dominant benthos in spring, larva of Ephemeroptera in irrigation and larva of Plecoptera in recidential drainage. *M. tuberculata* intimately correlated with the physico-chemical factors of the water. These species can be considered as bioindicators pollution (organic pollutant was produced by animals and humans) because they possess great tolerance against the contaminants present in water [14].

The Ephemeroptera are sensitive benthic and usually are indicators of good water quality [15]. The most of Ephemeroptera larvae have very narrow requirements regarding their tolerance to dissolved oxygen, pH, type of substrate, size and currents of the stream, and temperature of the water [16]. Most of the Plecoptera species are sensitive to pollution due to low levels of adaptive mechanisms [17].

CONCLUSION

The 17 taxa of macrobenthics were found with high important value index are *Melanoides tuberculata*, larva of Ephemeroptera and Plecoptera. The high observed Shannon-Wiener index was observed at irrigation (2.781), resident drainage (2.554) and spring (2.064). PCA analysis of abiotic factor showed that spring was in different cluster with residential and irrigation, meanwhile, PCA analysis of macrobenthic showed that each place has different cluster. Anthropogenic activities alter the diversity and community structure of macrobenthic.

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REFERENCES

[1] Machfudz, M. and N. Khoiriyah. 2013. Analisis ketahanan pangan melalui pemodelan usaha tani singkong. Islamic University of Malang (UNISMA). Malang.

[2] Barbour, M.T., J. Gerritsen, B. D. Snyder and J. B. Stribling. 1999. Rapid bioassessment protocols for use in streams and wadeable rivers: Peryphiton, Benthic Macroinvertebrates, and Fish. U.S. Environmental Protection Agency, Washington D.C.

[3] Lupi, D., A. Rocco and B. Rossaro. 2013. Benthic macroinvertebrates in Italian rice fields. Journal of Limnology 72(1): 184-200.

[4] Sinaga, T. 2007. Keanekaragaman makrozoobentos sebagai indikator kualitas perairan Danau Toba Balige, Kabupaten Toba Samosir. Thesis. University of North Sumatra, Medan.

[5] Puspitasari, S., E. Arisoesilaningsih and B. Yanuwiadi. 2011. Pemetaan aktivitas masyarakat dan kualitas abiotik perairan Ranu Grati, Kabupaten Pasuruan. Thesis. Department of Biology, University of Brawijaya. Malang.

[6] Prasetyo, H.D. and C. Retnaningdyah. 2013. Penggunaan diversitas vegetasi riparian lokal untuk peningkatan kualitas air irigasi tersier di Desa Kedung Pedaringan Kecamatan Kepanjen Kabupaten Malang. Thesis. Department of Biology, University of Brawijaya. Malang.

[7] Narayana, B. and K. Sunil. 2009. A spectrophotometric method for the determination of nitrite and nitrate. Eurasian Journal of Analytical Chemistry 4(2), 204- 214.

[8] Feiser, L. F. and M. Feiser. 1967. Reagents for organic synthesis. Wiley and Sons Inc. New York.

[9] Merganic, J. and S. Smelko. 2004. Quantification of tree species diversity in Forest Stands-Model BIODIVERSS. Europe Journal of Forest Research 123, 157-165.

[10] Sutherland, B. A., J. L. Meyer and E. P. Gardiner. 2002. Effects of land cover on sediment regime and fish assemblage structure in four southern Appalachian streams. Freshwater Biology 47, 1791–1805.

[11] Kasangaki, A., L. J. Chapman and J. Balirwa. 2007. Land use and the ecology of benthic macroinvertebrate assemblages of high-altitude rainforest streams in Uganda. Freshwater Biology 53(4), 1-17.

[12] Barnes, R. S. K. and R. N. Hughes. 1999. An introduction to marine ecology 3rd Edition. Blackwell Ltd. London.

[13] Souto, R. M. G., K. G. Facure, L A. Pavanin and G. B. Jacobucci. 2011. Influence of environmental factors on benthic macro-invertebrate communities of urban streams in Vereda habitats, Central Brazil. Acta Limnologica Brasiliensia 23(3), 293-306.

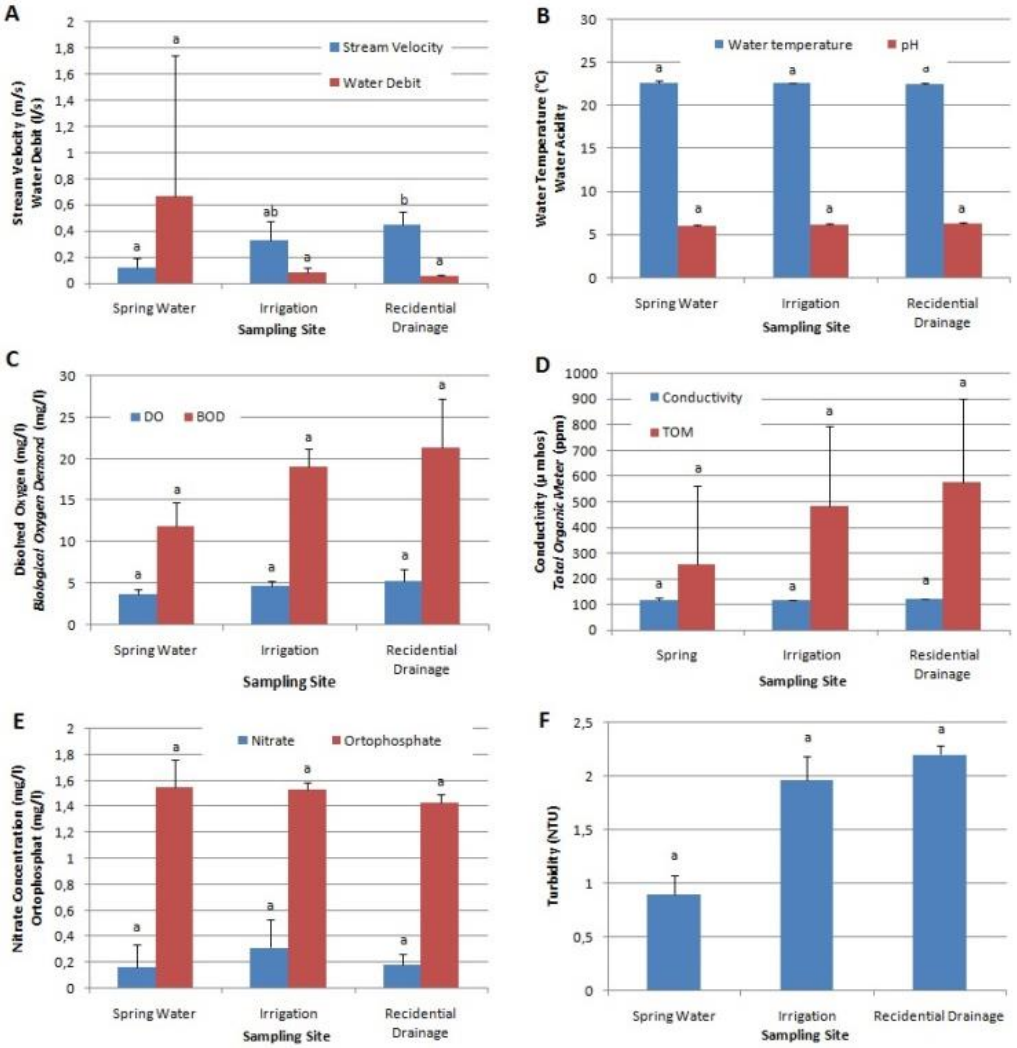
[14] Sharma, K. K., K. Bangotra and M. Saini. 2013. Diversity and distribution of Mollusca in relation to the physico-chemical profile of Gho-Manhasan stream, Jammu (J & K). International Journal of Biodiversity and Conservation 5(4), 240-249.

[15] Junqueira, V. M. and S. C. M. Campos. 1998. Adaptation of the "BMWP" method for water quality evaluation to Rio das Velhas watershed (Minas Gerais, Brazil). Acta Limnologica Brasiliensia 10(2), 125-135.

[16] Alhejoj, A., E. Salameh and K. Bandel. 2014. Mayflies (Order Ephemeroptera): an effective indicator of water bodies conditions in Jordan. International Journal of Scientific Research in Environmental Sciences 2(10), 361-370.

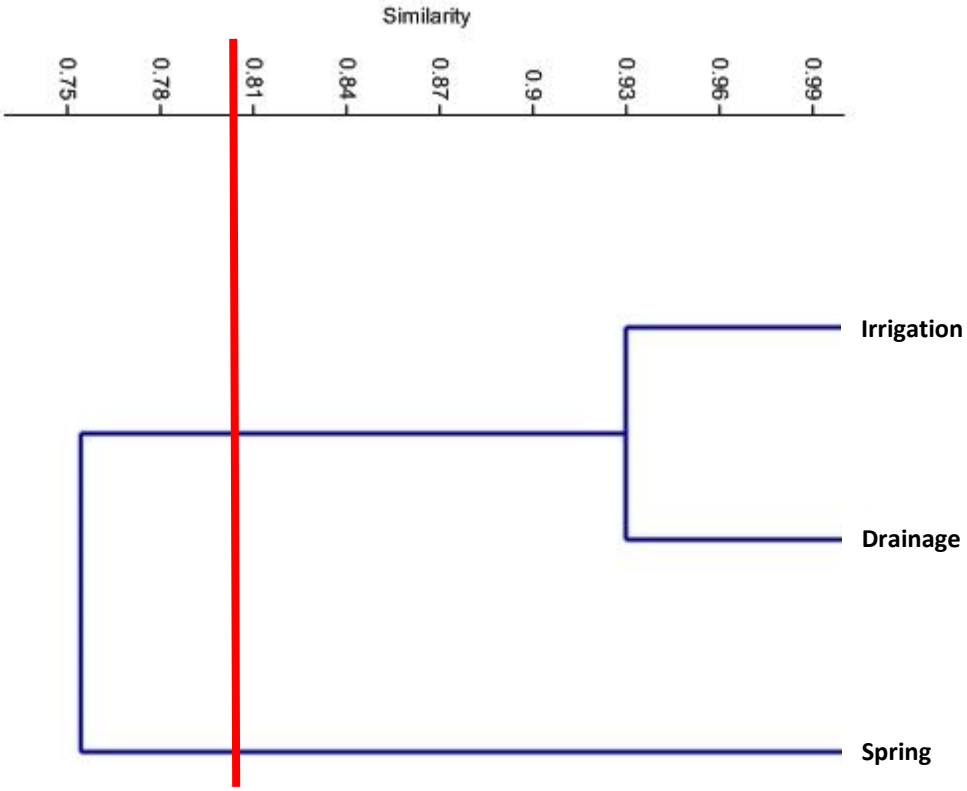
[17] Kripa, P. K., K. M. Prasanth, K. K. Sreejesh and T. P. Thomas. 2013. Aquatic macro-invertebrates as bioindicators of stream water quality - a case study in Koratty, Kerala, India. Research Journal of Recent Sciences 2, 217-222.

SUPPLEMENTARY

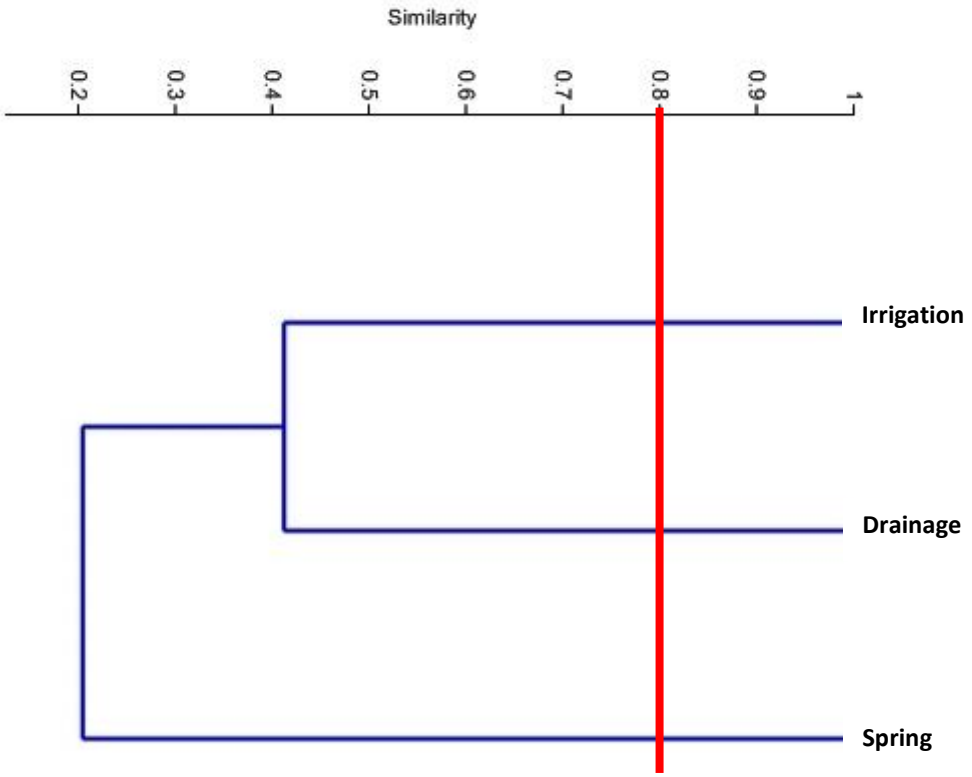


Supplementary 1. Abiotic Factors in Each Drainage Type of Ngenep Village, Karangploso

A. Stream Velocity and Water Debet; B. Water Temperature and Water Acidity; C. DO and BOD; D. Conductivity and TOM; E. Nitrate and Orthophosphate Concentration; and F. Turbidity. Bars are Standard Deviation. Notation shows statistical different at P>0.05.



Supplementary 2. Cluster Analysis of Abiotic Factor Based on Bray Curtis Similarity Index in 3 Water Bodies at Ngenep Village. Red Line Indicates Clustering at 80% Similarity



Supplementary 3. Cluster Analysis of Macrobenthic Based on Bray Curtis Similarity Index in 3 Water Bodies at Ngenep Village. Red Line Indicates Clustering at 80% Similarity

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Agroedutourism Model to Improve Environmental Awareness of Students in Some Elementary School in Malang Raya, East Java

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Abstract

This research aimed to build specific agroedutourism model for elementary school students in Malang Raya. Target of this research were 5th grade students from SDN Ketawanggede 2, SDN Sumberngepoh 02 and SDI Surya Buana. We provided three agroedutourism programs, there were 1). Learning on farmer's friends and enemies, 2). Learning on plants as raw material for biopesticide and natural attractant and 3). Learning on healthy agroecosystem. Each agroedutourism program was composed by discussion, eco-games and taste of healthy foods. Data obtained by distributing questionnaires and analyzed by open source software, Smart PLS (Partial Least Square). Agroedutourism model from PLS output showed that learning on farmer's friends and enemies program was the most effective to improve cognitive competence, enjoyment, pleasure, and the final-understanding of elementary school students than the other programs. While, initial-understanding directly contributing to improve cognitive competence and final-understanding of elementary school students. Cognitive competences directly influence to improve the student's appraisal of foods that were obtained. Student enjoyment directly influence to affection and appreciation. Based on those models, to improve final-understanding, we had to improve initial-understanding using learning on farmer's friends and enemies program. Students' appreciation was improved by improving affection and appreciation.

Keywords: agroedutourism, appreciation, cognitive, environmental awareness.

INTRODUCTION

Environmental quality influenced by the condition of the environment, better condition of environment can make a better quality of it. However, nowadays the condition of the environment is really bad, most people were degrading the environment instead of conserve it [1,2]. The increased of population, natural resources exploitation, technology developments, economic, social activities without notice to carrying capacity of the environment can caused some problem for the environmental, such as soil degradation, flooding, air pollution, global warming, and depletion of ozone [3,4,5]. Considering the various environmental problems that occur, efforts are needed to improve the understanding on the importance of environmental conservation.

In Indonesia, efforts to improve understanding on the importance of environmental conservation have long programmed, either through formal or informal education. In formal education, on February 19, 2004 the Ministry of Environment in collaboration with the Ministry of National Education and Ministry of Religious Affairs to establish a policy of Environmental Education (EE) which is used as a base or direction for all stakeholders involved in the implementation of environmental education in Indonesia. However, efforts to prevent and resolve environmental problems are less rapidly with actions which cause environmental degradation. As a result, environmental problems still occur and develop into uncontrolled, so Environmental Education system has not succeeded in forming human environmental awareness. Formal environmental education in elementary school was still not optimal to improve students understanding on environmental awareness due to the theoretical materials, not discussing the real problems and had not involved local people participation [6]. It can lead to less attention on environmental education than economy aspect. As a result, environmental problems still occur, due to the most of environmental problems caused by human activities to get their needs [7]. Therefore, it is necessary for environmental education to also pay attention on environmental conservation and economic of society, thus environmental education is able to realize the sustainable development.

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs [8]. One of the efforts to realize

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sustainable development is by tourism [9,10]. Tourism is expected to increase the economy while conserve the cultural and the environment. Due to Indonesia is an agricultural country and most of the population are farmers, thus the type of tourism that used is agricultural tourism (agrotourism). Agrotourism is integrated system and coordinated activities for the development of agricultural tourism in relation to environmental conservation. Agrotourism provides many benefits, both of farmers, local communities and visitors. For farmers and local communities agrotourism is an alternative to explore the economic potential and to increase income. For visitors, agrotourism can improve knowledge, experience, recreation, and businesses in agriculture [11]. By development of agrotourism that highlight local culture in land use, we can increase farmers' income while conserve land resources, local culture and technology (indigenous knowledge) were generally suitable with their natural environment conditions [12]. The agrotourism is packaged into educational tourism based on agriculture (agroedutourism = agriculture education and tourism) which used for Environmental Education.

One of the areas in East Java that has potential as an agroedutourism is Malang. This educational tourism based on agriculture (agroedutourism) is packed with game models thus it is suitable for elementary school students [13]. Game is one of the effective methods for teaching children [14], by playing the childrens expected to learn well due to the relaxe learning atmosphere and the application of environmental education from early age will be embedded within them that will affect their life style. This research aimed to build specific agroedutourism model for elementary school students in Malang Raya. This information is expected to provide an alternative environmental education for elementary students.

MATERIALS AND METHODS

Targets of this research were the 5th grade students from SDN Sumberngepoh 02, SDN Ketawanggede 2 and SD Islam Surya Buana. The 5th grade students selected as agroedutourism target due to they began to be sensitive to environmental conditions and have been able to express their opinions [15]. Furthermore, the implementation of environmental education from elementary school will be embedded within them. Students in one class devided into three groups and one group only got one agroedutourism program. Each agroedutourism program had duration of 150 minutes. We provided three agroedutourism as follows.

Farmer's Friends and Enemies Program

Students were invited to rice field and given the first questionnaire to determine the cognitive, affective and appreciation of the students before the implementation of agroedutourism program. After finishing first questionnaire, student received agroedutourism leaflet.

Furthermore, students learn about organic farming and the dangers of pesticides and synthetic chemical fertilizers application from undergraduate student and learn about farmer's friends and enemies from farmer. During the study, students are stimulated to ask about the lessons that have been taught. In this agroedutourism program, students are also invited to observe animals in the rice fields. Animals that were found recorded and identified their role (as a farmer's friend or enemy) with farmer help. After agroedutourism implementation had been done, students were invited to taste the foods and drink; i.e. brownies bran, zalacca fruits and red rice milk. And then, the students received the second questionnaire. It was used to determine cognitive competence, affection, appreciation, enjoyment and pleasure that the question based on agroedutourism program. Furthermore, students got eco-game called "guess predator and prey and guess the name and animals function on the farm". After it, the students were given the final questionnaire, to determine the cognitive, affective and appreciation after the implementation agroedutourism program.

Plants as Raw Material for Biopesticide and Natural Attractant Program

Students were invited to school yard and given the first questionnaire to determine the cognitive, affective and appreciation of the students before the implementation of agroedutourism program. After finishing first questionnaire, student received agroedutourism leaflet. Furthermore, students learn about organic farming, the danger of synthetic chemical pesticides and fertilizers application, learning the plants that can be biopesticides and attractant farmer's friend from undergraduate student. Lesson about plants for biopesticides and natural enemies' attractant given by taking samples of the plants later explained their name and function. After implementation of agroedutourism program had been done, students were invited to taste the foods and drink; brownies bran, zalacca fruits and

red rice milk. Then the students received the second questionnaire, it was used to determine cognitive competence, affection, appreciation, enjoyment and pleasure that the question based on agroedutourism program. Furthermore, students got eco-game called "guess the name and function of plants around us". After it, the students were given the final questionnaire, to determine the cognitive, affective and appreciation after the implementation agroedutourism program.

Healthy Agroecosystem Program

Students still in the class, furthermore they were given the first questionnaire to determine the cognitive, affective and appreciation of the students before the implementation of agroedutourism program. After finishing first questionnaire, student received agroedutourism leaflet. Furthermore, undergraduate student and teacher explained about Indonesia farming system, the danger of synthetic chemical pesticides and fertilizers application and its solution. After implementation of agroedu-tourism program had been done, students were invited to taste the foods and drink; brownies bran, zalacca fruits and red rice milk. Then the students received the second questionnaire, it was used to determine cognitive competence, affection, appreciation, enjoyment and pleasure that the question based on agroedutourism program. Furthermore, students got eco-game called “playing snakes and ladders and learning rice farming environment". After it, the students were given the final questionnaire, to determine the cognitive, affective and appreciation after the implementation agroedutourism program.

Data Analysis

Questions type in the questionnaire were open ended question, closed ended question and close reasoned question. Those questionnaire using scoring system, the question that has two answers were scored 1-2, question that has five answers were scored 1-5 while open-ended questions were scored 1-5. To determine agroedutourism model, the variables of program was analyzed on initial understanding (questionnaire 1), final understanding (questionnaire 3), cognitive competence, enjoyment, pleasure, affection and appreciation (questionnaire 2) by open source software, Smart PLS (Partial Least Square).

RESULT AND DISCUSSION

The theoretical model from the literature was initial understanding affect on cognitive competence, affection, appreciation and final understanding of elementary school students. While, the agroedutourism program affect to cognitive competence, enjoyment, pleasure, affection, appreciation, and final understanding of elementary school students. Cognitive competence affect to enjoyment, pleasure, affection, appreciation and initial understanding of elementary school students. Enjoyment affect to pleasure, affection and appreciation for elementary school students. Pleasure affect to affection and appreciation for elementary school students. The affection and appreciation affect to final understanding of elementary school students (Fig. 1). Those theoretical model would used as the basic for modeling in PLS.

Outer loading result indicate that the indicator of 3 cognitive competencies (knowledge to control pests, the differences between chemical pestiside and biopesticides and nutrient of rice) in the cognitive competencies variable and the indicator of pleasure 2 (appraisal on organic red rice milk flavor) in the pleasure variable had t-statistics value <1.96. It showed that latent variables of cognitive competence represented by cognitive indicators 1 and 2 while the pleasure represented by pleasure indicator 1, thus the cognitive indicators 3 and pleasure indicator 2 should be excluded from the model. After those indicators were excluded from the model, model was rearranged and the results showed that all indicators adequate validity convergent. The model validity from the calculation of predictive relevance Q_2 value was 96.94%. It means that 96.94% of elementary school students’ final understanding influenced by initial understanding, program, cognitive competence, enjoyment, pleasure, affection and appreciation, while 3.06% was influenced by the other variables that were not in the model. Those model validity more than 80%, thus it feasible to use.

The result of models analysis for improvement students’ cognitive competence showed that initial understanding directly improve the cognitive competence and final understanding (Fig. 2). It means that, the higher of students' initial understanding made the cognitive competence and final understanding students will be higher as well. The research result showed that SDN Sumberngepoh 02 students who had the highest initial understanding had the higher

cognitive competence and final understanding as well. While SDI Surya Buana students who had low initial understanding had low cognitive competence and final understanding as well. Therefore, to improve cognitive competence and final understanding, the students' initial understanding should be improved first. This initial understanding was obtained from their environments, such as family and school. SDN Sumberngepoh 02 students got knowledge about organic farming from their family who worked as farmers and they fre-quently help their parents work in the rice fields. While SDI Surya Buana students did not come from farming families, so they had less know-ledge about organic farming.

Therefore, to improve students' initial understanding, education on the importance of organic farming need included in school lesson, such as Natural Sciences. While the student's initial understanding did not directly influence the affection and appreciation. It means that, affection and appreciation can be formed without initial understanding. Learning on farmer's friends and enemies program was the most effective to improve enjoyment, pleasure, cognitive competence and final understanding than the other program. While learning on healthy agroecosystem program was the least effective to improve the four variables than the other program. Therefore, learning on plants as raw material for biopesticide and natural attractant and learning on healthy agroecosystem should be improved on the lesson and teaching methods. There were presumption that learning on farmer's friends and enemies were agroedutourism program that directly related to the object being studied. Students were invited at the rice fields to identify the animals name and their functions.

Learning on healthy agroecosystem program is a virtual agroedutourism, the students learn in the classroom and not contact with the object being studied, so the students only imagine the object studied. Previous research results indicated that learning achievement of Biology (Arthropods lesson) class X which used natural animals was higher than used the image [16]. It showed that learning which use natural objects more effective to improve learning achievement compared to learning which use artificial object. In addition, students more interested to follow the learning farmer's friends and enemies program than learning on plants as raw material for biopesticide and natural attractant program. It is due to this program implemented in rice field which was a new location for students to learn, while the others program that implemented in the school. Students less interested following agroedutourism program in the school due to the school was a student daily place to learn so the students who follow agroedutourism program in the school want to learn in the environment such as in the rice fields. Interesting will support the enjoyment, pleasure, cognitive competence and final undersatanding of students. Interest was one of the factors that influence the success of teaching and learning program [17]. To get good final result of an activity, someone should have a high interest in advance.

Cognitive competencies directly improve the student appraisal of the foods that were provided. The high of students' knowledge for organic red rice and rice bran benefit would make students appraisal of the food that were provided. Therefore, to improve students' appraisal of 'brownies rice bran and organic red rice milk, the students' knowledge for the benefit of these foods should be improved. Previous research found that knowledge of elementary school students to foods nutrients influence the students behavior in choosing snacks that they bought [18]. Students that knew the benefits of food nutrition prefer to healthy snack and had a high nutrition than the less healthy snack.

Enjoyment variable directly improve student affection to the environmental conservation. Students who enjoy following agroedutourism program will have the higher affection than the students who less enjoy the program. It was expected that students will have the higher environmental awareness than students who were less enjoy following agroedutourism program. It was consistent with Marhaeni research which states that enjoyment was one of the affective factors that influence the achievement of students in learning English [19].

Based on the model (Fig. 2) was known that affection directly improve the appreciation. People who had high affection on environment would have a better appreciate to conserve the environment. Affection is one of the factors that influence the appreciation [20]. Based on the model, to improve the students' final understanding, students' initial understanding should be improved and agroedutourism program that used was learning on farmer's friends and enemies program. Students appreciation improved by increased affection and pleasure.

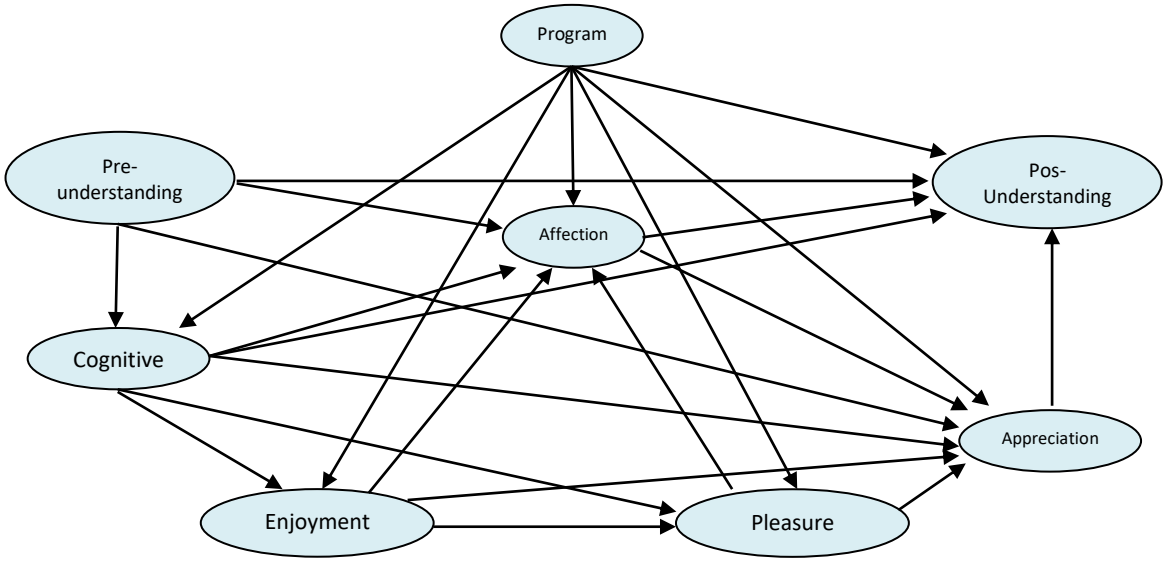

Figure 1. The Theoretical Model of Improvement Students' Competence of Agroedutourism Participant

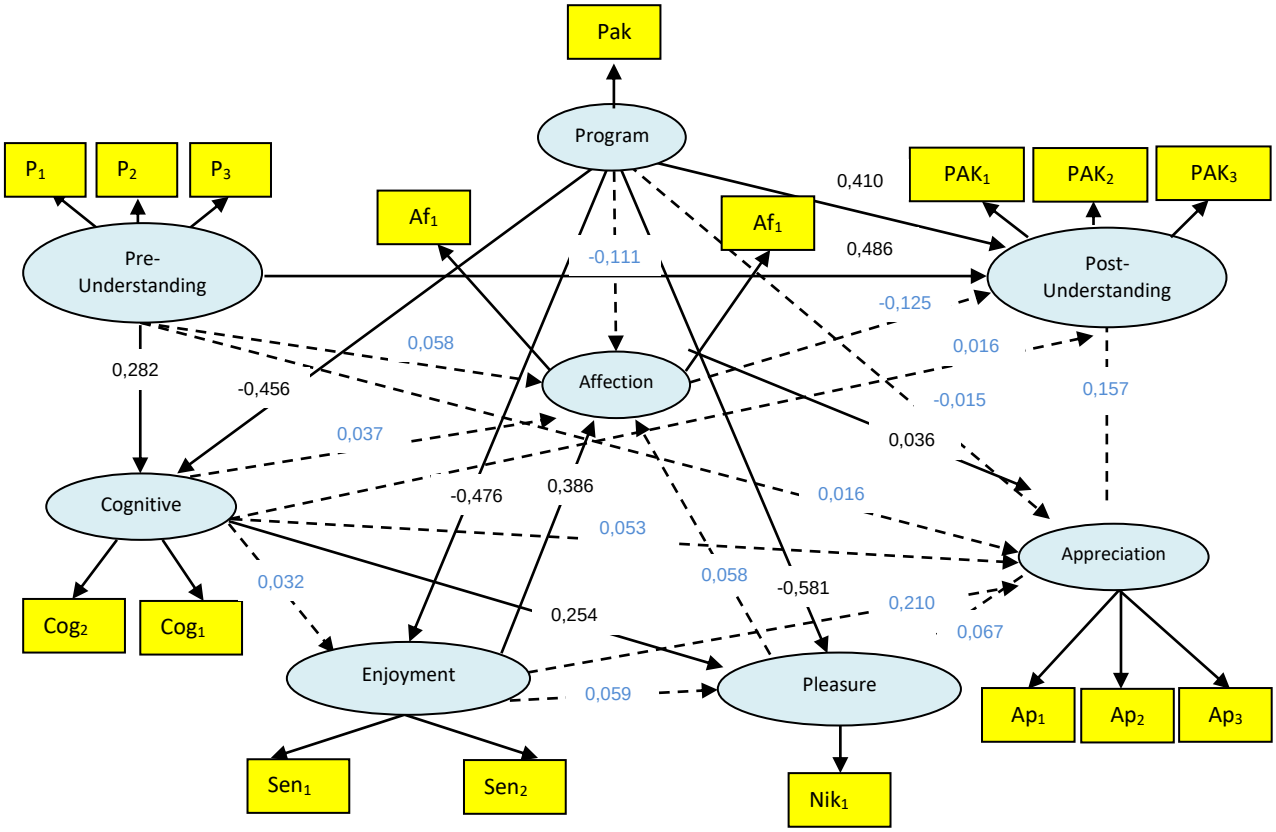

Figure 2. Model of Improvement Students' Competence of Agroedutourism Participant
Description: ⟶ (directly influnced, black value); - - -▶ (indirectly influenced, blue value); ◯ = laten variable; ▭ dicator. $P_{1,2,3}$ =initial understanding 1,2,3; $Cog_{1,2}$= cognitive competence 1,2; $Sen_{1,2}$= enjoyment1,2; Nik_1=pleasure 1; $Ap_{1,2,3}$=Apreciation 1,2,3; $Af_{1,2}$=Affectioni 1,2; $PAK_{1,2,3}$= final understanding 1,2,3.

CONCLUSION

Learning on farmer's friends and enemies program was the most effective to improve cognitive competence, students' enjoyment, appraisal of the foods that were provided and final understanding of elementary school students than the other program (learning on plants as raw material for biopesticide and natural attractant and learning on healthy agroeco-system). Otherwise, initial understandings directly improve cognitive competence and final understanding of elementary school students. Cognitive competence directly influenced by apparaisal of the foods that were provided. Enjoyments

improve the students' affection and appreciation to the environmental. The weakness of this study was each student only receives one agroedutourism program, therefore needed study on the effectiveness of all agroedutourism programs on the final understanding of student with varied parental background.

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REFERENCES

[1] Yuniato, B. 2012. Building citizen awareness of environmental conservation.International Journal of Scientific & Technology Research 1(7), 87-89.

[2] Akhter, S. and P. Malaviya. 2015. Assesment of environmental awareness among rural and urban resident in Bishnah, Jammu and Kashmir, India. International Journal of Basic and Applied Sciences 4(3), 180-182.

[3] Huong, H. 1999. Environmental policies and natural resource management in Southeast Asia. Global Nest 1(3), 217-225.

[4] Islam, N. 2008. Public awareness about environmental issues: perspective Bangladesh. Asian Affairs 30(2), 30-56.

[5] Ogunjinmi, A. A., S. A. Onadeko, and A. A. Adewumi. 2012. An empirical study of the effects of personal factors on environmental attitudes of local communities around Nigeria's Protected Areas. The Journal of Transdisiplinary Environmental Studies 11(1), 40-53.

[6] Setiawan, I. 2011. Upaya mewujudkan pembangunan berkelajutan melalui pendidikan lingkungan hidup. Available at: http://file.upi.edu/Direktori/FPIPS/JUR._PEND._GEOGRAFI.

[7] Stern. 2000. Toward a coherent theory of environmentally significant behavior. Journal of Social Issues 56(3), 407-424.

[8] Becker, J. 2005. Measuring progress towards sustainable developmnet: an ecological framework for selecting indicator. Local Environment 10(1), 87-101.

[9] UNCSD NGO Steering Committee. 1999. Tourism and sustainable development. Available at:http://www.gdrc.org/uem/ecotour/ngo4.pdf.

[10] Wu, C. W. 2009. Sustainable development conceptual framework in tourism industry context in Taiwan: resources based view. Conference of International Journal of Arts and Sciences 2(1), 1-11.

[11] Sasanti, S.A., F. Ananda and M. Fadli. 2011. Pengembangan agrotourism berbasiskan ramah lingkungan dalam peningkatan kesejahteraan masyarakat, diversifikasi pangan dan penerapan pertanian modern di Desa Muntuk, Kecamata Dlingo, Kabupaten Bantul. Scientific Paper PKM. Bogor Agricultural University. Bogor.

[12] Departmnet of Agriculture. 2005. Agrowisata meningkatkan pendapatan petani. Available at: http://pustaka.litbang.deptan.go.id/publikasi/wr241029.pdf.

[13] Setyarini, S. 2010. *Puppet show*: inovasi metode pengajaran bahasa inggris dalam upaya meningkatkan kemampuan berbicara siswa. Jurnal Penelitian Pendidikan 11(1), 1-7.

[14] Widyastuti, S. 2010. Belajar sambil bermain: metode mendidik anak secara komunikatif. Seminar of Child Education. Teruna Bangsa School. Klaten.

[15] Telie, A. S. 2004. Pemberian paket indera dan pengaruhnya terhadap sikap anak pada alam. Jurnal Psikologi Sosial 13(1), 50-64.

[16] Yulius. 2005. Pengaruh pemanfaatan gambar dan hewan asli dalam pembelajaran materi Arthropoda melalui pendekatan kontekstual terhadap hasil belajar siswa kelas X SMA Negeri 1 Muara Batu Kabupaten Aceh Utara. Thesis. Department of Biology Education, Malang State University. Malang.

[17] Sucihatiningsih, D. W. P. and H. Sulistyowati. 2006. Faktor-faktor yang mempengaruhi kesulitan belajar mata pelajaran IPS Ekonomi. Jurnal Pendidikan Ekonomi Dinamika Pendidikan 1(2),162-181.

[18] Najihah, U. 2011. Hubungan pengetahuan gizi dan jumlah uang saku dengan perilaku siswa dalam memilih makanan jajanan di SD Muhammadiyah 2 Kauman Surakarta. Thesis. Department of Nutrition. Surakarta Muhammadiyah University. Surakarta.

[19] Marhaeni, A. A. I. N. 2008. Determinasi beberapa faktor afektif yang mempengaruhi keberhasilan belajar mahasiswa jurusan pendidikan bahasa inggris Universitas Pendidikan Ganesha. Jurnal Pendidikan dan Pengajaran UNDIkSHA 3(41), 733-755.

[20] Sageofasheville. 2012. Carl Rogers and humanistic education. Available at: http://www.sageofasheville.com/.

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The Strategy for Ecotourism Development in Plantation Area: A Case Study from Kalibendo Plantation, Banyuwangi East Java

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Abstract

Kalibendo plantation have a high potential value to be developed as an ecotourism destination. As far, the development of tourism in the area is still lack of visitors's enthusiasm due to several reasons such as lack of tourism product, promotion, poor management, and the low involvement of local people in tourism development. The aims of this study are to determine the visitor's perceptions at Kalibendo plantation tourism objects and arrange the strategy to develop ecotourism in that area. The results of visitors' assessment about tourism on Kalibendo plantation was moderates. Many programs should be developed systematically. The indicators of visitors' satisfactions are 'Sapta Pesona' that consists of security, order, cleanliness, coolness, beauty, friendliness, and memories should be improved. The strategy of tourism development in the Kalibendo plantation tourism objects which is based on SWOT analysis are: 1) The co-operation between local government with tourism management, namely PT. Kalibendo shuld be improved; 2) Organizing the education concerning to the prevention of environmental damage should be formulated; 3) The improvement of local human resources around the tourism objects through training should be implemented; and 4) The improvement of facilities for tourists should be planned and developed following ecotourism principles.

Keywords: Ecotourism, Banyuwangi Regency, plantation, tourism attraction development.

INTRODUCTION

In recent years, the tourism sector in Indonesia focuses on ecotourism development due to this tourism sector is able to contribute to environmental conservation [1,2]. The natural tourism object areas become a top priority for visitors because beside they are doing excursion, the visitors are demanded to keep the environment. Conceptually, ecotourism can be defined as a concept of sustainable tourism development that aims to support environmental conservation (nature and culture) and increase people's participation for the management, thus it gives benefit for the local communities [3]. On the other hand, from the management point of view, ecotourism can be defined as tourism organization that responsible in managing natural places or areas which are formed based on natural principles and sustainable economy that supports environmental preservation (nature and culture), and increase the welfare of local community [4,5].

Banyuwangi is the largest district in East Java, which is located in the east of Java Island. The district stretches from the highlands to the lowlands that have potential natural resources. Banyuwangi has various tourism attraction objects, i.e. beaches, mountains, forests or national parks and others. There are numerous plantation was established in the past by Ducth colonials government. Many of them are recently under managent of State Owened Enterprises for Plantation. Tourism assets in Banyuwangi are more dominant to nature tourism. Therefore the recommendation for the tourism development is Ecotourism.

One of the tourism objects that get a top priority for tourism objects development is Kalibendo plantation. It is located in the village of Kampung Anyar, Glagah District, Banyuwangi. Natural tourism object includes waterfall, rivers, and plantation [6]. As far, the involvement of local community in tourism was low. Development of tourism objects could give a positive value not only for the environment and economic, but also to empower the local communities around Kalibendo Water-fall tourism objects [7]. Based on these conditions, therefore the aim of this study is to develop the strategy for the ecotourism development in Kalibendo.

MATERIALS AND METHODS

This research was conducted in October 2015 located in Kalibendo plantation, Kampung Anyar Village, Glagah District, Banyuwangi, East Java. Geographically, Kalibendo plantation located at

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50 L 199 767 m E 9096299 m S. Tourism object in Kalibendo is located in the north Banyuwangi and a part of Kalibendo agro tourism, where there are rubber, coffee and cloves plantation are planted. Kalibendo agro-tourism area is located at Ijen Mount (Fig.1).

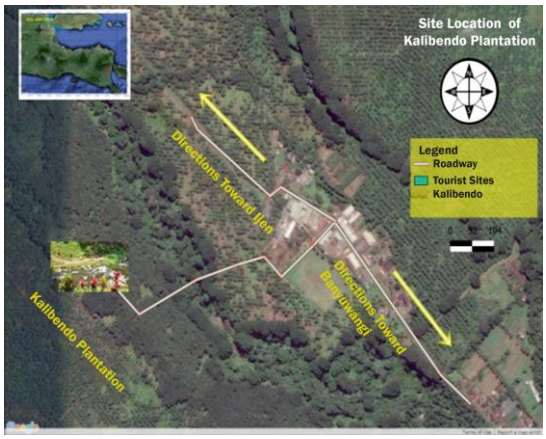

Figure 1. Map of Kalibendo Waterfall, Banyuwangi

Data Collection

Primary data was collected by questionnaires, interviews, and field observations. On the other hand, secondary data were collected through the review of literature. Questionnaires distributed to the visitors at Kalibendo to assess the general characteristics of visitors including age, sex, origin, education level, and occupation. In addition, the questionnaires were distributed to assess the visitors' motivation, perception, and expectations for Kalibendo ecotourism development.

Respondents were selected using random sampling method. It means that visitors have the same opportunity to become respondents [8]. The number of respondents is 30 respondents. Interview method that used in this study is semi-structured interviews and informants are determined using purposive sampling technique. Field observations are performed to match the data obtained from the literature review and information gained from the questionnaires supported by the facts in the fields.

Data analysis

The data analyzed using a scoring analysis, descriptive analysis and SWOT analysis. Scoring analysis is performed for analyzing questionnaires that completed by the visitors to assess the tourism resources including infrastructure, coolness, shade, cleanliness, and safety. Descriptive analysis is a method to describe all qualitative and quantitative data. Data analysis methods used to analyze the data is a SWOT analysis (Strong, Weakness, Opportunity and Threat). SWOT analysis is used to identify the relationships between ecotourism resources with other resources [9].

Table 1.Matrix of SWOT

Internal Audit / External Environment	Strenght	Weakness
Opportunities	S-O	W-O
Threat	S-T	W-T

Description:
SO: use the power optimally to seize opportunities.
ST: use the power optimally to anticipate threats, and trying to make it into opportunity.
WO: minimize weaknesses, to grab opportunities.
WT: minimizing weaknesses to prevent the threat.

RESULT AND DISCUSSION

Historical Plantation

Kalibendo Plantation, Banyuwangi, East Java is one of the largest plantation areas in Indonesia in 1900 (Fig.2). The plantation is a commercial plantation and capitalistic which had been applied by the Dutch and the Japanese against the colonies. Socio-cultural in a coffee plantation owned by BUMN/PDP generally still maintain the local culture community by holding local culture rituals for each activity from picking up until the harvest time. The cultural activities are related to the company's interests in order to maintain the production continuity concerning to the employment and security. The findings show that these plantations are one of the largest plantations in Indonesia because there are 123 coffee plantations established since 1900 to 1967 (Observation).

Kalibendo Plantation, Banyuwangi constitutes coffee, rubbers, cloves plantations and some other plants (Fig. 3) which estate is managed by PT. Kalibendo in cooperation with the local society and local government. One of the plants at Kalibendo Plantation is coffee. The variety of coffee which grow in Kalibendo Plantation are Arabica and Robusta. The private entrepreneurs founded the coffee company across the region because the climate and soil condition suitable for planting the coffee. Moreover, the areas are inhabited [10,11].

Figure 2. Entry gate to alibendo Plantation; a) The entrance of Kalibendo Plantation, b) Kalibendo Plantation

Figure 3. Some types of plants in Kalibendo plantation; a) Clove, b) Coffee, c) Rubber, d) Corn in rubber.

Tourism Attraction

One of tourism attractions at Kalibendo plantation, Banyuwangi, East Java, is Kalibendo agro-tourism. It is located at the west of Banyuwangi about 20 km from the city central. Kalibendo tourism objects are located in the highland therefore the temperature is relatively cool and still natural. The landscape characteristics in the plantation are cloves, coffee, and rubber. These conditions are suitable for the educational ecotourism activities for the tourists.

The Accessibility of Tourism Object

Kalibendo plantation is located about 15 km from the Banyuwangi city central. There is also accessibility from Ijen Crater. From Banyuwangi city center, the tourist can go directly to the Sasak Perot bus station at Bakung village, Glagah District. Next, the tourist remains straight towards to the west until find the junction of 'Barong' statue at Banjarsari village. Next, the trip goes to Kampung Anyar village. After entering the the gate of PT. Kalibendo Plantation, the tourists can park their vehicle in parking area in front of the meeting building. The trip can be done by land transport or tour services. From Juanda Airport, it may take about 7 hours to go there and if it comes from the Ketapang Port, it takes about 90 minutes. The road condition is quite good and decent in the form of slopes and hills (Observation).

Seasonality of Tourism Object

Kalibendo tourism object is crowded during the noon until afternoon. Moreover, this place may become the alternatives place for tourists after they climb Ijen mount. There are also provided tour package covering Ijen Mount and Kalibendo tourism objects could be an alternatives after offering Ijen Crater. The tourism objects are also full of visitors on holiday or when the time for harvesting rubber, coffee, and cloves at Kalibendo agro-tourism because the tourists are interested in educational value from harvesting time.

Facilities

In the area of Kalibendo tourism objects, there is a parking area provided by the manager. The standard facility such as toilet and simple restaurant was found. The quality of standard was limited. In order to maintain area cleanliness, some baskets and bins are provided in every corner of the place.

Characteristics of Respondents

One of the respondents' characteristics is gender because gender determines what kind of tourism objects that are chosen by the tourists. Based on the Table 2, the numbers of male respondents are greater than female respondents with a ratio of 67% to 33%. This suggests that men prefer traveling rather than women. The age of respondents are related to the physical condition in visiting tourism objects and respondents' productivity. The visitors are categorized into three groups based on their age, there are 16-23 years old, 24-31 years old and 32-38 years old. The range of respondents' age between 24-31 years old has the highest percentage compared to the other age range. The range age between 24-31 years old classified as teenagers. Teenagers or youths tend to like an adventure for seeking new experiences.

The tourists' origin in determining the respondents' characteristics are categorized into two, there are domestic and non-domestic. Domestic tourists are local people of Banyuwangi, while non-domestic tourists are comes from abroad. Based on Table 2, domestic tourists have a higher

percentage of 57% compared to non-domestic tourists reach 43%. The manager of Kalibendo must be developed new strategy in order to seeking other visitors from other cities. When the percentage of non domestic tourists are higher, it could be concluded that many of non domestic tourists are already known the tourism objects.

Respondents' occupation in this study was divided into five groups: housewives, employees, students, civil servants and entrepreneurs. Entrepreneurs respondents have a higher percentage, i.e. 43%. Employees and students have the same percentage of 20%. Housewives and civil servants have less percentage of 10% and 7%.

Table 2. The Characteristics of Visitors' Respondent

Characteristics		Amount	Percentage (%)
Gender	Male	20	67
	Female	10	33
Age	16-23	6	20
	24-31	15	50
	32-38	9	30
Origin	Domestic	17	57
	Non-domestic	13	43
Occupation	Housewives	3	10
	Employee	6	20
	Student	6	20
	Civil Servants	2	7
	Entrepreneur	13	43
Visiting intensity	First	14	47
	Many times	16	53

The visiting intensity indicates that whether or not the tourism objects are attracting. The more often of tourism objects are visited, it means that the tourism objects are attracting. The table above indicates that the respondents who visit Kalibendo many times are higher than the respondents who visit for the first time. It means that Kalibendo waterfall is categorized as interesting tourism object to visit.

Visitors' Assessment towards Tourism Objects

In general visitors assess Kalibendo Plantation tourism objects as moderates from the indicators of 'Sapta Pesona' (Table 3). It shows that visitors quite satisfied when visiting Kalibendo Plantation tourism objects. However, it is still need the improvement of each component of 'Sapta Pesona' in order to increase the visitors' satisfaction on Kalibendo Plantation tourism objects. By increasing the level of visitors' satisfaction, hopefully in the future, the tourism objects organizers could increase the number of visitors.

Policy Development of Tourism

SWOT analysis on Kalibendo Agro Tourism was showed in Table 4. Based on Table 5, it shows that the attraction between internal and external factors is at variable points (X) 0.92 and (Y) 0.12 (Fig. 4). These coordinates are in the first quadrant, therefore it requires a progressive strategy that utilizes the power of opportunity, and Strength factors for the development of Kalibendo Plantation tourism object.

Table 3. The distribution of respondents' assessment for *Sapta Pesona* components on Kalibendo Plantation tourism objects.

Component	Categorizes	Total visitors	Percentage (%)
Security	5-11 (poor)	0	0
	12-18 (enough)	25	83
	19-25 (good)	5	17
Order	4-9 (poor)	0	0
	10-15 (enough)	27	90
	16-20 (good)	3	10
Hygiene	4-9 (poor)	0	0
	10-15 (enough)	30	100
	16-20 (good)	0	0
Coolness	**5-11 (poor)**	15	50
	12-18 (enough)	15	50
	19-25 (good)	0	0
Beauty	4-9 (poor)	0	0
	10-15 (enough)	25	83
	16-20 (good)	5	17
Friendliness	4-9 (poor)	4	13
	10-15 (enough)	26	87
	16-20 (good)	0	0
Memories	3-7 (poor)	1	10
	8-12 (enough)	26	87
	13-15 (good)	3	3

Table 4. Identify the SWOT components

Strength (S)	**Weakness (W)**
1. The road infrastructure is good	1. Lack of information on the plantation board
2. The agro-tourism activities	2. Number of Bins is still inadequate
3. The fresh air in the tourism objects	3. The lack of vegetation in the way to tourism objects
4. The hospitality of the local people	4. Peoples' participation in managing and promoting the tourism objects is low.
5. There are two natural attractions at tourism object	
Opportunities (O)	**Threats (T)**
1. The location is close to the Ijen crater tourism objects.	1. There are coffee factory in the plantation area
2. The existence of government support in promoting tourism objects in Banyuwangi	2. Trash
3. The high intensity of domestic and foreign tourists visit	3. Sometimesthe visitors are over capacity during the holiday season

Table 5. The Results of External and Internal Factors Analysis

Internal Factor Attractive Score/IFAS	3.38	*Eksternal Factor Attractive Score*/EFAS	3.49
Strength score (S)	0.62	Opportunity score (O)	0.49
Weakness score (W)	0.38	Threats score (T)	0.52
S-W	**0.92**	**O-T**	**0.12**

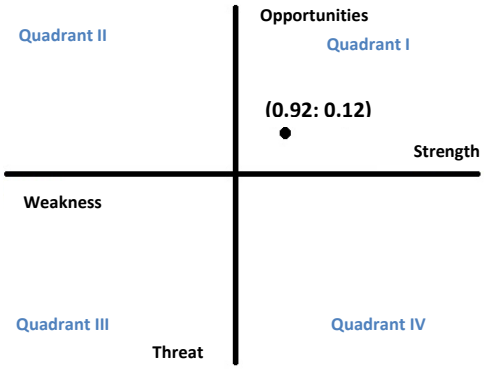

Figure 4. SWOT analysis Quadrant of Development Strategy on Kalibendo Tourism Objects

By looking at all the potential in the Kalibendo Plantation tourism objects, there are alternative strategies that could be performed as follows.

1. The cooperation between the local government and the organizer of tourism object by PT. Kalibendo (S_3-O_2). By the collaboration between local government and private, the entrepreneurs could increase the quality of Kalibendo Plantation tourism objects to be developed as ecotourism.
2. The organizer of tourism objects organizes the education about environmental conservation (S_3-O_3). By giving advices to the organizer to conduct an education-based program for tourists such as not littering, not picking the plants, etc.
3. The improvement of local human resources through training (S_4-O_2). By collaborating with private ecotourism entrepreneurs, NGOs, and government to conduct training such as ecotourism socialization in order to boost the communities' economy around the tourism objects area without damaging the environment.
4. Increase the facilities for tourists (S_4-O_3). By offering ODTW (*Objek Daerah Tujuan Wisata*/Tourism Objects Destination) such as biodiversity (flora and fauna), the beautiful landscape, tourism products (e.g. tracking, outbound, camping, etc.) to attract foreign and domestic tourists.
5. The local government of Banyuwangi should integrated tour packages with Ijen crater sightseeing (S_1-O_1). By making linkage between travel units such as tour packages, it is expected that it can increase the amount of foreign and domestic tourists who visit the tourism objects if the route has been determined.

CONCLUSION

Kalibendo plantation is agro-tourism area which can be developed into ecotourism that attractive for domestic and foreign tourists who

want to enjoy the concept of ecotourism. Ecotourism development at Kalibendo Plantation must involve the local government and community optimally in every process. This involvement must be performed due to give a wide space for the local community to enjoy the benefits from ecotourism development. The collaboration between other institutions could be enhanced, such as the collaboration between travel agents, students' organization, in order to create creative ideas for the development of ecotourism. Besides, their involvement are expected to strengthen ecotourism concept at Kalibendo Plantation.

REFERENCES

[1] Harmini, A. A. 2005. Community management in Wenara Wana tourism objects, Padangtegal, Ubud towards sustainable tourism. Graduate Program, Udayana University, Denpasar, Bali. Thesis.

[2] Ross, S. and G. Wall. 1999. Evaluating ecotourism: the case of North Sulawesi, Indonesia. Tourism management 20(6), 673-682.

[3] Damanik, J. and H. F. Weber. 2006. Ecotourism planning: from theory to applications. PUSPAR UGM and Publisher Andi. Yogyakarta.

[4] Cochrane, J. 1996. The sustainability of ecotoursim in Indonesia. Environmental change in South-East Asia: People, politics and sustainable development, 237-259.

[5] Setyadi, I. A., Hartayo, M. Agus and M. Harini. 2012. Ecotourism development strategy Sebangau National Park in Central Kalimantan. Journal of Management and Agrobusiness 9 (1), 1-12.

[6] Zakiyah, Z., S. Indriyani and L. Hakim. 2013. Pemetaan sebaran dan karakter populasi tanaman buah di sepanjang koridor jalur wisata Desa Kemiren, Tamansuruh, dan Kampunganyar, Kabupaten Banyuwangi. Journal of Indonesian Tourism and Development Studies 1(2), 46-51.

[7] Suriani, N. E. and M. N. Razak. 2011. Pemetaan potensi ekowisata di Taman Nasional Baluran. Jurnal Masyarakat, Kebudayaan dan Politik 24(3), 251-260.

[8] Thompson, S. K. 2012. Sampling 3 Ed. Wiley.

[9] Rangkuti F. 2005. Analisis SWOT teknik membedah kasus bisnis. PT Gramedia Pustaka Utama. Jakarta.

[10] Siswoputranto. 1993. Kopi internasional 2 nasional. Kanisius. Yogyakarta.

[11] Statistic Center Banyuwangi. 2014. Banyuwangi dalam angka. Satistic Center Office Banyuwangi.

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Ecotourism Attractions, Level of Satisfaction and Management of *Air Terjun Kembar* in Kampung Anyar Village, Banyuwangi

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Abstract

Air Terjun Kembar (Twin Waterfall) in Kampung Anyar, Banyuwangi is an alternative tourist travel destinations around the Ijen crater. This study aims to determine the history, attractions, eco-tourism potential, the level of customer satisfaction and further management for the area. The method is carried out by semi-structured interviews, questionnaires based on the satisfaction level of *Sapta Pesona* (standard value) and SWOT Analysis to the management. These results indicate that previously Kembar Waterfall Kampung Anyar was used for water resources. Then, in 2014 began to be managed by the group of people in Kampung Anyar. SWOT analysis shows that the management is good. In some aspect however it needs to be improved.

Keywords: Ecotourism, Kampung Anyar, Sapta Pesona, SWOT.

INTRODUCTION

Banyuwangi is the most eastern region that was in the area of East Java which is now better known as *Sunrise of Java*. Banyuwangi Regency now been established as tourist areas by the local government. The most famous attractions in Banyuwangi are tour to Ijen crater, the Red Island, and G-Land. However, there are several tourist attractions located around these tourist attractions. Travel to Ijen Crater which is located around Glagah districts, there are several natural attractions which is quite interesting. One of them is located in the village of Kampung Anyar, namely the *Air Terjun Kembar* (Twin Waterfall). *Air Terjun Kembar* tourism has recently been managed by local people using village funds and assistance from the local government. *Air Terjun Kembar* Tourism in Kampung Anyar saves one potential that is quite interesting. Moreover, if it dealt seriously, then it would make this area into a tourist destination alternative to the Ijen crater. Tourism management will be better again, if ecotourism being developed. Ecotourism is nature tourism with mild impact which causes the maintenance of species and their habitat direct role in the preservation and indirectly by providing local public view, to make the local community to put value, and protect nature and other lifes as revenue sources [1]. Meanwhile, according to the Regulation of the Domestic Minister No. 33 of 2009 on Guidelines for Ecotourism Development in the Region, Ecotourism is nature tourism activities in the area of responsibility with regard elements of education, understanding, and support for the efforts of conservation of natural resources, as well as increased income of local communities. In concept of ecotourism, it can be defined as a concept of sustainable tourism development which aims to support the efforts of environmental conservation (nature and culture) and increase public participation in the management, so that economic beneficially for the local community [2].

Air Terjun Kembar in Kampung Anyar is administratively located in District of Glagah, Banyuwangi. It is one of the new tourist areas that are on the road to Ijen Creater Tourism. This tour is managed by the local community by establishing a community. Previously, the Waterfall is a place for people to obtain water. Around 2014, group of residents tried to repair the access road and also build infrastructure. Thus, it serves additional tours for traveler from Ijen Creater Tourism. *Air Terjun Kembar* in Kampung Anyar is not charge for admission, so that in the holiday it becomes one of the excellent low budget tours in the area. Meanwhile, the community obtains benefit from vehicle parking tickets, water cleanliness of the toilets and also from trade in *Air Terjun Kembar* tour of Kampung Anyar. In addition to the Kembar Waterfall, there is another waterfall which is called the *Air Terjun Tunggal* (Single Waterfall).

Air Terjun Kembar Tourism in Kampung Anyar needs to be well and sustainably managed. This

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study aims to determine the history, attractions, eco-tourism potential, the level of customer satisfaction and further management.

MATERIALS AND METHODS

This research was conducted on October 2015 at *Air Terjun Kembar* in Kampung Anyar Village, District of Glagah, Banyuwangi (Fig. 1).

Figure 1. Location of Kampung Anyar

Field Observation

Field observation was carried out through tourism potential object in area of *Air Terjun Kembar*. Potential object for tourism was listed and descriptive characteritisc of object was drawn. In order to generate comprehensive information regarding tourist object, an indepth interviews with key person in water fall area was implemented. Focus of the intervews was the histrory of the discovery of *Air Terjun Kembar* as tourist object and effort to convert and promotes waterfall as tourist attraction.

Questionnaire on Tourist Satisfaction

The quisionare was distribute to the 30 tourist who visit *Air Terjun Kembar*. Respondents selection is done randomly. The quisioner components in question is constructed based on the *Sapta Pesona*. Sapta Pesona is a concept that is issued by the Ministry of Tourism and Creative Economy. *Sapta Pesona* is seven elements of the charm that must be realized for the creation of a conducive environment and ideal for the development of tourism activities in a place that encourage tourists to visit [3]. *Sapta Pesona* has seven aspects: security, order, cleanliness, coolness, beauty, friendliness, and impression. The results will be analyzed in Microsoft Excel and seen the percentage level of satisfaction.

SWOT Analysis

SWOT analysis is the analysis conducted on four things: Strengh, Weakness, Oportunity and Threath. SWOT analysis is used Management to ecotourism resource relationships with other resources [5]. The purpose of the SWOT analysis in this study is to determine the strategy that should be adopted for the development of *Air Terjun Kembar* attraction. The assessment of each case can be determined on quadrant of SWOT analysis (Table 1). Furthermore, it can be seen in terms of the development on the tourist attraction.

Table 1. Quadrant SWOT Analysis

External/Internal	Strength	Weaknes
Opportunities	O – S	0 – W
Threat	T – S	T – W

RESULT AND DISCUSSION

History of *Air Terjun Kembar*

There are many waterfall in Banyuwangi, some of them located in the location that is quite hidden and challenging. One of the Waterfall that is still fairly new known and has relatively easy access is a waterfall located in the Kampung Anyar villages, District of Glagah, Banyuwangi. Three waterfalls are located in one location and the position are very closely together, so that some called it as the *Air Terjun Kembar* or *Air Terjun Jagir* or *Air Terjun Kampung Anyar*. Initially this waterfall enabled residents to the water source, and then in 2014, a community built access roads, toilets and food stalls to be used as tourist attractions [6].

This Kampung Anyar Village Waterfall comes from three springs that appear on top of a cliff, i.e. springs of *Jagir*, *Pawon* and *Buyut Ijah*. The most interesting Waterfall here is the springs of *Pawon*, because the water flowing is not too heavy and fairly wide. The atmosphere is cool scent of mountains give coolness to the end that came to the place. While enjoy the view of the waterfall, tourist can play/shower under the waterfall and takes pictures of stream. Near to the two waterfalls, located about 200 m west there is *Kategan* Waterfall. To get to the Kategan Waterfall, tourists can follow the river as far as 100 m upstream. Kategan Waterfall derived from waterfall sources that falls to Kalibendo. This waterfall is higher than the two previous water-falls and had a fairly heavy flow of water [7].

Access to this area is easy, takes only 20 minutes from downtown Banyuwangi westward to the Kampung Anyar Village about 15 km. The tourist area around the waterfall reserved parking areas are mostly located in front of houses and stalls set up by locals. From the parking area, tourist need to walk down the cliff

for 100 m, on the middle of the trip we will meet a very beautiful view of the cliff, with pieces of rock that sticks like a shiny diamond carved chunks if exposed by water runoff [8].

Ecotourism Attractions

Air Terjun Kembar is the potential ecotourism attractions. Air Terjun Kembar itself is derived from the flow of the river in the village of Kampung Anyar. A pool was built at the bottom of Kembar Waterfall, constructed by a group of local people. The pool can be used for bathing and swimming by tourist. Around the waterfall, there is also toilets and food stalls which is managed by goverment (PDAM-Local Water Company).

Beside the *Air Terjun Kembar*, there is one more ecotourism attraction in the area, namely *Air Terjun Tunggal* (Fig. 2), which is at the north side of *Air Terjun Kembar*. For passing this *Air Terjun Tunggal*, tourists can tracking passed the river. Around the river tourists are also treated by the view of plantation residents. To go to *Air Terjun Tunggal*, travelers from the entrance immediately turn to the left, while the right side is *Air Terjun Kembar*. Pathway to *Air Terjun Tunggal* traversed by walking on the riverbank. After walked about 10-15 minutes, the visitors would have reached the *Air Terjun Tunggal*. In *Air Terjun Tunggal* tourists can see the waterfall with a height of about 50 m. However, there is no facilities in *Air Terjun Tunggal*, conversely to facilities (toilets and food stalls) in *Air Terjun Kembar* (Fig.3).

Figure 2. *Air Terjun Tunggal*

Ecotourism Potential of *Air Terjun Kembar*

The waterfalls in Kampung Anyar Village are specially located because visitors will be able to enjoy three Waterfall at once in one place, *Air Terjun Kembar*. About 20 m from the *Air Terjun Kembar*, there is another *Air Terjun Tunggal*, although it is not as beautiful as the *Air Terjun Kembar* because there are buildings on the top of it and there was washing spills from the residents or the local community. However, as a whole, it still does not detract the beauty of the waterfall (Fig.4). In addition, there is also a waterfall as local people called, the *Kategan* Waterfall which is located about 300 me to the west. It is also as exotic as *Air Terjun Kembar* because it falls comes from Kalibendo streams instead of the spring so that the water discharge more rapidly than *Air Terjun Kembar*. To go to the location of the waterfall, there is relatively difficult road that must be passed because through down shrubs, trees and river flow. However, visitors should not be worry because it does not need to take a long time to reach the location.

Besides the beauty of the waterfall, the potential objects which can still be enjoyed in the village is a slope of 90° cliff that has a unique shape. Prism protrusions are resembling stone diamond flakes. This cliff is quite interesting for extreme sports enthusiasts because of its very challenging height given by the slope of the cliff to reach 90°.

Air Terjun Kembar is located not far from the plantation of Kalibendo. Perhaps many people have passed but was not aware of its existence. Location of the waterfall is approximately 1 km east of Kalibendo. In addition to the road conditions are good, the location is also located on the edge of the road makes it easy to reach. Once entering the village we will be faced with a view of trees and farm/ricefield right way. Bounded by cliffs which beneath is clear water river. Among the cliff, there are three Waterfall that were located very close together.

Tourist Satisfaction Level

Waterfall tourist visitors of *Air Terjun Kembar* in Kampung Anyar are 55% female and 45% male, with majority of >50% visitors are high school students (Fig.5). The results of questionnaires shown that the level of satisfaction of each factor is fairly high. This can be seen in the table that the satisfaction level of each factor is over 50% (Table 2). Thus it can be said that *Air Terjun Kembar* tour visitors satisfied on the existed attractions.

Figure 3. Facilities at *Air Terjun Kembar* (stalls and toilets)

Table 2. Tourist Satisfaction Level Based on *Sapta Pesona*

Sapta Pesona	Satisfaction Level (%)
Security	61.16
Order	60.48
Cleanliness	64.52
Coolness	78.45
Beauty	66.94
Friendliness	67.30
Impression	66.24

While the coolness factor has the highest satisfaction level of 78.45%. The environment is still beautiful and yet so much potential for the development of the area. In addition, the location of the waterfall at the foothills of Mount Ijen adds the atmosphere of coolness. While the order is a lowest factor level of satisfaction for 60.48%. This could be due to the lack of personnel in the sights. In addition, there is no admission charges that makes this attraction has no significant revenues yet, thus the order becomes less. Because, if there is admission and significant revenues from the attraction , the funds could be used to pay officers so that order can be well improved.

SWOT Analysis

Assessment of SWOT analysis was performed on each of these factors (Table 3). Thus obtained quadrant SWOT analysis (Fig.6) than can be used to plan appropriate strategies for the Ecotourism development in *Air Terjun Kembar* in Kampung Anyar [9]. The suitable strategies for this ecotourism development determine in quadrants based on the analysis.

The location of the strategy quadrant is in first quadrant (Fig.6), which means that the strategy in the management of *Air Terjun Kembar* travel is appropriate. However, it should be improved further to attract more visitors. Especially in the field of cleanliness, such as less trash on the road to the *Air Terjun Tunggal*.

Figure 4. *Air Terjun Kembar*, Kampung Anyar Village

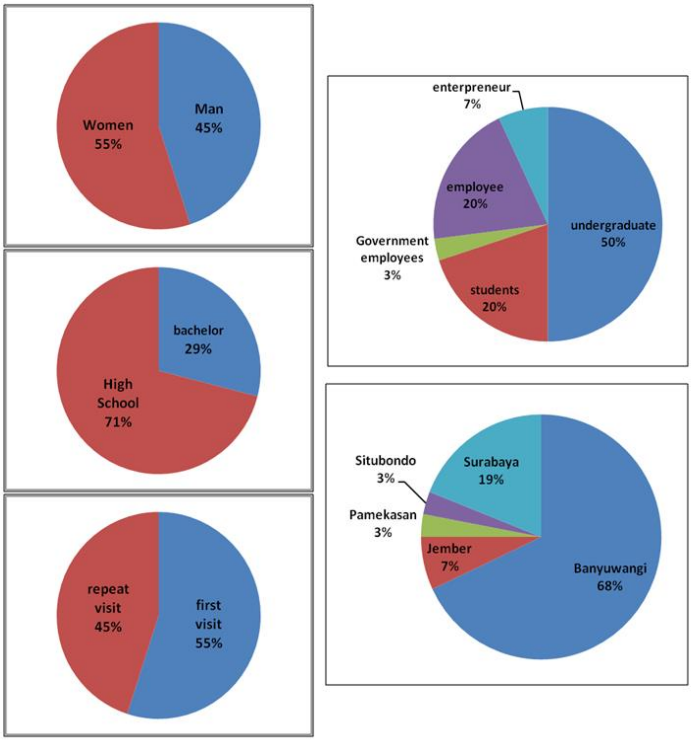

Figure 5. Chart of Data Visitor in *Air Terjun Kembar*

Table 3. SWOT Analysis

Strengths (S)	**Weaknesses (W)**
Environment unspoiled	Facilities and infrastructure are inadequate
Attractive waterfall	Garbage is strewn
There is a natural swimming pool	Lack of personnel in the tourist area
Local people are friendly to visitors	The lack of promotion of tourist areas
Opportunities (O)	**Threat (T)**
Adjacent to the tourist area of the Ijen Crater	Many visitors on certain days
As one of the alternative tourist destination	Some people have not been involved in the management
Support from local government	The opportunity for accumulation of garbage on holidays
The management is independent by the local community	

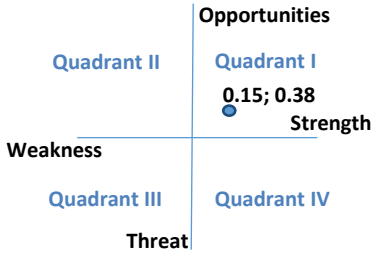

Figure 6. Quadrant of SWOT Analysis

CONCLUSION

Air Terjun Kembar was first functionalized as a resource of water, then in 2014 managed by community and used as tourist attractions. Most of the visitors are students. The highest satisfaction levels of visitors is the coolness factor, while order is being the lowest factor. Attractions offered is parallel Waterfall so-called *Air Terjun Kembar*, plus *Air Terjun Tunggal* that can be accessed by tracking. The potential of the access to the *Air Terjun Tunggal* needs to be improved, especially in the presence of trash and roads need to be built. Based on the SWOT analysis, management of *Air Terjun Kembar* are fairly good however needs to be improved, especially on the access to the *Air Terjun Tunggal*.

REFERENCES

[1] Goodwin, H. J., I. J. Kent, K. T. Parker and M. J. Walpole. 1997. Tourism, conservation and sustainable development Vol I. Unpublished.

[2] Hadinoto. 1997. Perencanaan pengembangan destinasi pariwisata. Gramedia. Jakarta.

[3] Ministry of Tourism and Creative Economy. 2012. Buku pedoman kelompok sadar wisata. Ministry of Tourism. Jakarta.

[4] Moleong, L. J. 2005. Metodologi penelitian kualitatif. Remaja Rosdakarya. Bandung.

[5] Damanik, J. and H. F. Weber. 2006. Perencanaan ekowisata: dari teori ke aplikasi. Tourism Center of Gadjah Mada University and Andi Publisher. Yogyakarta.

[6] Banyuwangibagus. 2014. Air terjun *Three in One* Kampung Anyar. Available at: http://www.banyuwangibagus.com/2014/09/air-terjun-three-in-one-kampung-anyar.html.

[7] Budi, K. 2015. Segarnya Air Terjun Kembar Kampung Anyar. Avaliable at: http://travel.kompas.com/read/2015/03/31/082117427/Segarnya.Air.Terjun.Kembar.KampungAnyar

[8] Banyuwangitourism, 2015. Air Terjun Kampung Anyar. Available at: http://banyuwangitourism.com/content/air-terjun-kampung-anyar.

[9] Statistic Center. 2014. Analisis SWOT. Available at: daps.bps.go.id/file_artikel/66/Analisis%20SWOT.pdf.

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Fruit Diversity for Agrotourism Development in Rawa Bayu, Bayu Village, Songgon, Banyuwangi

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Abstract

Rural area in around Rawa Bayu tourism object has numerous fruit trees species which is possible to be integrated in the development of nature based tourism in Rawa Bayu. The aims of the study were describing the diversity of fruit species, mapping geographic positions of fruits plants grows, and exploring the local perspective about fruit plants species in its relationship with agrotourism development. Research methods consisted of fruit plant species exploration in Rawa Bayu ecotourism and its surrounding area, mapping the coordinates geographic using GPS (Global Positioning System), and implementing semi structured interviews with local respondends. Exploration was done by visiting Rawa Bayu ecotourism and its surrounding area, especially local people's yard. The fruit plant species was observed morphologically. The geographic position of fruit plant species was mapped using GPS. Semi structured interviews were implemented to 20 respondents, they are consist of locall community, tourist and local tourist in Rawa Bayu. Data was analized descriptively. This research found about 13 fruit plant species grows in Rawa Bayu area. Fruit plant species were potential for rural tourism development program. The most common fruit plant species found were durian (*Durio zibethinus*), salacca (*Salacca zalacca*), banana (*Musa* sp.), guava (*Syzygium aqueum*), jackfruit (*Artocarpus heterophyllus*), jengkol (*Archidendron pauciflorum*), langsat (*Lansium domesticum*), clove (*Syzigium aromaticum*), mangosteen (*Garcinia mangostana*), and avocado (*Persea americana*). Residents around Rawa Bayu ecotourism wishes the region became fruit agrotourism area to improve the people's economy.

Keywords: agrotourism, Banyuwangi, fruit conservation, tourist attractions.

INTRODUCTION

Indonesia is one of the countries that having highest biodiversity in the world. About 30,000 plant species are mostly live in the forest. There are only 4,000 sites have been identified. One of the existing biodiversity is the fruit crop. Fruit crops in Indonesia, especially in the area of forests and forest communities, are still not widely used optimally in the tourist industry which are currently being developed rapidly [1].

Agrotourism is an alternative of sustainable tourism which is part of the attraction in the form of agricultural businesses. Agrotourism activities were aimed to broaden the knowledge, experience, leisure and knowledge of the agricultural world [2]. The number of fruit trees in the area around the forest or settlements is like the implementation of agrotourism potential.

This study aimed to describe the diversity of fruit species and their spatial distribution around the attraction of Bayu Romo and the corridor along the Village of Rawa Bayu. The study also aimed to map fruit crops periodivity in one year and determine the public perception related to the potential development of agro-tourism potential of the fruit in Rawa Bayu.

MATERIALS AND METHODS

Study Site

Rawa Bayu is located in PERHUTANI area, Sambungrejo, Bayu Village, Songgon, Banyuwangi. It is located at the height of about 800 m asl. Rawa bayu is a swamp with many beautiful plants and preserved forest area around. Rawa Bayu has various tourist attraction such as swamp, religious tourism, tourism of Blambangan history, and fruit tourism. The most favorite fruit is Songgon's durians, which favored by many tourists. Songgon's durians are distinctive durian with red flesh of fruit and good taste. Various interesting attractions can be developed optimally to be fruit agrotourism [3].

Exploration of Fruit Plants in Rawa Bayu

Exploration of fruit plant surveyed on some location around Rawa Bayu, besides yard and farm. First, we interviewed local people about the type of fruit plants around Rawa Bayu and the one that growing at the yard in Bayu Village. Semi structured interviews were implemented to 20 respondents which is consisted of local community, tourist and local manager of Rawa Bayu ecotourism. Then mapping of fruit plants made

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from the observed fruit plant species. The geographic position of fruit plant species was mapped using GPS (Global Positioning System).

Mapping Distribution of Fruit Plants

The mapping begins with input data of fruit plants based on the text. Based programs text used is in the format storage of txt or csv. It used to input data vector for samples coordinates location in the form of text. Distribution map of fruit plants was made with software Quantum GIS (Geographic Information System). Data of distribution derived from the data that has been input based on the text. Distribution of fruit plants is featured in Quantum GIS in the form of vector, thus when processed it will appear as points of distribution. The addition of information map also made to increase the map clarity. Sensing is used to add information distribution of fruits plants by using Google Layers plugins.

RESULT AND DISCUSSION

Morphometric and Morphology Characteristic

Rawa Bayu has a lot of diversity of fruit plants. There are 10 species of fruit plants that have high dominance index, i.e. *Durio zibethinus*, *Salacca zalacca*, *Syzygium aqueum*, *Musa* sp., *Artocarpus heterophyllus*, *Garcinia mangostana*, *Archidendron pauciflorum*, *Persea americana*, and *Lansium domesticum*. Fruit plant has diversity in morphometric and morphology characteristic measurement to each species. This study use 10 replications to measure each species [4]. One of the measurement that conducted on the species is leaves' length and width. The measurement of leaves size of each species was shown in Fig. 1.

The fruits that found most around Rawa Bayu are *D. zibethinus* with tree habitus, height of ±25 m and diameters ±30 cm. Width and lenght of the leaves ±11 cm and ±4 cm. *Durio zibethinus* is a tree with tap root, woody stem and sympo-dial branching, single leaf, short stem, pinnate leaves, green colour in adaxial and brown colour in abaxial, ellipse shape, white flower, oval shape fruit, coated by sharp thorns outer (yellow)[5].

Salacca zalacca has short-stemmed palm habitus with height about ±6 m and diameters ±39 cm. Width and lenght of the leaves ±100 cm and ±50 cm. Stems has thorns. Midrib will be the poitn for flower and fruit to grow, fruit protection by thorns with triangular shape and brown colour skin. This plant is a monocot plant.

Syzygium aqueum is in the form of tree with height reached ±20 m and diameters ±17 cm. Width and lenght of the leaves ±26 cm and ±4.5 cm. Stems has thorns. Stems are woody and short segmented. Leaf consist of only a stalk and leaf. It has a true fruit.

Musa sp. is gigantic herbs with height ±2.5 m and diameters ±6 cm. Width and lenght of the leaves are ±95 cm and ±50 cm, consecutively. Stem consist of true and pseudo stem. The leaves of *Musa* sp. has a long elips leaf, wide and flat edges (easily tore). The fruit in the form of clumps.

Artocarpus heterophyllus is a tree with height ±12 m and diameters ±8 cm. Width and lenght of the leaves ±23 cm and ±5.5 cm, respectively. Tree of *A. heterophyllus* has a tap root and woody stem, have characteristic of single leaf, elips, and pinnate leaves. Flower is in the form of multiple flower. Fruit has a yellow colour and oval shape.

Garcinia mangostana has habitus of tree with height ±10 m and diameters ±17 cm. Width and lenght of the leaves are ±24.5 cm and 7.5 cm, respectively. *G. mangostana* has a woody stem, rounded with simpodyal branching and brown stem colour, single crossed leaves, brown fruit colour, rounded fruit with brown colour, and four leaves crown with elips shape and yellow colour. Fruit has a delicious taste [6].

Archidendron pauciflorum like a tree. Tree height ±10 m. Diameters ±34 cm. Width and lenght of the leaves are ±16.5 cm and ±4.5 cm, respectively. *A. pauciflorum* has a tap root, simpodyal branching, single pinnate leaves, fruit in the form of pods and flatten like a spiral. Fruit has a brown colour.

Syzigium aromaticum is height of ±12 m tree with diameters reached ± 225.5 cm. Width and lenght of the leaves are ±9.7 cm and ±3.5 cm, respectively. It has a tap root and monopodyal branching, multiple elips leaves, green colour and complete leaves, fruit and flower are red.

Persea americana has tree height of ±8 m and diameters ±12 cm. Width and lenght of the leaves are ±23 cm and ±4 cm, respectively. It has a tap a root and woody stems, brown colour, single elliptic pinnate leves, and multiple flower with yellow colour. Fruit have green or brown colour and fruit has delicious taste and good for health [7].

Lansium domesticum has tree height of ±7 m and diameters ±14 cm. The leaves is compund leaves with pinnate leaves. This plant is a dicotyledous plant. This plan has a woody stem, monopodyal brancing, the fruit has a brown colour.

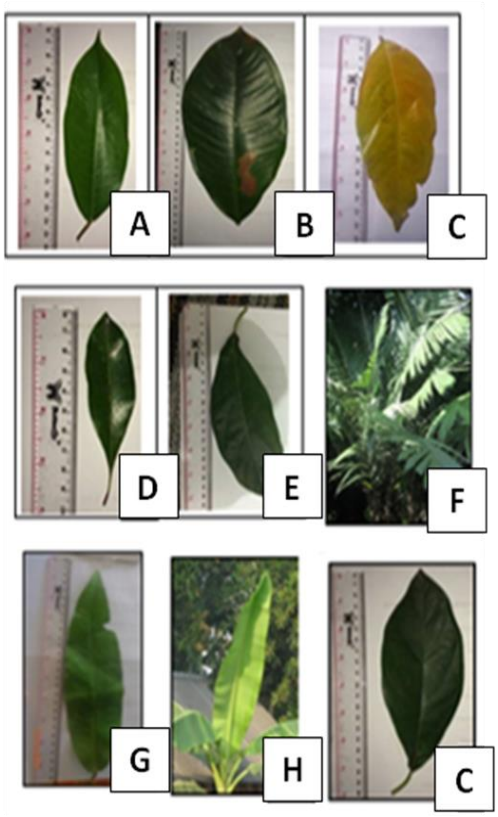

Figure 1. Leaves size: length and width
(A) *D. zibethinus; (B) G. mangostana; (C) A. pauciflorum; (D) S. aromaticum; (E) P. americana; (F) S. zalacca; (G) S. aqueum; (H) Musa* sp.; *(I) A. heterophyllus.*

Fruit plants periodicity

The periodicity is a state of rhythmic in plant life. This is indicated by the presence of flowers and fruit as indicators for the fruit plant reproduction [8]. Fruit plants periodicity was assessed for the 10 most common fruit plants in Rawa Bayu ecotourism (Fig. 2). *S. aromaticum* (Sar) is fruiting in May-September and harvesting once in October [9]. *S. aromaticum* that harvesting in September-November are in stages, depend on the type and maturity of fruit. *Durio zibethinus* (Dz) is fruiting on June-September and harvesting once in October. Harvest for durian should be done before the rainy season because rain can damage the quality of the fruit [10].

Musa paradisiaca (Mp) and *P. guajava* (Pg) are fruiting in May and November, while harvesting twice a year in June and December. *S. zalacca* (Sz) is fruiting in March and harvesting once in April. *A. heterophyllus* (Ah) is fruiting on February-September and harvesting once in October. *L. domesticum* (Ld) and *A. pauciflorum* (Ap) are fruiting in October and harvesting once in November. *P. americana* (Pa) is fruiting on July-November and harvesting once in December. *G. mangostana* (Gm) is fruiting on April-September and harvesting once in October.

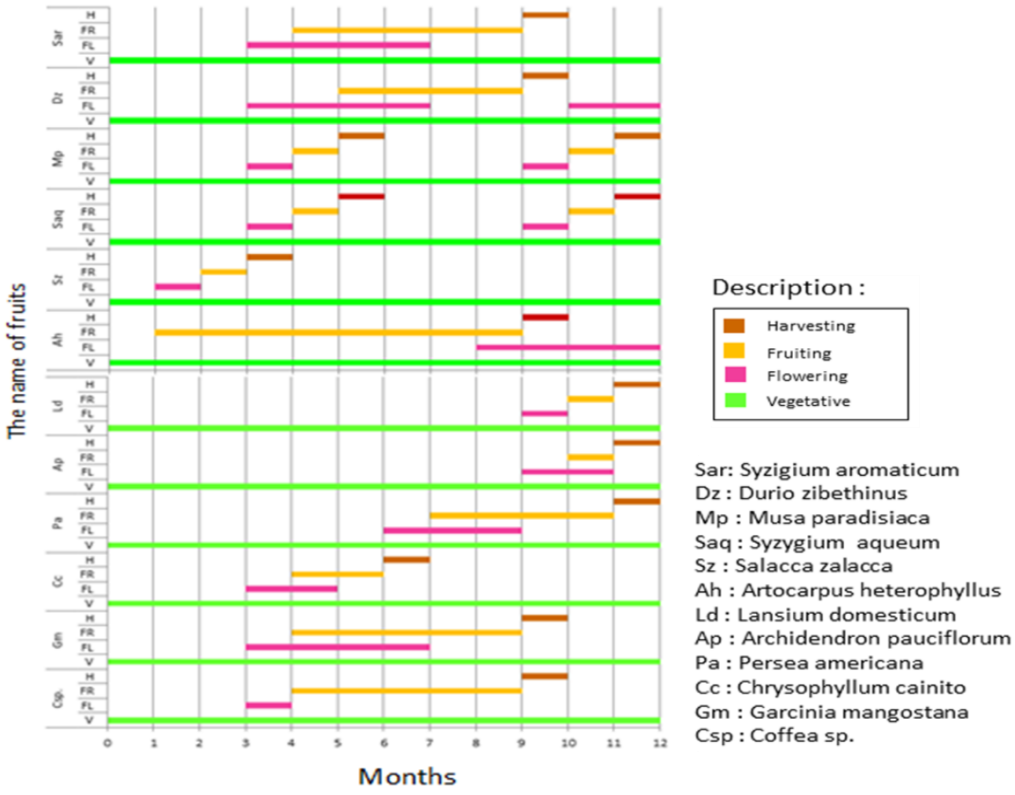

Figure 2. Fruit plants periodicity around RawaBayu

Public Knowledge about Fruit Crops

Communities around Rawa Bayu grow fruit that has its own advantages and disadvantages. According to respondents, the community hopes that the fruit trees that abound surround the area of Rawa Bayu can be used as agrotourism fruit that will increase local people's income.

Total of 90% local people used pesticides to cultivate fruit trees. Pesticides that were often used are urea and ZA. Fertilization is an attempt to increase the fertility of the soil to fasten flowering and fruiting of plants. In addition, fertilization is done so that the compo-sition of soil nutrients remain in balance so it can grow and reproduce optimally [11]. The profit of growing fruit is it could be sold but local people sometimes suffer losses due to crop failure caused by pests. Society hopes that fruit crops in the area of Rawa Bayu more productive so that it can be used as agrotourism.

The whole community knows a lot of fruit trees around the Rawa Bayu ecotourism area. The reason local people grow's fruit as much as 60% for the economic interest that is sold to collectors. Tirtawinata and Fachruddin explained that ecotourism is a combination of agriculture and tourism [12]. Agrotourism can increase farmers' income from both farm and total farm households. Most fruit season is in July to October. Local people know the price of fruit on the market in accordance with the season. As much as 70% of the fruit crop is cultivated with treatment. Difficulties to grow fruit due to pests is as much as 60%.

The existence of a wide variety of fruit around Rawa Bayu is one factor that can attract tourists. Based on interviews with visitors, it showed that travelers expect a collection of fruit crops in Rawa Bayu increased to be used as agrotourism fruits. Facilities and infrastructure should be improved so that more number of tourists will visit the area. The development of agriculture land into agro-tourism area will increase the tourist traffic which will contribute to an increase in the public opinion of tourist services [13].

About 70% of respondents knew of fruit trees around Rawa Bayu and 50% of respondents are interested in the fruit trees. Reasons of visitors attracted by the fruit crop are 20% as good, 10% liked, 10% is easy to get, and 10% because its free. Visitors on site purchase 50% of fruit around Rawa Bayu, because the fruit around Rawa Bayu tastes good (80%). If the surrounding of Rawa Bayu developed into Agrotourism, then the loss is seasonal. Because, at any season of the fruit can be found. Expectations of future visitors to agrotourism in Rawa Bayu is 30% of the respon-dents answered more visitors, 30% improved, and 20% more fruit trees.

Map Distribution of Fruit Plants

There are five kind of fruit which found around Rawa Bayu. After entering the gate, we found guava, banana, and durian. Other fruit can be found around Rawa Bayu (Fig. 3 and 4).

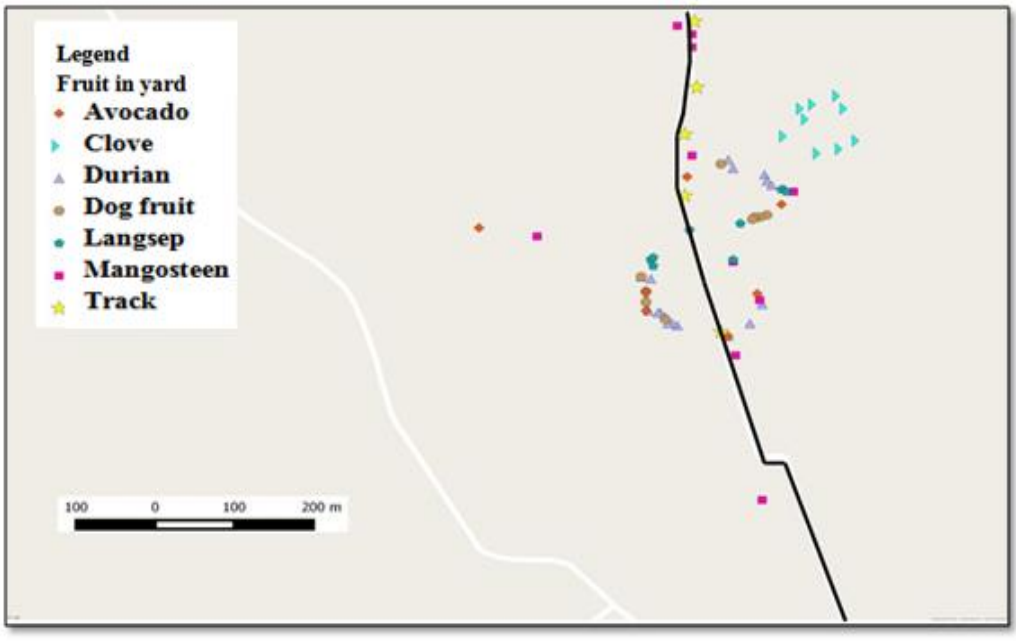

Figure 3. Distribution Map of Fruit Plants in the Yard

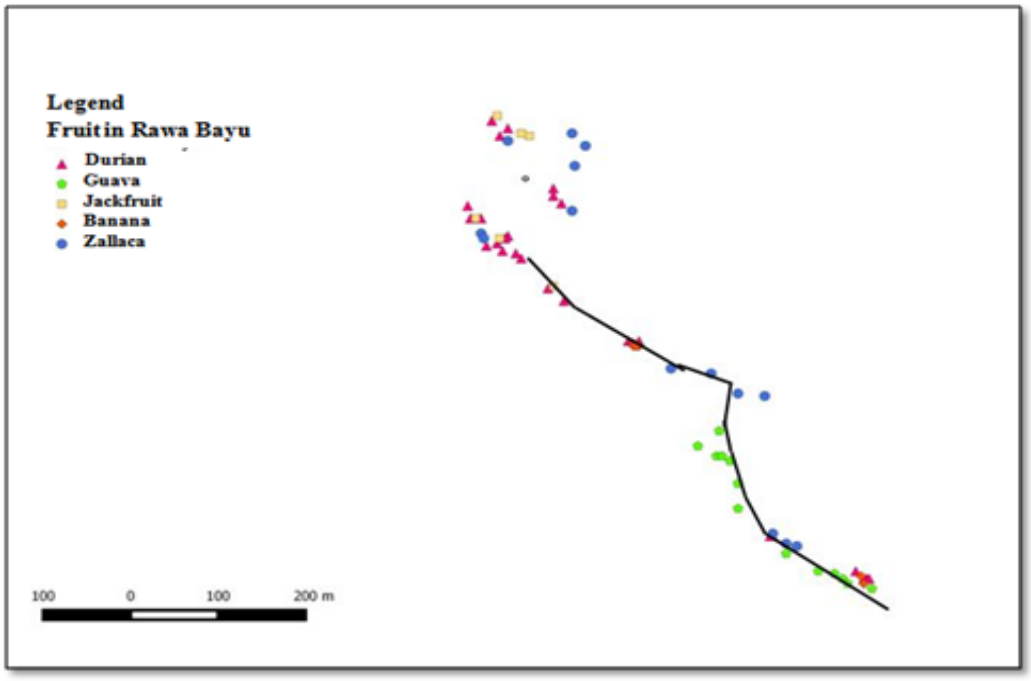

Figure 4. Distribution Map of Fruit Plants around Rawa Bayu

CONCLUSION

There are 13 fruit plants species which found around Rawa Bayu and there are 24 fruit plants species which found in the yard and farm. Total fruit plants found was 37 spesies, most fruits found were durian, zallaca, banana, guava, jackfruit, *jengkol*, clove, mangosteen, *langsat*, and avocado. Durian, zalacca, and jackfruit can be found around the swamp. There are banana, guava, and zallaca after entering gate. Along the way to the swamp there are guava, zallaca, and banana. Mangosteen, avocado, and langsep can be found around the residential area. Meanwhile, clove, *jengkol*, and durian can be found behind the house or local people's farm. The local people expect the region to be fruit agrotourism so it can increase their economy.

REFERENCES

[1] Anonim. 2007. Keanekaragaman jenis buah-buahan asli Indonesia dan potensinya. Research Center of Biology. Indonesian Institute of Sciences. Bogor.

[2] Fandeli, C. 2002. Perencanaan kepariwisataan alam 1 Ed. Faculty of Forestry. Gadjah Mada University. Yogyakarta.

[3] Adnyani, N. N. D., N. W. Sukerti and L. Masdarini. 2008. Strategi pengembangan agrowisata salak di Desa Sibetan, Kabupaten Karangasem. Ganesha University of Education. Singaraja.

[4] Yoeti, O. A. 2000. Ekosistem pariwisata berwawasan lingkungan. PT Pertja. Jakarta.

[5] Yuniarti. 2011. Inventarisasi dan karakterisasi morfologis tanaman Durian (*Durio zibethinus* Murr.) di Kabupaten Tanah Datar. Jurnal Plasma Nutfah, 1-6.

[6] Syatiaka, A. 2014. Karakterisasi tanaman Manggis *(Garcinia mangostana L.)* secara morfologis pada dua lokasi di wilayah Kabupaten Pesawaran. Lampung University. Bandar Lampung.

[7] Fazri, J. M. 2008. Identifikasi apokad (*Persea Americana* Mill.) dan kondisi budidayanya di Kabupaten Bogor, Jawa Barat. Bogor Agricultural University. Bogor.

[8] Zakiyah, S. Indriyani, and L. Hakim. 2013. Pemetaan sebaran dan karakter populasi tanaman buah di sepanjang koridor jalur wisata Desa Kemiren, Tamansuruh, dan Kampunganyar, Kabupaten Banyuwangi. Journal of Indonesian Tourism and Development Studies 1(2), 45-61.

[9] Megawati. 2010. Budi daya Cengkeh di Kabupaten Bantaeng dan Bulukumba, Sulawesi Selatan. Available at: http://www.worldagroforestry.org/.

[10] BAPPENAS. 2000. Durian (*Durio* sp.). Deputy Office Ministry of Research and Technlogy, Sector of Empowerment and Socialization of Science and Technology. Jakarta.

[11] Rochani, S. 2007. Bercocok tanam Rambutan. Azka Press. Yogyakarta.
[12] Tirtawinata, M. R. and L. Fachruddin. 1999. Daya tarik dan pengelolaan agrowisata. Penebar Swadaya. Jakarta.
[13] Budiarti, T., Suwarto and I. Muflikhati. 2013. Pengembangan agrowisata berbasis masyarakat dan usaha tani terpadu guna meningkatkan kesejahteraan petani dan keberlanjutan sistem pertanian. Jurnal Ilmu Pengetahuan Indonesia 18 (3), 200-207.

MANUSCRIPT SUBMISSION

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Abstract (Calibri 9 Bold Center)

This article illustrates preparation of your paper using MS-WORD (.doc or .rtf). Manuscript was numbered consecutively. Main text typed in two columns (67 characters), except title and abstract in one column. The manuscript should be written in English. The length of manuscript should not exceed 10 pages including table and figure in this format using A4 paper single space. The text should be in the margin of 3 cm up, down and left side, 2.5 cm on right side. Abstract includes the research purposes, research method and research results in one paragraph of *essay,* not *enumerative*. No citation in abstract. Abstract should not exceed 200 words. Keywords typed after abstract. (Calibri 9 Justify).

Keywords: manuscript, English, format, 5 words maximum (Calibri 9 Left)

INTRODUCTION*(Calibri 10 Bold, Left, Capslock)

All submitted manuscripts should contain original research which not previously published and not under consideration for publication elsewhere. Articles must be written in ENGLISH and manuscripts may be submitted for consideration as research report articles, short reports or reviews.

The introduction explains the background of the problem, the study of literature and research purposes. Some initial introduction paragraphs explain the problem and background to these problems [1]. The next few paragraphs explain the study of literature that contains recent knowledge development which is directly related to the issues. The last paragraph of the introductory section contains a description of the purposes of the study. (Calibri 10 Justify)

MATERIAL AND METHOD(Calibri 10 Bold, Left, Capslock)

This section describes the types of methods (qualitative, quantitative or mixed-method) with details of methods of data collection and data analysis [2]. This section also describes the perspective that underlying the selection of a particular method. (Calibri 10 Justify)

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Data Collection (Calibri 10 Bold, Left)

Explain the data collection methods, i.e. surveys, observations or archive, accompanied by details of the use of such methods. This section also describes the population, sampling and sample selection methods. (Calibri 10 Justify)

The use of English language should followed proper grammar and terms. Name of organism shoul be followed by its full scientific name in the first mention, in *italic* [3]. Author of the scientific name and the word of "var." typed regular. Example: *Stellaria saxatillis* Buch. Ham. First abbreviation typed in colon after the abbreviated phrase.

Author must use International Standard Unit (SI). Negative exponent used to show the denominator unit. Example: g l^{-1}, instead of g/l. The unit spaced after the numbers, except percentage [4]. Example: 25 g l^{-1}, instead of 25gl^{-1}; 35% instead of 35 %. Decimal typed in dot (not coma). All tables and figures should be mentioned in the text.

RESULT AND DISCUSSION (Calibri 10 Bold, Left, Capslock)

This section contains the results of the analysis and interpretation or discussion of the results of the analysis. Describe a structured, detailed, complete and concise explanation, so that the reader can follow the flow of analysis and thinking of researchers [5]. Part of the results study should be integrated with the results of the

analysis and the results and discussion are not separated.

Table

Table should be submitted within the manuscript and in separated file of *Microsoft Excel* (xls.). Table whould not exceed 8 cm (one column) and 17 cm (two columns). Table should be embedded in different page after references.

Table should be numbered in sequence. Table title should be brief and clear above the table, with uppercase in initial sentence. Vertical line should not be used. Footnote use number with colon and superscripted. Symbol of (*) or (**) was used to show difference in confidence interval of 95 and 99%.

Table 1. Example of the Table (Calibri 8.5 Left)

No	Point (Calibri 8.5 Justify)	Description
1		
2		
3		
4		
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Sources: Journal of PPSUB (Calibri 8.5 Left)

Figures

Figures should be in high resolution and well contrast in JPEG or PDF with the following conditions:

- Monochrome image (line art), figures of black and white diagram (solid/no shades of gray), resolution 1000-1200 dpi (dot per inch).
- Combination Halftone, combine figure and text (image containing text) and coloured graphic or in grayscale format. Resolution 600-900 dpi.
- Halftone, coloured figure or grayscale format without text. Resolution 300 dpi.
- Black and white figure should be in the grayscale mode, while coloured figures should be in RGB mode.
- Figure should not exceed the width of 8 cm (one column), 12.5 cm (1.5 columns) or 17 cm (two columns).
- Figures title typed clearly below the figure.
- Figure with pointing arrow should be grouped (grouping).
- Figures were recommended in black and white.
- Legend or figure description should be clear and complete. If compressed, the figure should be readable.
- Statistic graphic should be supplemented with data sources.
- If the figures come from the third party, it should have the copyright transfer from the sources.

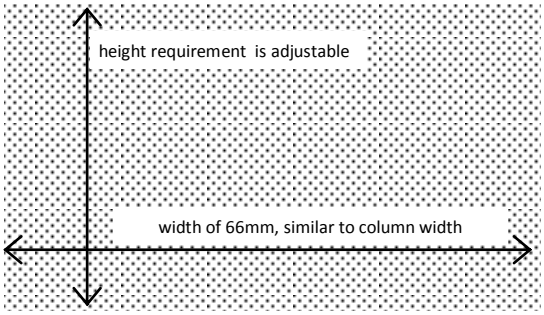

Figure 1. Illustration of Dimensional Figure of one column width. Figure dimension adjusted to the width of one column. Name the figure (diagram) written below the image. (Calibri 8.5 Justify)

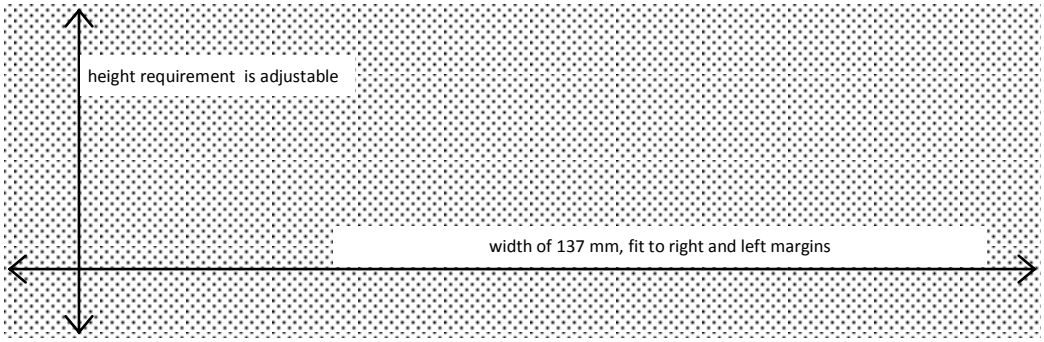

Figure 2. . Illustration of Dimensional Figure of two column width. Figure dimension adjusted to the width of two columns (137 mm). Figure were align top or bottom of the page. (Calibri 8.5 Justify)

References

1. Primary references include journal, patent, dissertation, thesis, paper in proceeding and text book.
2. Avoid self citation.
3. Author should avoid reference in reference, popular book, and internet reference except journal and private ana state institution.
4. Author was not allowed to use abstract as references.
5. References should been published (book, research journal or proceeding). Unpublished references or not displayed data can not be used as references.
6. References typed in numbering list (format number 1,2,3,…), ordered sequentially as they appear in the text (system of Vancouver or author-number style).
7. Citation in the manuscript typed only the references number (not the author and year), example: Obesity is an accumulation of fat in large quantities which would cause excessive body weight (overweight) [1]. Obesity is a risk factor of diabetic, hypertension dan atherosclerosis [2].

CONCLUSION (Calibri 10 Bold, Left, Capslock)

Conclusion of the study's findings are written in brief, concise and solid, without more additional new interpretation. This section can also be written on research novelty, advantages and disadvantages of the research, as well as recommendations for future research. (Calibri 10 Justify)

ACKNOWLEDGEMENT (Calibri 10 Bold, Left, Capslock)

This section describes gratitude to those who have helped in substance as well as financially. (Calibri 10 Justify)

REFERENCES (Calibri 10 Bold, Left, Capslock)

[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 recognation of target cells by $CD8^{+}CD122^{+}$ regulatory T cells. *Journal Immunology.* 124. 1:121-128. (Article in Journal)
[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)

Cover :

Lok Baitan Floating Market
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