

# Journal of **INDONESIAN TOURISM AND DEVELOPMENT STUDIES**



Published by

Graduate Program, Brawijaya University  
Collaboration with  
Society of Ecotourism Researcher & Developer Indonesia

<http://jitode.ub.ac.id>

September, 2014

# **Journal of Indonesian Tourism and Development Studies**

## **EDITORIAL BOARD**

### **Chief Editor**

Luchman Hakim

**Ecotourism – Faculty of Mathematics and Natural Sciences, University of Brawijaya,  
Indonesia**

### **Team Editor**

- Akira Kikuchi  
**Department of Environmental  
University of Teknologi Malaysia, Malaysia**
- Soemarno Soemarno  
**Department of Soil Science  
Faculty of Agriculture  
University of Brawijaya, Indonesia**
- Iwan Nugroho  
**Widyagama University – Indonesia**
- Devi Roza K. Kausar  
**Faculty of Tourism  
Pancasila University, Indonesia**
- Yusri Abdillah  
**Faculty of Administrative Sciences  
University of Brawijaya, Indonesia**
- Rukavina Baks  
**Faculty of Agriculture  
University of Tadulako, Indonesia**
- Hasan Zayadi  
**Department of Biology  
Faculty of Mathematics and Natural  
Sciences  
Islamic University of Malang, Indonesia**

### **Managing Editor**

Muhammad Qomaruddin, Afidatul Muji Astuti,  
Jehan Ramdani Haryati, Whindy Dwi Yunandhika

### **Editorial Address**

1<sup>st</sup> floor Building E of Graduate Program, Brawijaya University  
Mayor Jenderal Haryono street No. 169, Malang 65145, Indonesia  
Phone: +62341-571260 / Fax: +62341-580801  
Email: [jitode@ub.ac.id](mailto:jitode@ub.ac.id)  
Website: [jitode.ub.ac.id](http://jitode.ub.ac.id)



# TABLE OF CONTENT

*Vol. 2 No. 3, September 2014*

---

## **Local Wisdom of Smoked Fish Processing as Tourism Product in Situbondo Regency**

Ika Junianingsih, Luchman Hakim, Nuddin Harahab ..... 86-94

## **Tourism Development Strategy of Buntula'bi Balusu Sub-Village, North Toraja Regency Based on Tourist Perception**

Vica Vanessa Sesaryo Timang, Antariksa Antariksa, Ismu Rini Dwi Ari ..... 95-102

## **Agroedutourism and Ecopreneurship Activities on the Organic Farming Practice in Lawang, Malang Regency, East Java, Indonesia**

Ayu Raisa Khairun Nisa', Setijono Samino, Endang Arisoelaningsih ..... 103-112

## **Tourism Based on the Model of Strategic Place Triangle (A Case Study in Wisata Bahari Lamongan)**

Ismuhadi Heru Wijayanto, M. Saleh Soeaidy, Siti Rochmah ..... 113-118

## **Culture Development Planning in the Special Region of Yogyakarta (Management Planning of Cultural Heritage in Kotagede District based on Community Empowerment Conservation Model)**

Eko Suryanti, Semartono Sumartono, Hermawan Hermawan ..... 119-127



## Local Wisdom of Smoked Fish Processing as Tourism Product in Situbondo Regency

Ika Junianingsih<sup>1</sup>, Luchman Hakim<sup>2</sup>, Nuddin Harahab<sup>3</sup>

<sup>1</sup>Master Program of Environmental Resources Management, Graduate Program, University of Brawijaya, Malang

<sup>2</sup>Department of Biology, Faculty of Mathematics and Natural Sciences, University of Brawijaya, Malang

<sup>3</sup>Department of Fisheries Socio-Economics, Faculty of Fisheries and Marine Sciences, University of Brawijaya, Malang

### Abstract

Marine and fisheries resources in Situbondo Regency were potential to supports seafood processing, e.g. traditional smoked processing of mackerel tuna (*Euthynnus affinis* Cantor) based on local wisdom. This research was aimed to assess and analyzes: the processing of smoked mackerel tuna based on local wisdom, public perception towards the processing of smoked mackerel tuna, and the quality of smoked mackerel tuna. The research carried out on January to April 2014, in Jangkar Village, Situbondo regency. The study included depth interview from key persons with questionnaire and organoleptic test. The public perception on smoked mackerel tuna was taken by questionnaire from 85 respondents, whereas the quality of smoked mackerel tuna was analyzed with laboratory proximate test. Result of this research showed that smoked mackerel tuna processing used traditional smoking instrument and fuel material. The smoking stall used several banana midrib stem above the furnace that made of cement and bricks, while the fuel use coconut coir which created the typical flavors of the smoked mackerel tuna. The average organoleptic value of the smoked mackerel tuna appearance is 7.89 (intact, clean, brown, very shiny specific type), flavors of 8.24 (less fragrant, smoked enough, without additional disturbing odor), taste of 8.41 (delicious, savory), texture of 7.40 (solid, compact, fairly dry, tight inter-flesh tissue), and colour of 7.20 (attractive, specific, shiny brown colour type). Public perception showed that the community knowledge on smoked mackerel tuna processing is good, creates good flavors of smoked mackerel tuna and favored by the community, thus also encourage the community to support the conservation of this traditional smoked processing. Lab analysis showed that the proximate value of 0.99% carbohydrates, 29.59% protein, 1.14% fat, 2.89% mineral, 1.88% ash, and 63.4% water. Processing of smoked mackerel tuna as tourism product of Situbondo Regency is worth and it has been given benefits to the increasing of community welfare, thus it need to be preserved to become sustainable.

**Keywords:** culinary product, public perceptions, smoked mackerel tuna, traditional seafood processing.

### INTRODUCTION

Sea and coastal resource in Indonesia are greatly potential, including its non-natural resources (such as minerals) and its natural resources; especially fisheries. It is supported by the archipelago which has a long coastline of 81,000 km and sea width area of 5.8 million km<sup>2</sup>, thus reserved abundant natural resources for the community life necessity [1]. Marine fisheries sub-sector greatly contributes to the additional value of fisheries sector, e.g. aquaculture, hatchery, and well processed products of marine and fishery; both modern and traditional [2].

Marine fishery products processed in modern and traditional way, which essentially applying the concepts of efficiency and conservation in the utilization of natural resources [3]. Marine fishery products which processed traditionally are salted fish, boiled fish, smoked fish, and fermented products [3]. Traditional fish process-

ing is prospective to be more mainly developed than the modern process, such as freezing and canning [5], because traditional processing is low cost and use simple equipment.

Smoking on fish as a form of processed marine fisheries, is a well known product called *exotic indigenous food*. It means that this smoked fish products are traditionally processed in a specific area and will be difficult to be found in other areas. It also become a primary regional commodities from the origin area [5,6,7]. As one example, smoked mackerel tuna (*Euthynnus affinis* Cantor) called *Jangkar* in Situbondo, East Java. *Jangkar* become the culinary tourism product with a distinctive flavor that strongly recommended when visiting the areas of Situbondo [8]. It has a different flavor to the smoked fish production of some other areas, such as Sumatra (*Salai*), Maluku (*Asar*), Sulawesi (*Kayu*), and Central Java (*Pe*). It is due to the flavor and odor characteristic of the product that influenced by the smoking process, the use of raw materials, the use of fuel and other processing factors. These characteristics are the

\* Correspondence address:

Ika Junianingsih

Email : ikajunia05@yahoo.co.id

Address : Graduate Program, University of Brawijaya, Jl. Mt. Haryono No. 169 Malang 65145

affecting factor the development of business prospects of the smoked fish processing.

Smoked fish in Situbondo area processed traditionally, from generation to generation by applying their local wisdom. Local knowledge is used in the processing of smoked mackerel tuna, e.g. smoking process and the fuel used. Local people use of banana midrib stem above the stove made of cement and brick. This way of smoking is believed to be able to produce a distinct different flavor to the product, even without salting and the addition of food additive. Local people only use the burning coconut coir as fuel for producing the smoke. As explained by Haras [9], the types of wood that used to produce smoke will affect the product quality.

Good type of wood for smoking is slow-burned hardwood, contained many flammable compounds, e.g. cellulose, hemicelluloses, lignin, and acid [10]. Coconut coir and shell is type of widely used hard wood to produce both gas and liquid smoke because its composition of lignin, cellulose, and methoxyl contribute a good organoleptic properties [11].

The primary raw material of smoked fish in Situbondo is mackerel tuna, because it is the main fish catches in the area. Department of Fisheries and Marine of Situbondo [2] reported the fish catches of 2012 reached 6,092.19 tons includes 1,302.580 tons of mackerel tuna, 1,695.023 tons of *Decapterus* fish, 774.740 tons of *Nemipterus japonicus* Bloch fish, and other fish species. Pelagic fish (tuna, mackerel, mackerel tuna, skipjack, snapper, etc.) are commonly used as a raw material of smoked fish [12,13].

There are other procedures for smoked fish processing such as kitosan for dumbo catfish [14], liquid smoke on mackerel tuna [15], and different liquid smoke on mackerel tuna [16]. Meanwhile, traditional processing of smoked mackerel tuna in Jangkar Village, Situbondo Regency has not been assessed yet. Therefore, this study aimed to assess the local wisdom on smoked processing of mackerel tuna. We also assess the public perception on the smoked processing of mackerel tuna and assess the quality of it. Our study was expected to assist the development of the smoked processing units and conserved this processing as tourism products which based on local wisdom.

## MATERIALS AND METHODS

The research was conducted from January to April 2014. Observation and sampling of smoked mackerel tuna is conducted in Jangkar Village,

Situbondo Regency. Jangkar Village located in  $\pm 28$  km of east Situbondo, in latitude of 0-500 m asl with 6,700 ha warea. It is divided into eight villages with 36,684 persons is fisherman [2]. The research was conducted in three stages analysis of aspects, i.e. local knowledge of smoked mackerel tuna processing, public perception on smoked mackerel tuna products, and the quality of smoked mackerel tuna.

## Traditional Smoked Processing

Primary data retrieved by direct observation on the smoking process and depth interviews to keynote speakers as the owner of the smoked fish processing units. Interviews using a direct questionnaire on the following objects: fish raw material (type and fish resources); fuel material (type and fuel resources); fish processing methods; smoking duration (time); other processing handling (salting, aeration, and packaging). The level of consumer preference towards smoked mackerel tuna assessed by organoleptic test to 85 respondents (Table 1). Organoleptic scale is in the range of 1-9 [17].

**Table 1.** Organoleptic Criteria for Consumer Preference

Specification	Score
<b>1. Appearance</b>	
• Intact, clean, strong shiny brown specific color.	9
• Intact, clean, shiny brown specific color.	7
• Intact, clean, brown, faint.	5
• Unintact, dark brown, faint.	3
• Unintact, dark brown, very faint.	1
<b>2. Flavor</b>	
• Fragrant, adequate smoke, no extra disturbing odor.	9
• Less fragrant, adequate smoke, no extra disturbing odor.	7
• Neutral, slight extra odor.	5
• Strong extra odor, ammonia odor and putrid.	3
• Reek, strong ammonia odor and putrid.	1
<b>3. Taste</b>	
• Delicious, savory.	9
• Delicious, less savory.	7
• Undelicious, unsavory.	5
• Undelicious with disturbing extra flavored.	3
• Musty.	1
<b>4. Texture</b>	
• Solid, compact, dry, tight inter-tissue.	9
• Solid, compact, fairly dry, tight inter-tissue.	7
• Less Dry, loose inter-tissue.	5
• Soft, easily detached tissue.	3
• Very soft, easily detached tissue.	1
<b>5. Colors</b>	
• Very attractive, strong shiny brown specific color.	9
• Attractive, shiny brown specific color.	7
• Less attractive, brown, faint.	5
• Unattractive, dark brown, faint.	3
• Very Unattractive, dark brown, faint.	1

### Assessmet of Public Perception

Consumer and public perceptions were randomly sampled through direct surveys and interviews to consumers and community. The result of the interview was scored using Likert Scale, with formula [18]:

$$Ai = \frac{(a.5) + (b.4) + (c.3) + (d.2) + (e.1)}{a + b + c + d + e}$$

Description:

Ai = public perception on statement-i

a = number of respondents who scored 5

b = number of respondents who scored 4

c = number of respondents who scored 3

d = number of respondents who scored 2

e = number of respondents who scored 1

The score of each answer summed, averaged, and grouped to determine the level of perceived public perception as follows:

1.0 < x ≤ 1.8 = very bad / very low

1.8 < x ≤ 2.6 = bad / low

2.6 < x ≤ 3.4 = Neutral

3.4 < x ≤ 4.2 = good / high

4.2 < x ≤ 5.0 = excellent / very high

### Quality of Smoked Mackerel tuna

Smoked fish samples from the research site was prepared (grouped, weighed and packaged in aluminum foil) and stored in a box. The samples were analysed at Laboratory of Faculty of Food Technology, University of Brawijaya. The proximate analysis (% of wet weight) includes the level of ash, protein, carbohydrate, fat, and mineral.

#### Water content

Total of 2 g of sample dried in the oven at temperature 95-100°C to constant weight ≤ 100mm Hg for approximately 5 hours. Loss of weight in drying process reported as the estimate moisture level [17].

$$\text{Water content (\%)} = \frac{\text{Weight loss during drying (g)}}{\text{sample weight (g)}} \times 100\%$$

#### Ash level

The ash level determined with the method of combustion in the furnace. Sample was burned at high temperatures of 500-600°C. High temperatures burned the organic material and remained the ash. The ash level was determined as follow formula [19]:

$$\text{Ash Level (\%)} = \frac{\text{ash weight (g)}}{\text{sample weight (g)}} \times 100\%$$

#### Protein content

Protein level determined using Kjeldahl method. Total of 0.75 g sample inserted into the Kjeldahl flask then added 6.25 g K<sub>2</sub>SO<sub>4</sub> and 0.6225 g CuSO<sub>4</sub> as a catalyst. The next stage is the destruction process at temperature of 410°C for ± 2 hours or until a clear solution is obtained. Kjeldahl Flasks mounted on a series of steam distillate apparatus and added 50ml of NaOH 40%. Then distillate to fit in Erlenmeyer volume reaches 150 mL (distillate in green). Distillate titrated with HCl 0.2 N until the color changes into gray. Blanko were given the same treatment as the sample. Tests carried out in duplicate. The protein level was calculated by the formula [17]:

$$\text{Protein Content (\%)} = \%N \times 6.25$$

$$\%N = \frac{\text{ml NaOH blanko} - \text{ml NaOH sample} \times N. \text{NaOH} \times 14.008}{\text{gram material} \times 1000} \times 100\%$$

#### Carbohydrate level

Carbohydrate level was calculated with method of *by difference* with formula [19]:

$$\text{Carbohydrate Level (\%)} = 100\% - (\% \text{ water} + \% \text{ ash} + \% \text{ protein} + \% \text{ fat})$$

#### Fat level

Fat level of foods measured by Soxhlet method, which is used if the food contains relatively low fat. Total of 2 g of the sample wrapped in fat-free filter paper and put in a fat erlenmeyer. Sample refluxed for 8 hours until the solution is clear, that signified all the fat has been extracted. Fat content was determined using the formula [19]:

$$\text{Fat Level (\%)} = \frac{(\text{final weight} - \text{initial weight}) \text{ of erlenmeyer (g)}}{\text{sample weight (g)}} \times 100\%$$

#### Mineral level

Porcelain bowl was heated in the oven at temperature of 105°C for 4 hours, and inserted into the desiccator for 15 minutes to be weighted with analytical balance. The first phase, 3 g sample crushed and inserted into the cup then performed first combustion in oven at 200°C for 2 hours. Next the cup put into the desiccator and weighed [19].

In the second combustion, it reincinerated at 350°C for 18 hours, and then put into a desiccator to be weighed. Combustion III, it reincirated on the furnace, and then the cup is inserted into the desiccator for 30 minutes to be weighed [19].



## RESULTS AND DISCUSSION

### Situbondo Local Wisdom on Smoked Processing

Smoked fish processing Unit of Small-Medium Enterprises (SMEs) in Jangkar village, Situbondo started since 1986. The business unit constantly produce smoked fish, which is known as smoked fish of *Jangkar*. Processing is done traditionally, without salting process, on the smoked furnace made of cement and brick, with fuel of coconut coir. In the smoking process, they placed multiple midrib of banana stems on the furnace. The smoking adds a distinctive flavor to the product, even without additional herbs or spices. Interviews and direct observation on the smoking process showed some characteristics (Table 2).

**Table 2.** Characteristics of smoked mackerel tuna processing in Jangkar Village

Parameter	Characteristics
a. Raw Materials	Mackerel tuna.
b. Original sources of raw materials	Jangkar Port (TPI Jangkar) and Mimbo Port (TPI Mimbo), both located in Situbondo.
c. Size of raw materials	For the main ingredients (mackerel tuna): - <b>small mackerel tuna</b> Average weight: 133.7 g Average length of 26.8 cm - <b>large mackerel tuna</b> Average weight: 401.2 g Average length: 90.3 cm The freshness level of raw materials homogenous ( $\pm 5^{\circ}\text{C}$ )
d. Fuel Type	Coir and shell of Coconut
e. Fuel resources	Agricultural waste
f. Smoking Duration	- <b>Small mackerel tuna:</b> $\pm 10\text{-}15$ minutes - <b>large mackerel tuna:</b> $\pm 25\text{-}30$ minutes
g. Smoking equipment	- <b>Furnace made of cement</b> P = 78 cm L = 78 cm T = 68 cm - <b>Fumigation rack made of iron</b> 60 cm x 60 cm, radius 7.5 cm
h. Distance from smoke	$\pm 16$ cm
i. Smoking temperature	$\pm 80^{\circ}\text{C}$
j. Other handling of smoking	- use midrib of banana's stem - no additive/salting. - packaging without aeration

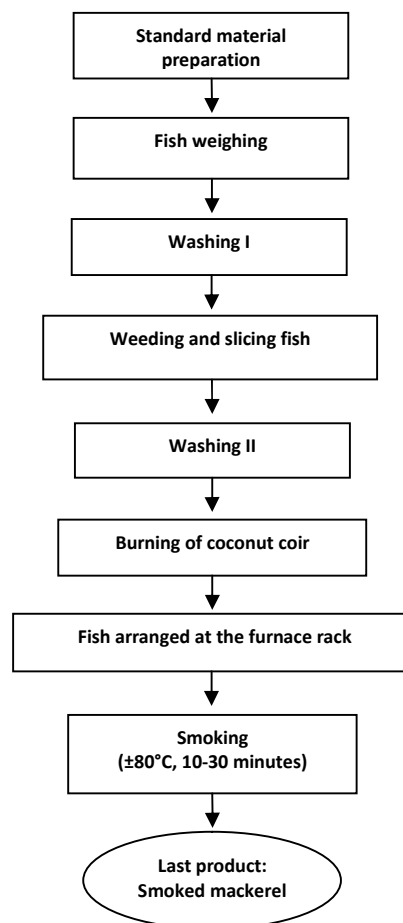
### Traditional Smoked Processing of Mackerel tuna

Procedure of smoked mackerel tuna processing is as follows. First, fish weighed for 10 kg, then cleaned and disemboweled. Fish was cut into small slices at its back to accelerate the

cook. Prepared fish was arranged on smoking rack with midrib of banana stem horizontally after the coconut coir is burned and produces smoke (Fig. 1). Fish is smoked at temperature of  $60\text{-}80^{\circ}\text{C}$  for 10-30 minutes duration (Fig. 2). Fish flipped in every 5 minutes. This traditional smoking method use no food additive or salting because tuna meat with a high fat content (1-3%) will produce a savory taste when smoked.



**Figure 1.** Smoked Mackerel Tuna



**Figure 2.** Process of Smoked Mackerel Tuna

The traditional smoking procedure is slightly different from the National Standardization Board [17]. This smoking do not through the salting process and packaging process is done without cooling. It is different as reported by Heruwati [5], smoked fish should be quickly and evenly cooling after the smoking process before packaging, otherwise smoked fish will be mushy, moist and sour or moldy. Different smoking procedures influenced by properties of fish used, the local conditions and general level of technology [5]. Fish smoking process in Situbondo use a very simple technology as a part of the local indigenous. The addition of the midrib of banana stem on the furnace made of cement and brick is believed to give special flavor on the smoked.

### Characteristics of Organoleptic

Evaluation on smoked mackerel tuna with organoleptic tests sensory attributes including; appearance, odor, flavor, texture and color [17]. The flavor compounds in smoked fish varied due to differences in raw materials, processing, storage, fuel materials and food additive. The results of organoleptic test has the average value of rating scale on 7-8 (Table 3).

**Table 3.** Organoleptic of smoked mackerel tuna

No	Sensory	Average	Specification
1	Appearance	7.89	Intact, clean, strong brown specific color
2	Flavors	8.24	Fragrant, adequate smoke, no extra disturbing odor
3	Taste	8.41	Delicious, savory.
4	Texture	7.40	Solid, compact, fairly dry, fairly tight inter-tissue
5	Colors	7.20	Attractive, shiny brown specific color

The results showed that smoked mackerel tuna possess intact intensity, clean, very shiny brown color for specific type. This is supported by the use of coconut coir fuel with heat smoking methods that produce two times carbonyl compounds and phenols more than cold smoking method [20]. Carbonyl compounds and phenols contained in the smoke formed the color and odor of smoked fish.

Sensory attributes of flavor on smoked mackerel tuna demonstrated that odor intensity is adequate fragrant of smoke, without any additional disturbing odor. In this research, smoked mackerel tuna produced without any salt and food addition. Smoking process produce odors from the compound in natural raw materials, e.g. fat oxidation and hydrolysis give the characteristic aroma of the fishery products. Phenol compound is soluble in fat; more fat creates more delicious flavor.

Sensory attributes of taste on smoked mackerel tuna has flavor intensity of delicious and savory. It is influenced by the use of raw materials which categorized as fatty fish, thick and compact flesh, thus produce tasty smoked fish [15]. Meanwhile, according JICA [21] and Swastawati *et al.* [20], delicious taste that characterized the smoked fish products mainly derived from phenol and aldehyde compounds.

Texture on smoked mackerel tuna is solid, compact, fairly dry, and fairly tight inter-tissue. The use of heat smoking method in 10-30 minutes and smoke distance of  $\pm 16$  cm remained fairly high water levels in smoked fish. The mackerel tuna derived from sea water thus it has fairly high humidity and easily detached tissue.

Smoked mackerel tuna in this study has attractive color intensity, brown, and shiny specific types. Adawyah [4] explained that high-quality smoked fish characterized by a golden brown color, yellowish brown rather than dark colors, spread evenly and specific types. The color change occurs due to the ongoing reaction between phenol components in the smoke with protein and sugar components in fish flesh.

### Public Perception on Smoked Fish Processing

Assessment of public perception were grouped into three important criteria, i.e. knowledge on smoked mackerel tuna, flavor of smoked mackerel tuna, and preservation of smoked mackerel tuna processing (Table 4). Results Data Validity of the questionnaire instrument has a correlation value of  $\geq r$  tables (0.213), which declared as valid and the reliability value of 0.734 which declared reliable.

Public knew well about the processing of smoked mackerel tuna. It implied from the results of the questionnaire which states that the processing of smoked mackerel tuna has been known to the public as a indigenous product in Situbondo regency since long time ago. The level of public knowledge is an important basis for local society to improve the welfare of their lives.

As explained by Hakim [22], knowledge on the natural resources is important for living survival.

The distinctive flavor of smoked tuna is favored by the public. Good taste and flavor support the high interests of the public for the product. As stated by Stephen [23] that the success or failure of a product in the market, heavily influenced by the consumers preference on the product.

**Table 4.** Public Perception Assessment on Smoked mackerel tuna

No	Question	Public Perception	
		Mean	Descr.
Knowledge of smoked tuna			
1	Do you ever visit the beach of Jangkar, Situbondo?	4.09	ever
2	Do you know the processing of smoked tuna in Jangkar, Situbondo?	4.18	knew
3	Do you know smoked tuna as a tourism product?	4.08	knew
4	How is the level of freshness of the used raw materials?	3.81	fresh
5	Do you know how the smoked tuna processed?	4.26	knew well
6	How strategic is the location of smoked tuna processing?	3.54	strategic
Flavor and taste of smoked tuna			
7	Do you ever try the smoked tuna products?	4.01	Ever
8	Do you like the taste of smoked tuna?	4.18	Like
9	How is the hygiene of the processing?	3.45	adequate
10	How is the packaging of the smoked tuna?	2.32	un-attractive
Conservation on the processing method			
11	Is this smoked tuna processing is a form of local knowledge?	4.25	strongly agree
12	Do this smoked tuna is a typical culinary of Situbondo?	4.25	strongly agree
13	Do you think the government suppose to support the processing of smoked tuna?	4.26	strongly need to support
14	Do this smoked tuna processing needs to be preserved?	4.22	necessary
15	Does the development of the smoked tuna need to be enhanced?	4.32	strongly need to be enhanced

Well knowledge of public towards smoked mackerel tuna processing show a positive impact on conservation acts by the community in Situbondo. It implied in the results of the questionnaire that most respondents agree to

conserved this traditional processing of smoked mackerel tuna. This knowledge and attitude are factors that influence public perception and public actions [24].

### The Quality of Smoked Mackerel tuna

The results of the proximate analysis on the smoked mackerel tuna presented in Table 5.

**Table 5.** Proximate Results of Smoked *Jangkar*

Parameter	Content Level (%)
Water	63.4
Ash	1.88
Carbohydrate	0.99
Protein	29.59
Fat	1.14
Mineral	2.89

### Water Content

The water content of smoked *jangkar* is 63.4%. It was not appropriate according to the SNI maximum standard on the water content of 60% [17]. The water content is affected by the heat smoking method, with high temperature and in a shorter time. Crapo [25] explained that produced water content influenced by the smoking method that carried out on the fish products. Shorter duration of smoking reselt a remain high water content on the product. The water content of the product will also influenced by initial water content of the raw materials of the used fish species. Generally, the water content of mackerel tuna and skipjack amounted to 70.58% [26].

Water loss also depend on the surface character of the fish that exposed to heat, time and temperature of smoking, and the humidity and smoke rate [19]. These factors affect the amount of smoke that directly contact with the fish thus affect the heat and the amount of water loss from the product.

### Ash Level

The ash content of smoked mackerel tuna is 1.88%. The values correspond to standard of SNI [17] that ranged of 2–5%. Ash is residual inorganic substance as result of organic materials combustion and describes the total amount of minerals in the material. Ash content and composition depend on the type of material and the combustion method [19].

Ash level in smoked fish is laso influenced by the content of minerals in the raw materials and minerals contained additives during the proces, such as the salting process. Ash level in this

smoked mackerel tuna influenced only by the amount of the mineral content of the raw material fish. It is because this method excludes any addition of mineral such as salts.

Whittle and Howgate [6] explained that cold smoking with a relative long duration (6-12 hours) creates large loss of water content, less loss of fat content and less ash content. Cold smoking method produce a higher ash content than heat smoking method.

#### **Carbohydrate Level**

Carbohydrate level of the smoked *Jangkar* is 0.99%. Carbohydrate levels were influenced by the carbohydrate content of raw materials and performed smoking process. Carbohydrate of fresh fish generally found in a small amounts, ranged of 0.5-1.5% [27]. In some studies, the level of carbohydrates are often ignored because the low rate, which relatively has no effect. Nevertheless, carbohydrates have an crucial role on the quality of the fish during the smoking process.

#### **Protein levels**

The ash level of smoked mackerel tuna is 29.59%, which is higher than the standard of SNI, i.e. 21–26% [17]. Protein content influenced by the loss of water content of raw material during the process. Fish smoking with a longer duration cause a higher loss of water content, thus the measured protein will also be higher. It is also influenced by the number of ingredients that are added during the smoking process, e.g. salting. The percentage of total protein, fat and ash on smoked fish without salting increased due to loss of water during the fumigation [28].

The additive ingredients (e.g. salt) on fish will bind the protein in fish flesh and thus proteins and amino acids will react with a variety of different smoke components, such as carbonyl and phenol. Carbonyl in the smoke reacts with the amino acids and cause browning, formation of color and flavor, while phenol compounds reacting the denatured proteins.

#### **Fat Level**

Measured fat content will be higher if the fresh raw materials also has a initial high fat content. The difference of contained fat in fish body parts will also affect the measured fat content. According to the USDA [26], mackerel tuna has about 1-3% fat content in the back flesh and 10-30% on the abdomen flesh. The result of

our smoked of mackerel tuna showed fat content of 1.14%.

In the smoking process, fat and water will extracted thus shrinked physic will occur. Smoking duration affect the nutritional composition of fish, especially the fat content. High temperatures during the smoking process reduce the level of omega-3 fatty acids. The content of unsaturated fatty acids in fish flesh also resulted in higher fish susceptible to oxidation during the smoking process. It reduced the nutritional functions derived from fatty acids. Heat smoking method produces a product with low fat level because it will melt out along with the water loss. Fat and water loss can also occur due to protein denaturation [27].

#### **Mineral Level**

Smoked mackerel tuna in this study has a mineral content of 2.89%. Minerals have a major influence the cooking, compactness, intactness, softness, tenderness and flavor of the product. Mineral is responsible to the perception of flavor and increase the intensity of flavor. Minerals act as a flavor enhancer for other flavor components in food [26]. According JICA [21], a certain amount of mineral salt on smoked fish flesh solidify the inter-tissue connection, affect fat oxidation and flavor of the product.

Minerals will interact with proteins for improving water binding in the flesh. The heat smoking will produce a product with a higher mineral level. It decrease the possibility of inter-tissue to be detached, thus the rate of moisture loss of fish to be pressed (Kemal, 2000).

#### **CONCLUSION**

Smoked mackerel tuna in Situbondo are traditionally process based on local wisdom, seen in the use of materials and method. Organoleptic test classified the smoked mackerel tuna as a good flavor product. Local community understands well the knowledge of the smoked fish method. Further conservation action for smoked fish processing is strongly supported by local community. The smoked mackerel tuna has high water content, normal carbohydrate level, high protein, relatively normal fat content, low ash level, and 2.89% minerals.

#### **Suggestion**

Fishery product processing based on local knowledge needs to be conserved to characterize the culinary tourism of Situbondo area. The improvements are need on packaging, hygiene,

marketing, and further research on the level of PAH. We recommend local government and related agencies to provide assistance for local producer that use this traditional processing to be more developed.

## REFERENCES

- [1]. Institute of Indonesian Maritime. 2010. Sea of Pantura is no longer blue. <http://indonesiamaritimeinstitute.org/2010/02/07/sea-pantura-no-blue-Anymore.html>.
- [2]. Statistic Center of Situbondo. 2013. Geographic data, population, agriculture, and industry. Center of Statistical Data and Information of Situbondo. Situbondo.
- [3]. Adawyah, R. 2007. Processing and preservation of fish. Bumi Aksara. Jakarta.
- [4]. Heruwati, E.S. 2002. Traditional fish processing: prospects and development opportunity. Journal of Agricultural Research 21 (3), 92–99.
- [5]. Whittle, K.J., P. Howgate. 2000. Glossary of fish technology terms. Prepared Under Contract to the Fisheries Industries Division of the Food and Agriculture Organization of the United Nation. <http://www.onefish.org/global/FishTechnologyGlossaryFeb02.pdf>.
- [6]. Ministry of Maritime Affairs and Fishery. 2011. Production fish processed by type of processing in Indonesia of 2005-2008. <http://statistik.dkp.go.id/download/book02.pdf>. Jakarta: Department of General Fishery Products Processing.
- [7]. Government of Situbondo. 2013. About Situbondo Regency. <http://www.situbondokab.go.id>.
- [8]. Haras, A. 2004. Effects of liquid smoke concentration and immersion against of quality fillet smoked Skipjack (*Katsuwonus pelamis*) and stored at room temperature. Master Thesis. Faculty of Fisheries and Marine Science, Bogor Agricultural University.
- [9]. Wibowo. 2012. Local wisdom in maintaining environment (Case study of rural communities in the District Dawe, Kudus Regency). Journal of Educational Social Studies 1 (1).
- [10]. Budijanto, S., R. Hasbullah, S. Prabawati, Setyadjit, Sukarno, I. Zuraída. 2008. Identification and security testing liquid smoked of coconut shell for food products. Journal of Agricultural Research 5 (1), 32–40.
- [11]. Margono, T., D. Suryati, S. Hartinah. 2000. Processing of smoked fish product [www.warintek.ristek.go.id/food\\_health/food/piwp/fish\\_smoke.pdf](http://www.warintek.ristek.go.id/food_health/food/piwp/fish_smoke.pdf).
- [12]. Suhendar, U., T. Soewarno, Soekarto, S.P. Nurheni. 2010. Study marketing strategy smoked fish in unit public of activity Citayam-Bogor. Bogor Management 5 (2), 145–156.
- [13]. Siswina M R. 2011. Chitosan As Edible Coating In Smoked Dumbo Catfish (*Clarias gariepinus*) Which Vacuum Packed During Room Temperature Storage. [Thesis]. Faculty of Fisheries and Marine Science. Bogor Agricultural University.
- [14]. Atmaja, A.K. 2009. Application of liquid smoke redistilled in characterization Kamaboko of mackerel tuna (*Euthynus affinis*) assessment from the level of durability and consumer preference. Master Thesis. Faculty of Agriculture. University of Sebelas Maret. Surakarta.
- [15]. Setyastuti, A.I. 2010. Change of smoked tuna quality (*Euthynus affinis*) using liquid smoke shell oil and liquid smoke during cold storage. Master Thesis. Faculty of Fisheries and Marine Sciences. University of Dipenogoro. Semarang.
- [16]. Indonesian National Standard. 2009. SNI 2725.1:2009. Smoke fish-part 1: specification. National Standardization Board. Jakarta.
- [17]. Swastawati, F. 2011. Visibility study and business smoked fish efficiency with liquid smoked farm waste. Journal of Economic Dynamics Development 1 (1), 18–24.
- [18]. Winarno, F.G. 2007. Biotechnology of food. Mbrio Press. Bogor.
- [19]. Swastawati, F., T.W. Agustini, Darmanto Ys.S., E.N. Dewi. 2007. Liquid smoked performance of lamtoro wood and corn cob. Journal of Coastal Development 10, 189–196.
- [20]. Japan International Cooperation Agency. 2009. Indonesian fisheries statistic index. Ministry of Marine Affairs and Fisheries. <http://www.dkp.go.id/index.php/ind/new/s/1125/jica-download-book>.
- [21]. Hakim L. 2013. Tropical Ethnobotany: A practical guide for understanding human-plant interaction in tropical environment. University of Brawijaya. Malang

- [22]. Stephen, P.R. 1998. Organizational behavior. Prentice Hall Internasional Inc, New Jersey. New York.
- [23]. Peter, J.P., J.C. Olson. 2000. Consumer behavior: consumer behavior and marketing strategy. 1 (4).
- [24]. Crapo, C. 2000. Smoking fish at home. <http://www.uaf.edu/ces/publications-db/catalog/hec/FNH-00325.pdf>.
- [25]. United States Department of Agriculture. 2013. Calories in Smoked Fish and Nutrition Facts. National Nutrient Database 18. [http:// http://www.nal.usda.gov/calories-nutrition/usda/smoked fish](http://www.nal.usda.gov/calories-nutrition/usda/smoked_fish).
- [26]. Kemal, P. 2000. Smoked fish. Jakarta: women information center in development PDII-LIPI in cooperation with Swiss Development Cooperation. 1–6.
- [27]. Smith, B.A. 2004. Flavor formation from amino acids in fermented dairy products <http://www.library.wur.nl/wda/dissertations/dis3574.pdf>.
- [28]. Suwamba, D. 2008. Boiling process using the concentration of different salt. <http://www.smp-saraswati-dps.sch.id/index.php/2008/>

## Tourism Development Strategy of Buntula'bi Balusu Sub-village, North Toraja Regency Based on Tourist Perception

Vica Vanessa Sesaryo Timang<sup>1</sup>, Antariksa<sup>2</sup>, Ismu Rini Dwi Ari<sup>2</sup>

<sup>1</sup>Master Program of Urban and Regional Planning, Faculty of Engineering, University of Brawijaya, Malang

<sup>2</sup>Department of Urban and Regional Planning, Faculty of Engineering, University of Brawijaya, Malang

### Abstract

Buntula'bi Balusu Sub-village located in North Toraja Regency. It is uniquely endowed with diverse cultural heritages, both physical (tangible) and non-physical (intangible) cultures, viable to attract domestic and/or international tourists. The objectives of this research were to identify Buntula'bi physical and non-physical characteristics, analyse the tourists' perceptions towards Buntula'bi's tourism objects performances, and formulate the appropriate direction of tourism development within the sub-village. The research employed descriptive and evaluative analytical methods through observations on primary data, questionnaires, documentation, and a set of literature reviews. An evaluative approach was used to measure tourists' level of satisfaction towards the tourism objects performances. Tourism component variables were assessed using Importance Performance Analysis (IPA). Descriptively, the physical characteristics in the study site were in the form of ancestral buildings, which included *tongkonan Kollo-Kollo*, *tongkonan Rantewai*, *togkonan Lingkasile*, *alang*, *banuabugi*, and also traditional buildings of *kombongan*, *rantetendan*, *ranteissun*, *liangtondon*, *lokkotarra*, and *sawahadat*. Meanwhile, the non-physical characteristics were identified as indigenous traditions in the forms of tribal cultures and ceremonies such as *Aluk Todolo*, *Rambu Solo'* and *RambuTuka'*. The IPA result showed that the top priority for the tourism development strategy in Buntula'bi was to improve public facilities, optimize road conditions, and develop restaurants and accommodation, as well as souvenir shops in Buntula'bi Balusu Sub-village.

**Keywords:** Importance Performance Analysis, tourism development, Toraja.

### INTRODUCTION

Cultural tourism in the tourism domain is a type of tourism resulting from a cultural attraction of a particular region. In living culture, the plausible elements to become attractions include the tribal traditions, religious rituals or ceremonies, and art performances. Whereas in cultural heritage, attractions can be in the form of historical artefacts, cultural landscapes, and many others [1]. Due to its uniquely distinctive heritage, Toraja has captivated countless domestic and international tourists' attention. Balusu is one of the regions in Northern Toraja Regency which is rich in such cultural heritage. This region consists of three smaller Sub-village, namely Kalumpang, Buntula'bi, and Solo'. Amongst them, Buntula'bi Sub-village is chosen as a study area because of the existence of many ancestral buildings and traditional villages conceivable for future tourism development in its site.

According to the 2013 data of The Department of Culture and Tourism of Northern Toraja, in spite of being not designated yet as an official Indonesian heritage site, some artefacts in this sub-village have been listed in the Northern Toraja heritage sites' list. The artefacts include the *Tongkonan Balusu* (inventory number 1022) and *Tongkonan Kollo-Kollo* (inventory number 1012).

Despite of its tourism potential to be developed, Buntula'bi Sub-village has not received significant attention from Indonesian government. Neither, initiatives from the local government is noticeable. This can be seen from the negligible government participation in preserving the ancestral buildings and developing the tourism objects, as well as the few available supporting tourism facilities such as restaurants and accommodations. Given this condition, therefore it is important for this research to explore Buntula'bi Hamlet's tourism potential in order to formulate an appropriate sustainable development strategy.

---

\* Correspondence address:

Vica Vanessa Sesaryo Timang

Email : Veeca\_vanessa@yahoo.com

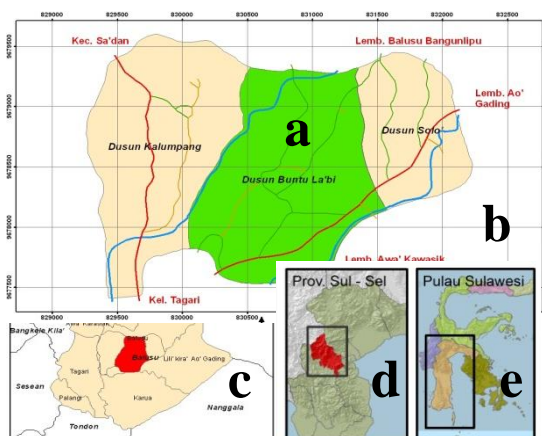
Address : Master Program of Urban and Regional Planning,  
University of Brawijaya, Jl. Veteran Malang 65145

## MATERIALS AND METHODS

### Study Area

Buntula'bi Sub-village located in the Village of Balusu, Balusu Sub-district, North Toraja Regency, South Sulawesi Province. The total area of Buntula'bi Sub-village is approximately 250 ha with mountainous and hilly topography. Other geographical characteristics include: an altitude of 890 m asl, steepness level of 8-25%, rainfall intensity of 3,645 mm per year, a temperature range of 14-25°C, and humidity level of 82-86%. Demographically, this sub-village is home for a relatively small population, about 419 residents.

The viable tourism potencies are ancestral buildings, traditional villages, traditional art performances, tribal rituals and ceremonies, such as funeral ceremony which locally known as *Rambu Solo'* and thanksgiving ceremony known as *RambuTuka'*. Rituals and ceremonies in Balusu are the most anticipated ceremony by tourists to date because Balusu considered as the land for nobles that suggests a significantly more elaborate standard for traditional ceremonies.



**Figure 1.** Study Area of Buntula'bi Sub-village

Description:

- a. Buntula'bi Sub-village
- b. Balusu Village
- c. Balusu Sub-district
- d. North Toraja Regency
- e. South Sulawesi Province

### Data Analysis

This research employed a quantitative descriptive analytical method. It can be explained as a methodology based on positivism and used as a means to assess a particular population or sample [2]. The determination of tourist sample number for this research was done using the Sample Linear Time Function [3] ( $n = (T - t_0) / t_i$ ), which was 35 tourist respondents.

#### Physical and non-physical characteristic

Using an explorative descriptive analytical method, this method covers analysis on land use, traditional village, traditional ritual and ceremony.

The explorative descriptive approach explains actual phenomenal characteristics. It also comprehends the actual phenomena by the assessment on a set of alternatives in order to suggest new initiatives through observations, interviews, and questionnaires [4].

Respondents were traditional leaders who controlled the history, knowledge, ancient buildings and attractions in the sub-village or village head of Buntula'bi and understand the context of cultural tourism. The questions were focused to determine the condition of the building and the environment, Toraja culture and the relationship between the utilization of space, and the validity of traditions, rituals and ceremonies.

#### Importance Performance Analysis (IPA)

This method was used to analyze tourists' perceptions towards the attributes of tourism objects' performances in order to formulate a tourism development strategy in Buntula'bi Sub-village.

IPA is a combination of perceptions towards the satisfaction and importance level [5]. Using a Likert scale with 5 different levels: very unimportant, unimportant, somewhat important, important, and very important.

The equation for this method is:

$$Tki = \frac{Xi}{Yi} \times 100\%$$

Description:

- Tki = parallel level
- Xi = satisfaction score
- Yi = importance score

Furthermore, in the Cartesian coordinate diagram, the X axis in the satisfaction level, whereas, the Y axis is the importance level based upon the following equations.

$$X = \frac{\sum Xi}{n} \quad Y = \frac{\sum Yi}{n}$$

Description:

- X = average score for satisfaction level
- Y = average score for importance level
- n = number of respondents.

To determine the objective margins represented by the coordinate of x, y, the following equations were used.

$$x = \frac{\sum \bar{x}_i}{K} \quad y = \frac{\sum \bar{y}_i}{K}$$

Description:

- K = number of items or attributes scored by the respondents



Consecutively, the average scores were then mapped in the Cartesian coordinate diagram which had been divided into 4 sections or quadrants (Fig. 2).

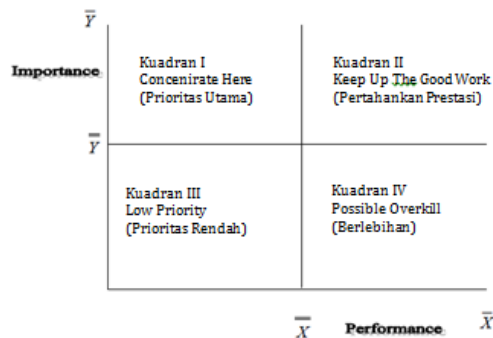


Figure 2. IPA Cartesian coordinate diagram  
Source: Bacon [6]

## RESULTS AND DISCUSSION

### Land Use Pattern

Land use in Buntula'bi Sub-village is dominantly utilized as dry agricultural land (160 ha, 64%), rice farmland (55 ha, 0.55%), and the remaining as settlements and public facilities (35 ha, 0.35%) (Balusu Village Strategic Plan in 2011). The proportion of land use can be seen in Figure 3.

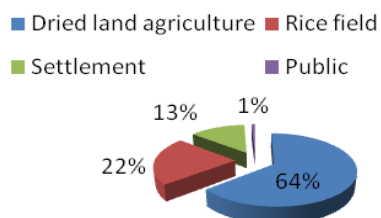


Figure 3. Land Use Pattern in Buntula'bi Sub-village

### Ancient buildings

*Tongkonan*, the indigenous traditional house in Toraja, is such an exotically ancient type of building that attractive enough to draw the attention of tourists. The sub-village is home for at least 10 units of *Tongkonan*, each of which is owned by a group of families, namely Tongkonan of Lingkasile, Rantewai, Kollo-kollo, Bellolinggi, Lengkong, Malenong, Nusu L Limbong, Nenek Nita, Ne' Masero and Tanete (Fig. 4).



Figure 4. Tongkonan: a. Lingkasale, b. Rantewai, c. Kollo-Kollo

Total of 116 buildings units in the sub-village have been identified. The most dominant use of these units is as rice barns known as *Alang*, elevated or stage houses known as *Banua' Bugi*, modern houses, and ancestral houses known as *Tongkonan*, which accounts for 43.27%, 25%, 16.35% and 15.38%, respectively (Fig. 5).



Figure 5. Ancestral buildings in Batula'bi Sub-village:  
a. Tongkonan Kollo-Kollo  
b. Alang at Tongkonan Rantewai  
c. Banua' Bugi at Tongkonan Kollo-Kollo  
d. Modern House at Tongkonan Kollo-Kollo

*Tongkonan* is Torajan north-south orienting traditional housing that functions as a residence, a knowledge centre, and an indigenous institution. *Alang* is a common name for rice barns and storage for other valuables which is located facing the *Tongkonan*. *Banuabugi'* is a wooden elevated house that functions as a private residence. *Banuabiasa* or *modern house* is also a private residence made of either wood or bricks. These four types of buildings commonly constitute a traditional Torajan neighborhood.

### Traditional Village

A traditional village in Buntula'bi Sub-village consists of several elements, i.e. a community land known as *Kombongan*, venues to hold tribal ceremonies known as *Rante Tendan* and *Rantelssun*, stone graves known as *Liang Tondon*, natural caves known as *Lokko Tarra*, and community of rice farmlands. No particular arrangement of these traditional elements is found, however, each of them exists as an integral part of a Torajan traditional settlement (Fig. 6).



**Figure 6.** Traditional village:

- a. Kombongan (community land)
- b. Rante Tendan (venue for tribal ceremonies)
- c. Rantelssun (venue for tribal ceremonies)
- d. Liang Tondon (stone graves)
- e. LokkoTarra (natural caves)
- f. Community of rice farmland

### Traditional ceremony

Traditional ceremonies are prevalent in every aspect of life in the Torajan society. *Rambu' Solo* and *Rambutuka* are some of the ceremonies that portray their indigenous beliefs [7].

### The *Rambu Solo'* ceremony (funeral ceremony)

The *Rambu Solo'* ceremony is the most attractive ceremony for tourists, as seen from the satisfaction score of 4.29% and the importance score of 4.23%. *Rambu Solo'* ceremonial is a sacred funeral ceremony in the ancestral beliefs, known as *Aluk Todolo*, with offerings of many sacrificial animals, such as buffalo and pigs for the dead as a tribal requirement that would guide his/her soul to the life after death. Table 1 explains the stages of *Rambu Solo'* ceremony.

**Table 1.** Stages of *Rambu Solo'* ceremony

Day of the occasion	Number of offerings		Stages of <i>Aluk Rambu Solo'</i>
	Buffalos	Pigs	
One day	-	-	Disili'
Two days	-	1-3	Dipasangbongi
Three days	1-2	6-2	Dipatalubongi
Four days	3-5	7-10	Dipalimangbongi
Five days	6-7	11-20	Dipapitungbongi
Six days	8-11	21-40	Rapasan
Seven days	21-23	41-50	Rapasansundun
Eight days	24-40	51-100	Rapasansapurandanan

Source: Tulak [8]



**Figure 7.** Rambu Solo' ceremony:

- a. Rambu Solo' in the olden days
- b. Ma'badong, a mandatory dance
- c. Ma'tinggorotedong and d. Mantarimatamu, the guest welcoming

### *Rambu Tuka'* ceremony (thanksgiving ceremony)

The ceremony is identified as a joyous thanksgiving ceremony, also known as *Aluk Rampe Matallo* or a religious ceremony conducted at the time when the sun is rising. It is commonly conducted in the morning times (eastern), either in the forms of a harvest feast, traditional house parties, or wedding ceremonies (Table 2).

**Table 2.** Types of *RambuTuka'* ceremony

Type	Characteristic
<i>Mangrarabanua</i>	as a symbol of gratefulness to God after building a house.
<i>Ma' bugi'</i>	post-harvest, usually in community scale.
<i>Merok</i>	to commemorate the death of a nobleman; as a completion of a set of funeral ceremonies by the close relatives after the mourning period.
<i>Ma'buu'</i>	Similar in procedures and forms as the Merok ceremony, however, not all regions can afford holding this ceremony due to its elaborated nature, thus making it the most interesting and substantial ceremony.
<i>Ma'sassiri</i>	in the form of a harvest festival and considered as the closing of a funeral commemoration for the middle-end families. Commonly includes immolation of 2-4 pigs.

### Characteristics of Tourism Components

In general, tourism components consist of supply and demand. The following description is the explanation of supply and demand of tourism in the study area.

### Tourism Objects

The dominant tourism objects existed in Buntula'bi Sub-village are hundreds of year old *Tongkonans*, such as *Tongkonan* of Lingkasail, Rantewai, Kollo-Kollo and Belolinggi'. There are also Kollo-Kollo museum, *Rante Tendan*, *Liang Tondon* and *Lokko Tarra*. The following table explains the characteristic of tourism objects in Buntula'bi Sub-village (Table 3).

**Table 3.** Tourism Objects of Buntula'bi Sub-village

Object	Characteristics
<i>Tongkonan</i> Kollo-kollo	an old <i>Tongkonan</i> ornamented with typical Torajan carving. Positioned at the top of the <i>Tongkonan</i> is a museum to keep the valuables of the ancestral heritage, ranging from home appliances, war equipment, to jewellery.
<i>Tongkonan</i> Rantewai	a <i>Tongkonan</i> marked with a wooden statue of a dragon-shaped head. The dragon statue symbolises strength, courage, and leadership. The eight in number signifies that the owner is known as the leader of the eight directions of the compass in the village and surrounding Balusu.
<i>Rante</i> <i>Tendan</i>	a location for several menhirs in the Buntula'bi. Total of 59 units of hundreds of year old menhirs in this area were used as part of tribal ceremonies by three <i>Tongkonan</i> , namely Lingkasail, Rantewai, and Kollo-Kollo.
<i>Liang</i> <i>Tondon</i>	stone grave on cliffs. These rocks were carved to resemble multi story cots, locally known as <i>liang</i> . Each hole/box is occupied by one's body of the nobles.
<i>Lokko</i> <i>Tarra</i>	a natural cave that also used as graves for the common people other than the nobels of Balusu.

### Tourist Attraction

A tourist attraction is an attraction that able to attract tourists who want to visit [9]. The forms of attractions in Buntula'bi Sub-village include activities such as:

- Something to do (visiting the *tongkonan*, mountain tracking, cycling);
- Something to see (enjoying the natural beauty, visiting *Liang Tondon*, visiting *Lokko Tarra*, visiting *Kollo-Kollo* museum, and attending art performances)
- Something to memorize (witnessing rituals and ceremonies of *Rambu Solo'* and *RambuTuka*).

Detailed information about the traditional art as tourist attractions in Buntula'bi Sub-village showed in Table 4.

**Table 4.** Traditional Dances in Buntula'bi Sub-Village

Traditional Dance	Meaning and Forms of The Dance
<b><i>Rambu Tuka'</i> (thanksgiving ceremony)</b>	
<i>Ma' Gellu</i>	As the most popular dance, this dance is performed in ceremonies such as wedding celebration, harvest feast and guest welcoming. Performed by 5 or more female dancers using special costumes and accessories such as antique gold.
<i>Pa' Bonebala</i>	Similar to <i>Ma'Gellu</i> except for the drum rhythms and the existence of a special song sung while dancing.
<i>Ma' Dandan</i>	Performed by women dressed in complete white with traditional accessories known as <i>Sa'pi</i> (a head dress resembling Torajan house roof) as they dance to the music.
<i>Manimbung</i>	The dance is performed by a man dress in black and accessorized by a matching headband made of chicken feathers. It is performed as a respect symbol to the late ancestors as harvest festival and a house party.
<i>Manganda</i>	This dance is performed by a group of men wearing head dresses of a buffalo horn decorated with coins. Each of the dancers carries a small bell which is played interspersed with screams.
<i>KelluTungga'</i>	This dance is performed with a chanting poem about a person's journey according to the person's social status. It is commonly performed at harvest celebrations.
<b><i>Rambu Solo'</i> (the funeral ceremony)</b>	
<i>Ma' Badong</i>	Performed by a group of people forming a circle. In this dance, the dancers spin while a mourning song is played. It can be performed by both males and females. The dance tells a story of a human's life.
<i>Memanna</i>	This dance is performed in a funeral ceremony of someone being murdered.
<i>Ma' Jogge'</i>	Intended to welcome guests at the funeral of a noble person. Dancers are all dressed in black with a distinctive head dress known as <i>Sa'pi</i> .
<i>Pa' Pangan</i>	This dance is often performed by the girls to greet guests
<i>Ma' Randing</i>	It danced to drop off and pick up guests at the funeral of the nobles. It danced by men with accessories such as attributes of war, e.g. spears, machetes and shields.

### Tourist Facilities

A limited number of tourist facilities are found in Buntula'bi Sub-village. Tourists will find lack of accommodations, restaurants, toilets, travel agents and tour operators. In addition to those, unavailability of supporting facilities such as souvenir shops, ticketing lockets, and management office should be considered for further development.

### Tourism Infrastructure

Tourism infrastructures in the sub-village are generally provided in good condition. These include roads (access), water supply, sewerage, waste management, communication and drainage.

### Tourist

Tourists' perceptions at tourist objects in Buntula'bi Sub-village is recapitulated according to their percentage and average scores toward each tourism attribute (Fig. 8).

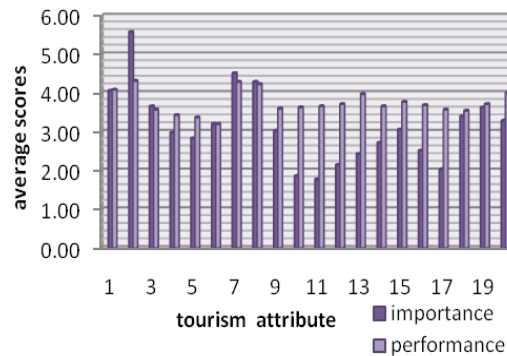


Figure 8. Satisfaction level and object's performance

Legend:

1. Natural beauty
2. Ancient buildings
3. Kollo-kollo museum
4. RanteTendan
5. LokkoTarra natural caves
6. Liang Tondon

7. Indigenous culture as a tourist attraction
8. Rambu Solo's rituals and ceremonies
9. Traditional art performances
10. Restaurants and accommodation
11. Souvenir shops
12. Public facilities (toilets and garbage bins)
13. Road condition
14. Transport mode to tourism objects
15. Infrastructure
16. Information
17. Tour guide service
18. Tourists' safety
19. Community participation
20. Tourism objects' management and preservation.

### Public

Most of the Buntula'bi locals are inclined to the development of tourism in the sub-village as identified from 69% of the respondents. Demographically, the community comprises of 50.1% women, 57.28% Christians, and a significant 71.84% farmers.

### Tourists' perceptions toward the service of performance attraction

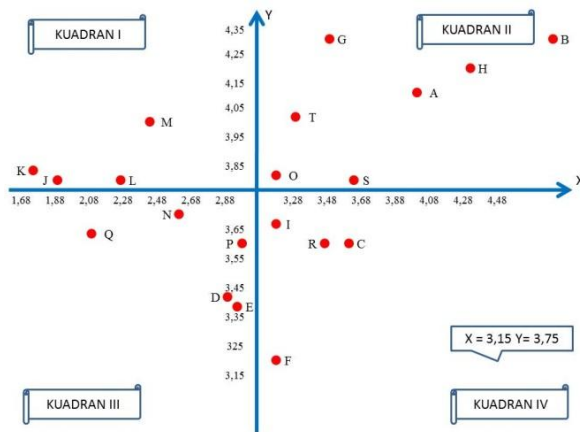
The tourists' satisfaction level of the objects' performance in Buntula'bi Hamlet is based on the tourism components (Table 5). X is the satisfaction value level, Y is the importance value level, and Tik is the compatibility level.

Table 5. Saticfaction and Importance Levels of Tourist Objects in Buntula'bi Sub-Village

No	IPA Attributes	Satisfaction level (X)	Performance level (Y)	Compatibility(%)
<b>Tourism Object</b>				
1	Natural Beauty	4.06	4.09	99.37
2	Ancient buildings	5.57	4.31	129.14
3	Kollo-Kollo museum	3.66	3.57	102.40
4	RanteTendan (venue for tribal ceremonies)	2.97	3.43	86.67
5	LokkoTarra(natural caves)	2.83	3.37	83.90
6	Liang Tondon (stone graves)	3.20	3.20	100.00
<b>Tourist Attraction</b>				
7	Indigenous culture as a tourist attraction	4.51	4.29	105.23
8	Rambu Solo's rituals and ceremonies	4.29	4.23	101.35
9	Traditional art performances	3.03	3.60	84.13
<b>Tourism Facilities</b>				
10	Restaurants and accommodations	1.86	3.83	51.18
11	Souvenir shops	1.77	3.76	48.44
12	Public facilities (toilets, garbage bins)	2.14	3.71	57.69
<b>Tourism Infrastructure</b>				
13	Road condition	2.43	3.97	61.15
14	Transport mode to tourism objects	2.71	3.66	74.22
15	Infrastructure	3.06	3.77	81.06
<b>Tourists</b>				
16	Information	2.51	3.69	68.22
17	Tour guide services	2.03	3.57	56.80
18	Tourists' safety	3.40	3.54	95.97
<b>Society</b>				
19	Community participation	3.63	3.71	97.69
20	Tourism objects' management and preservation	3.29	4.00	82.14
<b>The Average</b>		<b>3.15</b>	<b>3.75</b>	



Based upon the IPA analysis and also by considering the satisfaction and importance value of the tourism components variables in table 5, the distribution of each attribute is depicted in a Cartesian coordinate diagram below (Fig. 9).



**Figure 9.** The distribution of tourist satisfaction towards Buntula'bi Sub-villaget attraction.

Legend:

- A. Natural beauty
- B. Ancient buildings
- C. Kollo-kollo museum
- D. RanteTendan
- E. LokkoTarra natural caves
- F. Liang Tondon
- G. Indigenous culture as a tourist attraction
- H. Rambu Solo's rituals and ceremonies
- I. Traditional art performances
- J. Restaurants and accommodation
- K. Souvenir shops
- L. Public facilities (toilets and garbage bins)
- M. Road condition
- N. Transportation modes to tourism objects
- O. Infrastructure
- P. Information
- Q. Tour guide service
- R. Tourists' safety
- S. Community participation
- T. Tourism objects' management and preservation.

The output of this analysis suggests improvement priority based upon the distribution of each attribute in each quadrant [9]. The detailed explanation of the quadrants is as follow:

- **Quadrant I, Concentrate here (top priority):** including 4 attributes, i.e. public facilities, road condition, restaurants and accommodation, and souvenir shops.
- **Quadrant II, Keep up the good work,** including 7 attributes i.e. Natural beauty, ancient buildings, the indigenous culture as a tourist attraction, *Rambu Solo's* rituals

and ceremonies, infrastructure, community participation, and the tourism objects' management and preservation.

- **Quadrant III, low priority,** including 5 attributes, i.e. *Rantetendan*, *LokkoTarra* natural caves, transportation modes to tourism objects, information, and tour guide services.
- **Quadrant IV, possible to overkill (excessive),** including 4 attributes i.e. Kollo-Kollo museum, *Liang Tondon*, traditional art performances, and tourists' safety.

#### Tourism development strategy based on the perception of Buntula'bi tourists

Based on the IPA analysis, the alternative strategy for tourism development in Buntula'bi Hamlet can be elaborated to the following:

**Quadrant I,** concentrate here/top priority (high importance level, low satisfaction level). The strategies are:

- Improving the public facilities such as toilets and garbage bins to support tourist amenities.
- Optimizing the road conditions (especially the Balusu axis) to provide better access to Buntula'bi.
- Developing restaurants and accommodations.
- Developing souvenir shops.

**Quadrant II,** keep up the good work/keep achievement (both high importance and satisfaction level). The strategies are:

- Preserving and maintaining the natural environment.
- Preserving traditional characteristics and values of both buildings and villages.
- Preserving and maintaining indigenous culture as a tourist attraction.
- Preserving and maintaining the traditional rituals and ceremonies of *Rambu Solo'*.
- Maintaining the infrastructure such as roads (access), drainage, water supply, communication in Buntula'bi.
- Maintaining community participation by involving them in the environment restoration and preservation processes.
- Maintaining all kinds of tourism objects to boost tourist attraction.

**Quadrant III,** low priority (low important and satisfaction level), the directions are:

- Restoring the function of *Rante Tendan* as a venue for traditional ceremonies such as *Rambu Solo'*, besides *Rantelssun*.

- Designating the natural cave of *Tarra Lokko* as the burial site for the common people of Buntula'bi.
- Granting public transportation access to the objects for easier accessibility.
- Providing sufficient information about tourism objects.
- Providing additional tour guide services; though tourists are satisfied with the current availability of local tour guides.

**Quadrant IV**, possible to overkill/excessive (low importance level, yet high satisfaction level).

- Sustaining the maintenance of the Kollo-Kollo museum.
- Sustaining the maintenance of *Liang Tondon* as a burial place for the nobles in Buntula'bi.
- Sustaining support for the dance studio and *pa'katia* (a guest welcoming group) for art performances.
- Ensuring tourists' safety by maintaining indigenous values of Buntula'bi as a safe and secure traditional neighborhood.

## CONCLUSION

The tourism potential in Buntula'bi Sub-village is a constitution of ancient buildings and traditional environment. Based upon the IPA analysis, the top priorities in tourism development strategy are formulated to:

- Improve public facilities
- Optimize road condition for better access
- Develop more restaurants and accommodations
- Develop souvenir shops

Also given the good performing aspects in Quadrant II (keep up the good work), the tourism developments strategy in Buntula'bi should also be taken to:

- Maintain and take care for the natural beauty
- Maintain the characteristics of ancient buildings
- Maintain the attractive activities (local heritage) as the tourist attraction
- Maintain the rituals and ceremonies such as *Rambu Solo'*.
- Maintain the internal utilities
- Maintain the community involvement in the restoration and conservation of environment
- Maintain and keep the attraction as a form of management and protection of attraction.

## REFERENCES

- [1]. Sarm, C. 2013. Managing interpretation at UNESCO World Heritage Site: A supply-side

perspective of Angkor Wat Temple, Cambodia. Master Thesis. Master Of Tourism Management, Victoria University of Wellington.

- [2]. Sugiyono. 2009. Research methods quantitative, qualitative and R&D. Bandung. Alfa Beta.
- [3]. Arikunto, S. 2006. Research procedure, A practical approach. Jakarta. RinekeCipta.
- [4]. Sari, E.S. 1999. Audience research. Jakarta. Ghalia Indonesia.
- [5]. Martilla, J.A., and James, J.C. 1977. Importance Performance Analysis. Journal of Marketing 41, 77-79.
- [6]. Bacon, D. 2003. A comparison of approaches to Importance – Performance Analysis. International Journal of Market Research XXXV(2), 55-71.
- [7]. Palebangan, F.B. 2007. Aluk, Mores of Toraja. Tana Toraja. Sulo Publisher.
- [8]. Tulak, D. 2008. Kada Disedan Sarong Bisara DiToke' Tambane Baka. Tana Toraja. Tourism and Cultural Agency.
- [9]. Yoeti, and Oka, A. 1996. Introduction to tourism science. Bandung. Angkasa.

## Agroedutourism and Ecopreneurship Activities on the Organic Farming Practices in Lawang, Malang Regency, East Java, Indonesia

Ayu Raisa Khairun Nisa'<sup>1</sup>, Setijono Samino<sup>2</sup>, Endang Arisoesilaningsih<sup>2</sup>

<sup>1</sup> Master Program of Biology, University of Brawijaya, Malang, Indonesia

<sup>2</sup> Department of Biology, University of Brawijaya, Malang, Indonesia

### Abstract

Five farmer groups in Lawang, Malang Regency, East Java Provinces, established organic agricultural practices almost two decades. They were visited frequently for farmer benchmarking activities; therefore they had planned to develop agroedutourism. The aims of this research were to identify potential organic farming activities as agroedutourism attractions as well as farmer ecopreneurship, to find out the existing agroedutourism facilities profile and to propose some strategies for further sustainable development. The data were gathered by interviewing key person of each farmer group in Lawang. Their agroedutourism profiles compared with a developed local agro-tourism using gap analysis. Farmer groups offered some distinct attractions and become their strengths such as out door activities in the organic perfumed and pigmented rice field, fruits and vegetable garden, zero waste management, biological pest control and healthy agricultural products. Establishment of this agroedutourism would be advantageous to lesson sharing among farmers and students, to be ecopreneur activity shown by an effective market system, to show real benefits of healthy agro-ecosystem and its products, as well as to show promising green business or ecopreneurship. Collaboration among them would improve available attractions and length of visit. Moreover, the results showed that 80% of farmer groups were visited regularly 5-10 times per month by potential visitors such as other farmer groups, house wives, staffs of agricultural departments and students. All farmer groups planned to develop agroedutourism; however the policy was only issued by 60% of farmer groups. Most of farmer groups showed a high variability in providing edutourism tours and guides. For sustainable development, farmer groups should provide more interesting attractions and facilities, develop their human resource, net working, and public promotion.

**Keywords:** agroedutourism, attraction, ecopreneurship, farmer groups.

### INTRODUCTION

Conventional farming is generally characterized by extensive use of pesticides, fertilizers, and external energy inputs; high labor efficiency; large capital investments in order to achieve a high production and efficient management technology; large-scale farms; single crops/row crops grown continuously over many seasons; uniform high yield hybrid crops; and rapid technological innovation [1]. Conventional farming contributes many negative impacts such as soil erosion, nutrient run off, loss of organic matter, impairment of environmental quality and pollution of natural water by agricultural synthetic pesticides or fertilizer residues [1]. Pests and diseases become more difficult to be controlled as they become resistant to chemical pesticides. In addition, the prolonged use of chemical substances could stay in the soil for a long time and enter the food chain where they accumulate in the bodies of plants, microbes,

animals and humans, as well as causing health problems [2].

Several negative impacts of conventional farming system trigger people awareness on healthy life and idea of back to nature. Organic farming system starts to gradually replace the conventional ones due to increasing demands of organic food and growing environmental concerns. Indonesian Agricultural Ministry established program of "Go Organic 2010" toward a leading organic producer in the world. Unfortunately, organic farming in Indonesia is still less developed and lack of significant contribution to agribusiness with limited commodities [3]. Generally, only old farmers show willingness to practice organic farming due to this farming system is completely relevant to their previous local knowledge. Based on traditional farming system, farmers produce high quality products, use their own fertilizer and minimize in tilling the soil. This condition also worsened by the youth who does not interested and proud become farmer anymore, whereas agriculture is consistently important sector in Indonesian economic development and contributes a significant role to establish national food security.

---

\* Correspondence address:

Ayu Raisa Khairun Nisa'

Email : chabio29@gmail.com

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

During Indonesian economic crisis in 1997-1998, farmers faced a great difficulty to get chemical fertilizers and pesticides. It challenged rice farmers in Lawang to convert their farming system to organic one in 1998. Even now, in Sumber Ngepoh Village only has two farmer groups consisting almost a hundred farmers who cultivate organic rice. Actually, organic farming system has been developed in harmony with the nature without harming the environment as well as people who live or work in it. It creates a healthy balance between nature and farming, where crops and animals grow, while pests and weeds are controlled to an acceptable level for high yield benefits [2]. Studies reported that organic farming is able for increasing the level of total nitrogen in soil and preventing nutrients leaching [4].

Organic farming is not only eco-friendly but also provides a great opportunity to start green business for farmer. Therefore, farmer groups in Lawang developing varied organic products such as perfumed and pigmented rice, vegetable, fruit and livestock. In the beginning, they faced many difficulties in marketing their products because distributor fixed the price and monopolized the marketing. In addition, organic products are consumed by limited people due to less awareness on the importance of healthy food. Furthermore, farmer groups tried to improve their activities to become tourist destination through agroedutourism. They are frequently visited and become reference site for student to aware the farmer's potency and importance of conversion conventional farming toward organic farming. Therefore, aims of this research were to identify potential organic farming activities as agroedutourism attractions as well as farmer ecopreneurship, to find the existing agroedu-

tourism facilities profile and to prepare some strategies for further sustainable development.

## **MATERIALS AND METHODS**

This research was carried out in Sumber Ngepoh Village and Wonorejo Village, Lawang, East Java Province, Indonesia (Fig. 1), on August 2013 to March 2014. Lawang is a gateway of Malang City with elevation 485-560 meters above sea level, temperature 22-32°C and a precipitation 349 mm.month<sup>-1</sup> [5]. Most farmers in Sumber Ngepoh Village had planted rice using inorganic pesticides and fertilizer, but there were two farmer groups developed organic farming systems. The last village already becomes a tourist destination namely Krabyakan Springs, where is always visited, especially in the weekends and holidays. Another study site was Wonorejo Village, a corridor to the Tea Plantation Tourism in Wonosari Village. Three farmer groups in the village have produced the vegetable and livestock in their organic farming system. They produced their own organic fertilizers and natural pesticides from their livestock waste treatment.

Therefore, five farmer groups were selected based on their farming system to provide organic rice, vegetables, fruits, spices and dairy products. Self assessment on existing tourism facilities, policy and performance was conducted by direct observation, site visit, distribution of questionnaire and depth interview with key person of each group. All data were tabulated in *Microsoft Excel* 2007, descriptively analyzed. Furthermore, gap and SWOT analysis used to compare their profile with a local well-known agro-tourism in Malang Regency, namely Kusuma Agro-tourism. Based on these gap and SWOT analyses, we proposed some strategies to achieve sustainable agribusiness development.



**Figure 1.** Map of study sites in Lawang



## RESULTS AND DISCUSSION

Lawang has beautiful view and fresh air therefore many people visit for reason refreshing since colonial era. The beautiful old buildings are well distributed in the village. For this moment, Lawang provides some unique organic agricultural products such as organic perfumed or pigmented rice in Sumber Ngepoh Village, while organic vegetables, fruits and dairy products in Wonorejo Village. Diversified high-low land agriculture commodities are available a long the year, so that Lawang are not only a gateway of Malang to Surabaya but also become a promising tourist destination as well as local people and government may generate in traditional markets and restaurant. Lawang traditional markets provide many vegetables, fruits and many other agriculture products. Unfortunately, most of them are produced from inorganic farming. Now days, tourists from Surabaya or Malang are visit shortly.

### Potential Agroedutourism Attractions

Lawang is known as one of major center for organic agriculture production in Malang. This agriculture is also important links to tourism and introduces environmental education, such as locally grown products, authentic experiences by agricultural heritage and culture as well as enhances the exceptional quality of life. Therefore, Lawang has opportunities to switch agriculture to agroedutourism. Through organic farming practicing, farmer groups had shown farming landscape, scenes and traditional agricultural tools. Based on the five farmer groups' assessment and the gap analysis, it revealed that actually they had offered some different attractions such as livestock farm, organic rice field, fruits and vegetable garden (Fig. 2).

Gap analysis on tourism attractions between agroedutourism in Lawang and Kusuma Agro-tourism were presented in Table 1. Both of tourism presents organic farming system, such as visitors could look around on crops and livestock

product using naturally process without chemical fertilizers. However, Lawang provides more varied and complete attractions than Kusuma Agro-tourism. Visitors have a chance to walk around in the rice field or garden to learn a healthy ecosystem and managing agricultural products, food chain, food security, biological pest control as well as ecological and economical benefits of organic farming practice. Moreover, farmer groups also show the suitable process to cultivate rice, fruits and vegetables, therefore the crops grow optimally and produce a good quality yield. Visitors can bring back some vegetable seedlings or purchase seeds to be germ mated at home. Some rice varieties grown were perfumed 'Mentik Wangi' rice, black rice and red rice. In addition, there was diverse of crops and tropical fruits, such as vegetables, cloves, nutmeg, banana, avocado, etc.

Besides that, the organic farming also becomes study site of several colleges who learnt on organic farming, goat breeding, marketing organic products and agro industry. In Sumber Ngepoh, farmer groups present agricultural production processes of plowing, sowing, transplanting, tiling, weeding, irrigation, harvesting, transporting, threshing and grain processing. Other interesting attractions are joining processing black and red cereal, started from washing, drying, cooking, and grinding until packaging. All of these activities were presented by friendly local community.

Farmer groups also presented a variety of educational activities. There are various activities in the livestock such as feeding, capturing picture and milking goat, composting, preparing liquid fertilizer and local microorganism. Some products could be purchased by visitors such as goat's milk ice cream, kefir, body lotion, soap and body scrub from goat's milk. The gap analysis indicating farmer groups in Lawang are able to present seven attractions (Table 1). It is a great opportunity for them to develop agroedutourism but they should complete it by creating other attractive and creative activities.



**Figure 2.** Agroedutourism development of five farmer groups in Lawang.

a-b) Local organic perfumed and pigmented rice in Sumber Ngepoh Village; c-e) Organic fruits, vegetable garden and goat farm in Wonorejo Village.

**Table 1.** Tourist attractions provided by five farmer groups in Lawang based on gap analysis

No.	Attractions	Five Farmer Groups in Lawang	Kusuma Agro-tourism, Batu	Gap
1.	Rice field or garden tour	Walk around organic rice field, fruits (banana & avocado), spices and vegetables gardens also goat farm.	Walk around orange, apple, strawberry and organic vegetable garden also green house [6].	+
2.	Milking goat	Attraction available in the morning or afternoon.	-	+
3.	Waste management	Composting, making local microorganism and liquid fertilizer	-	+
4.	Planting crops	Several crops such as tomato, eggplant and mustard	-	+
5.	Harvesting fruits or vegetables	Absence	Fruits harvesting with tour guides [6].	-
6.	Healthy agro-ecosystem	- Learn farmer's friends and enemies in rice field - Learn raw material plants for bio-pesticide and natural attractant/repellent - Learn benefit of green business	-	+
7.	Producing post harvest crops	Pigmented rice cereal	Home industry, apple crops as main products [7].	+
8.	Provision of agricultural products	Goat milk, ice cream & kefir from goat milk, cosmetic (soap, body lotion & spa) from goat milk, organic perfumed & pigmented rice, pigmented rice cereal, local banana, avocado, crispy chips of banana, jackfruits & mushroom and organic vegetables.	Apple juice, porridge, 'wingko', butter, wine apple and vinegar [7].	+
<b>Sum of available attraction</b>				<b>7</b>

Positive (+) = available and negative (-) = absence

Other attractions that can be presented by farmer groups such as fruits and vegetables harvesting, modified traditional games combined with knowledge of organic farming and practice how to produce a post harvest of agricultural product. Crops variations, enjoyable place and hospitality of local community are expected to increase the visitor satisfaction.

Similar attractions were offered by Bogor Agricultural University that developed the first agroedutourism in Indonesia. Tour packages were designed by utilizing the educational facilities and agricultural resources. The manager offered tourist attractions such as laboratory field trips, experimental gardens, breeding of wild animals (primates, deer and birds), arboretum, lakes and other supporting facilities.

Another tourism garden destination, named Kebun Wisata Pasirmukti (KaWePe), Bogor, also provided similar activities. This tourism had been promoting educational sector for visitors, especially for children and students. The main tour package in KaWePe was 'Agropintar' that prepared based on age of visitors categories. For students, the tour packages adapted with school curriculum. One of facilities at this location was 'House of Farming' which provided the opportunity for visitors to look around the traditional farmhouses and their daily life.

Visitors can also interact directly in the 'House of Farming' to learn about feeding livestock, plowing or riding a buffalo. Visitors were expected to get good impression and new experience so they would interest to learn all about agriculture through this packages [8]. In Italy, some National Park develop organic excellence, such as Corte Merina Farm in Val Grande Park, Krauter Schlossl Farm in Stelvio Park, La Quercia della Memoria Farm in Monti Sibillini Park, Rinascita '78 Cooperative in Gran Sasso and Monti della Laga Park, "La Porta dei Parchi" Organic Agritourism in Abruzzo National Park and Majella National Park, Bio gargano Consortium in Gargano National Park, etc. Each site provides different attractions, traditional products and educational services. It is in order to strengthen the bond between the consumer and the farmers who promote agricultural diversity and rural tourism in National Park. The examples of organic excellence given here demonstrate that organic farming can be a valid way to reconcile the need to protect nature with the production of food and services, and thus income for farmers [9].

#### **Organic Farming as Ecopreneurship**

In their organic fields, farmer groups do not provide only seven attractions but also present

some ecopreneurship characters as shown in Table 2. Based on the gap analysis, it is known that farmer groups' activities in their organic field are qualified as ecopreneur actions. Agroedutourism is an integration of agriculture, education and tourism component that could be a promising farming enterprise to develop farmer groups business. Firstly, farmer groups provide themselves some eco friendly products such as organic rice, vegetables and fruit, kefir and goat milk, lotion, soap and scrubs from goat's milk and fertilizer. Most of them are supplied to visitors or regular customer therefore they contribute to organic supply chain and healthy products market.

This food safety does not advantage only to the farmers family but also help many patients of degenerative diseases who need nutritive and hygienic foods. These organic farming activities avoid farmer from health risk of conventional farming. Since the agricultural products are mainly to meet the group members needs while the rest are sold to the community. The Poland conventional farmers were victim of allergic and immunotoxic diseases caused by mold [10]. The other research showed that 37% of conventional farmers in Bangladesh reported faced frequent health problems such as eye irritation, headaches, dizziness, vomiting, shortness of breath, skin effects and convulsions [11]. Basically, organic farming applied by farmer groups in Lawang does not only serve a healthy food but also share knowledge on preserving a healthy environment. They share good

agricultural practices to others so they can initiate similar activities. They also present training service such as prepare natural pesticides and demonstrate organic farming. This training improves participants' knowledge, experience and skills on producing health food by using their own fertilizer and pesticide [12]. Therefore, these activities indicate ecopreneurship characteristics and eco friendly services as reported by Schaltegger [13]. Moreover, organic farming also provides several advantages such as supply a fresh air, preserve soil fertility and water conservation as well as global warming mitigation.

Secondly, organic farming as a food production, did not use synthetic fertilizers and chemical pesticides, would be a part of green economy and support sustainable consumption and production. Farmer groups prepare autonomously natural fertilizers or pesticides from local materials such as plants and animals residues as well as microbes, so that they can significantly reduce fertilizer and pesticide cost. A farmer group leader said that he was triggered to reapply organic farming system for reason of economic difficulties due to high price of chemical fertilizers and pesticides. The older people believe that each plant already carries its own fertilizer. Based on this statement, he tried to do small experience. Therefore, he decided applying the traditional farming without using any chemical fertilizers or pesticides. He tried to put straw in the rice fields and to mix it with cow manure.

**Table 2.** Gap analysis between organic farming five farmer groups and ecopreneur characters

No.	Farmer groups activity	Ecopreneur characteristics	Gap
1.	- Farmer groups provide eco friendly products such as organic rice, vegetables and fruit, kefir and goat milk, lotion, soap and scrubs from goat's milk, fertilizer, as well as training services to prepare natural pesticides and demonstrate organic farming. - The products fulfill the needs of farmer group members and then the rest are sold	Supplies eco-friendly products and services [13].	+
2.	- Organic farming activities are carried out by minimizing chemicals use. - It becomes an effort to reduce carbon emissions by commodity movement.	The entrepreneurship are not only to make profits, but also contribute to preserving the natural environment [13].	+
3.	Farmer groups create and use eco friendly products and become an appreciation of future generation life.	Business behavior are committed to sustainability [14].	+
4.	Each farmer group has the main and complementary commodities, which reflected their local environmental resources, as well as based on their socio-cultural values.	Combination of strong environmental and social value with energetic entrepreneurial attitude [15]	+
<b>Sum of ecopreneur characteristics</b>			<b>4</b>

Positive (+) = available and negative (-) = absence

The trials were not immediately success, but to date the farmers harvest 6-7 tons rice grain per ha. This suggests that agroedutourism also ultimately influences in increasing many profits for farmer and their customer. Even yield of organic farming are lower than those of conventional one [16]. However organic products price is often higher in the market than the conventional products [17]. Using traditional knowledge, farmers apply organic animal manure or legume intercropping system to improve the low productivity due to nitrogen shortages.

Organic farming becomes promising ecopreneurship activities if it is integrated with tourism sectors. Agroedutourism can be alternative strategy to promote local biodiversity, to sustain rural economy and to protect farmer incomes against market fluctuation. Nevertheless, unlike the other entrepreneur activities, agroedutourism is not only focusing on profitable aspect but it also emphasis on health of human and environment aspects. Almost all of farmer group leaders said that, *"If we expect to have lived healthy, so it should be started from the healthy diet"*. In other words, healthy food from organic farming can be the beginning of a healthy lifestyle. These become a good example for other farmers, because nowadays only a small number of farmer family are aware on food safety and take responsibility to sustainability of healthy environment. In this agroedutourism, farmer groups try to open mind of community that consuming healthy food is very easy. In small scale, it can be provided by home gardening.

Farmer groups also have expectation that local people can be more autonomous in raw material provision and reduce imported products. Thereby it helps reducing carbon emissions due to the international delivery products or services. One of the important things in green business is preserving the natural environment [18], therefore environmental impact of organic farming would become attention, such as reduce food exports [16]. Studies in England showed that the transports were accounted for approximately 40-70% of the carbon footprint of imported plant products transported by ships and or trucks. Another research reported that transport of organic soybean from China to Denmark was contributes half of the carbon footprint [19]. Based on this information, it can be concluded that agroedutourism support sustainable environment and food security by producing locally grown products and minimize the imported organic products.

Third, agroedutourism development also promote sustainable farming systems to others. Organic farming systems is not only the process of sustainable production and consumption, but also the process to produce and use the product based on needed, bringing a better life quality and minimizing use of natural resources, toxic materials and pollutants emissions over the life cycle. Thus organic farming did not harmful to the future generations. This concept showed process of sustainable development has to respect to our life cycle without sacrificing other life cycle. The establishment of agroedutourism in organic farming will provide great advantages such as efficient farming system by zero waste management, increase pest and crop equilibrium by diversification of crop commodity, organization development, national recognition, a lot of product demand, in farm or off farm training, and give positive image of promising green business for the young generation. Organic agriculture contributes to sustainable development by: 1) Improving soil fertility, biodiversity and sustainability of agricultural production; 2) Conserving natural resources; 3) Improving agronomic and economic performance, making yields more stable, achieve better food quality and food security; 4) Providing access to attractive market; and 5) Creating new partnership within the whole value chain and to strengthen self confidence and autonomy of the farmers [20].

Finally, by organic farming development, farmer groups will minimize social imbalance and be more respects to other farmer groups. Since all farmer groups located in the same regency and they can serve a supply chain, collaboration among them will improve the interesting destination and length of visit. In addition, this collaborative network is important and strategic to preserve their professionalism to develop uniqueness commodity against unfair competition and contribute to people education and knowledge based society. Other socio-cultural benefits of agroedutourism such as 1) Creating new jobs and income for themselves and others, 2) Providing new tax required by local government for sustainable development of infrastructure, education and human health, 3) Rotating sustainable economic activities including production and marketing, 4) Supporting the birth of new ecopreneurs and involving participation of the community, 5) Becoming a promoter and user of new innovation in producing, managing and marketing of organic

products and service. Several studies indicated that, organic farmers should not only be success to provide, but they also might contribute to rural community development by offering significant innovation. For example, they might pay attention to social economy organizations, such as co-operatives and non-profits organization that give them a collective power as well as allow them to protection and advance organic farming [21]. Another advantage from this activity is reducing market chain and increasing customer satisfaction, it shows real benefits of healthy agro-system practices. Therefore, it is needed to improve public awareness of farming activity and concern on ecopreneurship or business.

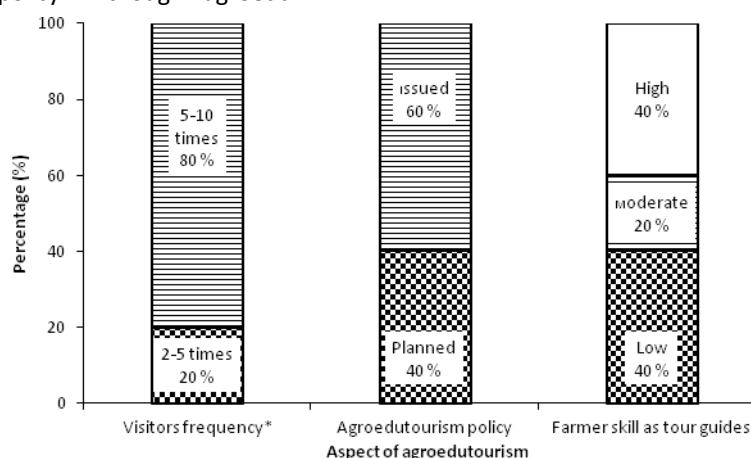
### **Agroedutourism Development Profile of Farmer Groups in Lawang**

After farmer groups developed organic farming from almost two decades, they had become benchmarking sites by some stakeholders. The study showed that 80% of farmer groups were visited regularly 5-10 times per month (Fig. 3) by potential visitors such as other farmer groups, house wives, agricultural staff or students. Indirectly, they provide agroedutourism for their visitors. They learnt to develop organic farming, marketing and managing organization. This tourism development was supported by a unique and wonderful nature. Moreover, the region show high ecosystem diversity (secondary forest, plantation, wetland, spring, river, home garden and colonial heritage settlement) and potential sites to develop various tourism activities based on integrated organic farming. Therefore, all of farmer groups had planned to develop agroedutourism, however only 60% of farmer groups issued the policy. Although agroedu-

tourism provides more advantages, there are two farmer groups are not ready to develop the activities. These farmer groups worried that mass visitors would disturbed the organic rice fields. Moreover, three farmer groups considered that their facilities are still unqualified to support a comfortable tourist destination.

At the beginning, a leader or a member of farmer groups has a role as tour guides and key person in organic agroedutourism development. Without any formal education, 40% of farmer groups still not confident and showed a low ability to be tour guide and to prepare guidance material (Fig. 3). It revealed that there are great variations among farmer groups and they have not yet shared formally their experiences to their visitors. Therefore, group member should be more knowledgeable and possess sufficient practical skills and experience before organizing agroedutourism. Meanwhile, talent and competent tours guides are prerequisite in every tourism business. Local human resources who understand the culture and attractions offered are important factors influencing the tourist satisfaction and tourism competitiveness [22]. Enhance of human resource skills could be done by tour guides training, benchmarking to others as well as followed by learning by doing. Farmer groups completed some facilities to support agroedutourism activities (Fig. 4). But based on the direct observation, we note that parking areas, toilets and trash bin are still absent.

Until now the visitor beneficial for farmer properties. Comparing to a local and well known agro-tourism site, the farmer groups should improve some aspects such as public relation unit, parking area, toilets, trash bin and security systems (Table 3).



**Figure 3.** Profile of agroedutourism in five farmer groups \* Frequency per month

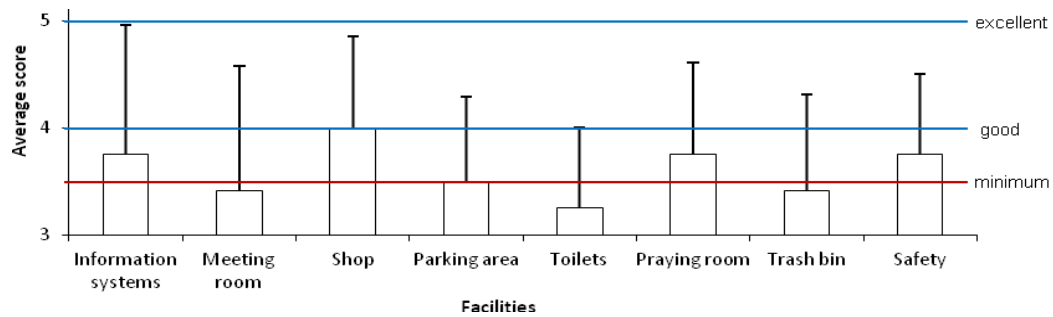


Figure 4. Selves' assessment of five farmer groups in Lawang to perform agroedutourism based on the Lickert's 1-5

In order to support the long visit tourism and joining more farmers' activities, the farmer groups should notify their visitors in promotion leaflets some useful information such as contact person, lodgment, tour tracts, schedules, maps, fares, passes, how to ride, travel agents, etc. Public facilities and accessibility are important factors influencing visitors' choice on a tourist destination [23]. Therefore, the lack of facilities or information might cause cancellation and or the visitors turn to another destination. Moreover, some public facilities such as streets, benches, trash bin, parking areas, location maps, signboard, shops, canteens and toilets should be prepared carefully in the tourism development plan [24].

#### Proposed Strategies for Existing Agroedutourism Development

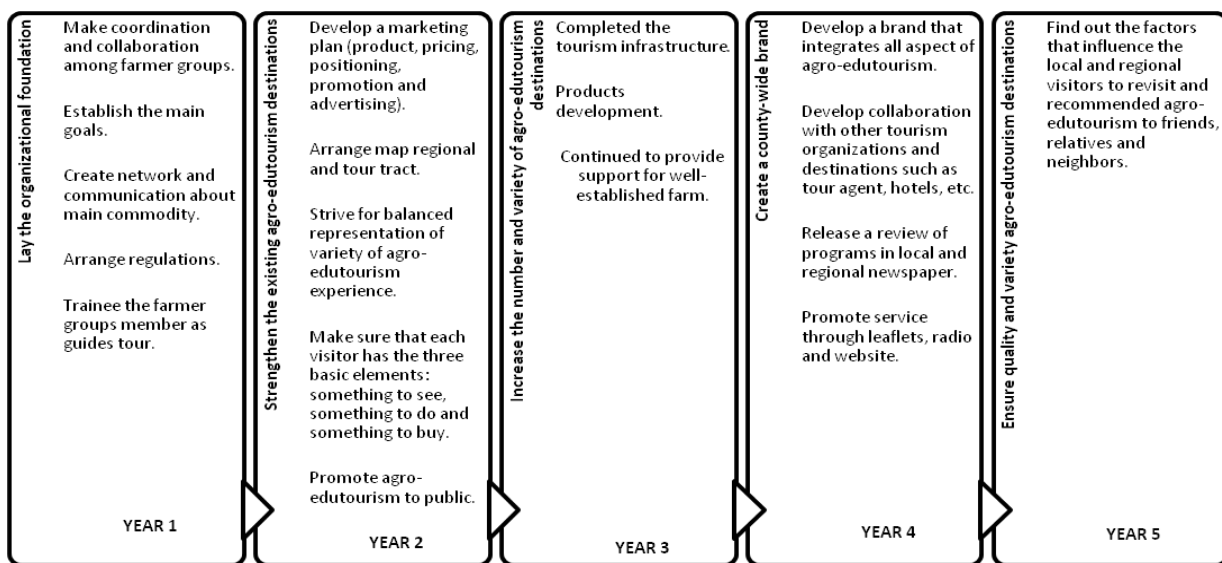
Based on farmer group selves' assessment, gap analysis, direct observation and SWOT analysis, we note some important findings. One side, they showed some strength to develop the

agroedutourism attraction and to support the ecopreneurship indicated by available various attractions of integrated organic farming, eco-friendly products and services, sustainable business, regular visitor and establishment of agroedutourism policy. However, their agroedutourism has no exciting attraction where visitors involve actively such as harvesting fruits, flowers or vegetable, variable tour guides skills, lack of public facilities and weak promotion.

In order to improve the development of agroedutourism in farmer groups we suggest them: 1) To develop some interesting attractions involving directly visitors activities, e.g.harvesting agricultural products and its post harvest processing to produce health and safe products or educative games; 2) To improve farmer skills as tour guides by establishing training and benchmarking to better agroedutourism destination, joining internship and developing focus groups discussion (FGD); 3) To complete the facilities, including public relation, parking area, toilets, trash bin and security systems, etc; 4) To

Table 3. Gap analysis between five farmer groups agroedutourism facilities in Lawang and Kusuma Agrotourism

No.	Variable	Existing Condition of Farmer Groups in Lawang	Kusuma Agro-tourism, Batu	Gap
1.	Public relation	No tourism unit but it is handled by the leader.	Marketing, finances and administration, production of annual crops, production of seasonal crops, agro-industry, restaurant, entertain and agribusiness clinic [6].	-
2.	Information system	Name card and leaflets	Leaflets, radio, signboard and web site	+
3.	Meeting rooms	One meeting room	Eight meeting rooms	+
4.	Shops	Available but limited products	Shops and home industry with all agriculture products [6].	+
5.	Parking area	Absence	Available [6].	-
6.	Toilets	Absence	Available [6].	-
7.	Praying room	Available, but tap water is limited.	All facilities are available [6].	+
8.	Trash bin	Absence	Available especially in public place [25].	-
9.	Security system	Absence	Available [6].	-
10.	Waste management	Available	Available	+
Positive aspects				5



**Figure 5.** Milestones and strategies to continuous development of agroedutourism farmer groups in Lawang

collaborate with some relevant farmer groups and stakeholders in Lawang to improve tour tracks and attractions; 5) To promote the agroedutourism to attract more visitors by leaflets, radio, website, exhibition and collaborating with tour agents; 6) To improve hospitality service and commitment of visitor satisfaction by arrange a better agroedutourism governance, regular assessment and management review.

Futhermore, farmer groups should record their milestones to help themselves to focus on goals achievement. Milestones building of green economy for sustainable agribusiness development in Lawang could be programmed into long (5 to 20 years) and short term strategies (1 to 5 years) (Fig. 5). In the short term plan, the program can be run smoothly if the farmer groups involve all elements of the system, focus to their goals achievements, better in managing the visitor feedback, held a management review twice per year to monitor the progress or constraints of each program.

## CONCLUSION

Five farmer groups in Lawang have shown agroedutourism and ecopreneurship activities in their organic farming daily activity. They provide agroedutourism indicated by some available attractions: walk around the organic garden or the livestock farm and practice organic farming, preparation until harvest. These agroedutourism activities strengthen farmer ecopreneurship by integrating various attractions into organic farming, providing eco-friendly products or

services, and establishing policy to support green business. Unfortunately, their performance still limited due to some weaknesses such as lack of the exciting tourist attraction, variable tour guides skills, public facilities and effective promotion. Therefore, we suggest improving their performance by better managing human, natural resources and services.

## ACKNOWLEDGMENT

Author would like to thank organic farmer groups in Lawang for share information, all of colleague and staff Ecology and Animal Diversity Laboratory, Brawijaya University, Malang for spirit during research.

## REFERENCES

- [1] Diepeningen, A. D., O. J. Vos, G. W. Korthals and A. H. C. Bruggen. 2006. Effects of organic versus conventional management on chemical and biological parameters in agricultural soils. *Applied Soil Ecology* 31 (2), 120-135.
- [2] Chin, F. S., T. Y. Ho, K. P. Chong, M. B. Jalloh and N. K. Wong. 2010. Organic versus conventional farming of tea plantation. *BorneoScience* 26, 19-26.
- [3] Ministry of Agriculture. 2010. Strategic planning of Ministry of Agriculture 2010-2014. Jakarta.
- [4] Melero, S., J. C. R. Porras, J. F. Herencia and E. Madejon. 2006. Chemical and biochemical properties in a silty loam soil under conventional and organic

- management. *Soil and Tillage Research* 90 (2), 162-170.
- [5] Sub-district Government of Lawang. 2014. Selayang Pandang. [www.lawang.malangkab.go.id](http://www.lawang.malangkab.go.id). Accessed on 3 April 2014.
- [6] Priambodo, R. 2007. Analysis of performance assessment to measure the satisfaction level of consumer in Kusuma Agro Tourism, Batu Malang. Thesis. University of Jember. Jember.
- [7] Andria, F. 2010. Revitalisasi Pemasaran Produk Apel Olahan dan Implikasinya Terhadap Strategi dan Bauran Pemasaran PT Kusuma Satria Dinasari Wisatajaya-Malang. *Jurnal Unida*, 1 (1): 38-49.
- [8] Rokhman, M. 2008. Analysis of promotion strategies Agrotourism in Tourism Garden of Pasirmukti Citeureup, Bogor. Thesis. Study Program of Agribusiness Management, Bogor Agricultural University. Bogor.
- [9] Grandi, C. & A. Triantafyllidis. 2010. Organic Agriculture in Protected Areas, The Italian Experience. Natural Resources Management and Environment Department. FAO.
- [10] Zukiewicz-Sobczak, W., G. Cholewa, E. Krasowska, J. Zwolinski, P. Sobczak, K. Zawislak, J. Chmielewska-Badora, J. Piatek, A. Wojtyla. 2012. Pathogenic fungi in the work environment of organic and conventional farmers. *Postepy Dermatologii i Alergologii* XXIX (4), 256-262.
- [11] Dasgupta, S., C. Meisner and D. Wheeler. 2004. Is environmental-friendly agriculture less profitable for farmers? evidence on integrated pest management in bangladesh. World Bank Policy Research Working Paper, 3417.
- [12] Nisa', A.R.K., S. Samino and E. Arisoelaningsih. 2014. Organic agroedutourism attractions toward an interesting outdoor environmental education to junior high school students. *Journal of Tropical Life Science* 4 (2).
- [13] Schaper, M. 2005. Understanding the Green Entrepreneur. In M. Schaper (Eds). *Making ecopreneurs: developing sustainable entrepreneurship 2<sup>nd</sup> Edition*. Gower Publishing Limited: Farnham.
- [14] Kirkwood and Walton. 2010. What motivates ecopreneurs to start businesses? *International Journal of Entrepreneurial Behaviour and Research* 16 (3), 204-228.
- [15] Gibbs, D. 2009. Sustainability entrepreneurs, ecopreneurs, and the development of a sustainable economy. *Greener Management International* 55, 63-78.
- [16] Seufert, V., N. Ramankutty and J. A. Foley. 2012. Comparing the yields of organics and conventional agriculture. *Nature* 485, 229-232.
- [17] Pimentel, D., P. Hepperly, J. Hanson, D. Douds and R. Seidel. 2005. Environmental, energetic, and economic comparison of organic and conventional farming systems. *BioScience* 55 (7), 573-582.
- [18] Chopra, K. 2014. Ecopreneurship: Is it a viable business model? *AE International Journal of Multidisciplinary Research* 2 (3), 1-6.
- [19] Knudsen, M. T., Q. Y. Hui, L. Yan, G. F. de Almeida, L. S. de Abreu, N. Halbergand and V. Langer. 2011. Transport is important in the carbon footprint of imported organic plant products. *ICROFS News* 2, 4-7.
- [20] Kilcher, L. 2007. How organic agriculture contributes to sustainable development. University of Kassel at Witzenhausen JARTS, Supplement, 29, 31-49.
- [21] Sumner, J. and S. Liewelyn. 2009. Fact sheet: building stronger communities organic farmers and the social economy. <http://socialeconomycentre.ca/PDF/factsheets/orgfarmers.pdf>. Accessed on 1 July 2014.
- [22] Milic, V. J., S. Jovanovic and B. Krstic. 2011. Human resources in tourism as a factor of its employment and competitiveness growth-comparative analysis of Serbia and surrounding countries. *Facta Universitatis Series Economics and Organization* 8 (4), 433-445.
- [23] Al Muttaqien, A. 2007. Analysis on competitive strategies on Agrotourism of *Vin's Berry Park* of Jambudipa Village, Cisarua-Lembang Sub-district, Bandung Regency, West Java. Thesis. Study Program of Business Management, Bogor Agricultural University, Bogor.
- [24] Sopha, C. 2009. Ban Khmer and Ban Yuan Villages: a model for ethnic community for tourism development as a secondary attraction in Bangkok. Thesis Program of Architectural Heritage Management and Tourism. Silpakorn University. Bangkok.
- [25] Dimpudus, Y. A. 2012. Open spatial planning of fruit pick agrotourism area in Batu based on visitors' comfortness. Thesis. Department of Architecture Engineering, University of Brawijaya. Malang.



## Tourism Based on the Model of Strategic Place Triangle (A Case Study in Wisata Bahari Lamongan)

Ismuhadi Heru Wijayanto<sup>1</sup>, M. Saleh Soeaidy<sup>2</sup>, Siti Rochmah<sup>3</sup>

<sup>1</sup>Master Program of Public Administrative, Faculty of Administrative Sciences, University of Brawijaya, Malang

<sup>2</sup>Faculty of Administrative Sciences, University of Brawijaya, Malang

### Abstract

Tourism is a very promising prospects to support the economic development of a region. We assess *Wisata Bahari Lamongan* (WBL) as a tourism object. WBL was having significant decreased visitors in the last six years, thus a strategic plan is need to re-increase the number of visitors. This study used *Strategic Triangle Place* (SPT) model as an analysis tool to assess the strategic planning in WBL. SPT is an approach that includes three key components, namely: Positioning, Differentiation and Brand (PDB). This research used *Soft System Methodology* (SSM) which relevant to analyze the strategic plan model which is expected to be recommendations from tourists on problems in WBL. The result of this showed that the strategic planning of WBL did not completely accordance with the SPT model. Positioning and differentiation elements were still weak, and the brand was not well developed. Therefore, we recommend WBL to set targeted segmentation of all social backgrounds and ages, especially children. WBL should made the sea as main differentiated factor, thus it has marine tourism potential. WBL should build an image by providing best service quality, security, comfortness, cleanliness, and best quality rides.

**Keywords:** PDB, Strategic Place Triangle, WBL.

### INTRODUCTION

Tourism has grew and become one of the largest and fastest growth economic sectors in the world. In 2009, the contribution of tourism to the worldwide economic activity is estimated about 5% [1]. Because of that, currently many countries should take advantage from the tourism sector as a focus of future economic progress, including Indonesia. Because Indonesia already has sufficient capital value, i.e. great natural potencies to establish the strategic tourism areas.

Wisata Bahari Lamongan (WBL) was a marine tourism built in Lamongan in 2004. It is restructured and developed with cooperation between Lamongan Government and PT. Bunga Wangsa Sejati. Since it built in 2004, WBL has great contribution to the local revenue (PAD). Therefore WBL become the leading tourism product for Lamongan [2].

In the first year, WBL successfully get a total profit of 9 billion from a target of 7.5 billion, thus the next year target was raised to 9 billion. But, over the development of global tourism, the local revenue ratio in the last few years was bad due to the decreased visitor numbers.

Considered on these orientations, then in this study try to put forward a planning strategy based on the *Strategic Place Triangle* (SPT) perspective. Through this strategic planning, we absolutely necessary to reconsidering the role of WBL as a Lamongan Regency main attraction for tourism. Moreover, tourism visitors were decreased for the last six years in WBL. SPT is an approach of marketing places that includes three key components namely: *Positioning*, *Differentiation* and *Brand* [3].

SPT approach was taken because of successful experienced of Bali and Yogyakarta. The objectives of this study are to assess, describe, and analyze the Wisata Bahari Lamongan strategic planning based on SPT model.

### Strategic Place Triangle

This study used a main theory namely *Strategic Place Triangle* (Fig. 1). SPT has three key components as follows:

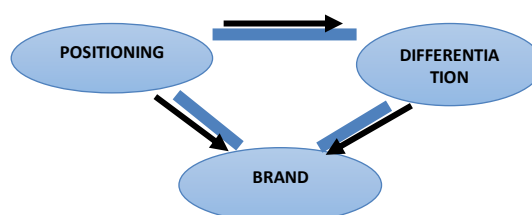


Figure 1. Strategic Place Triangle Model [3]

\* Correspondence address:

Ismuhadi Heru Wijayanto

Email : heru.wijaya91@gmail.com

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

### Positioning

The aim of positioning is to establish the funding firm's trustworthiness, confidence, and competence for investors (credibility). The company must define its identity and personality in the investor's mind [4].

As we move more into the era of globalized markets, where capital flow freely anywhere to obtain the best returns, companies should no longer depend on their traditional investors to provide financing when it is needed. Creditors no longer manage their investors; their investors have to be the lead. Leading takes credibility. Positioning is not just about persuading. It is also about earning investors' trust and confidence [4].

### Differentiation

Differentiation is a crucial factor for the success in attracting company funding. The essence of strategic differentiation is to choose activities that different from the rivals. A company's sustainable competitive advantage will be developed through the *strategic fit* between the various activities that make up this unique position. Thus, that positioning and differentiation are the key to achieve competitive advantage. Both form the essence of a company's strategy and tactics. Positioning is the core of the strategy, while differentiation is the core of the tactics [4].

### Brand

Brand is not solely developed through commercials in the mass media. More importantly, it can be developed through applying the right strategies, tactics, and value. Brand is not simply a name, logo, or symbol; nor is it merely the representation of company's products or services.

In the context of marketing the capital market, brand is the canopy that represents a company as a whole-brand; in this sense is more closely related to corporate brand. It is a reflection of a company reputation-value given and/or promised to the investors. Hence, it is generally taken as a company's *value indicator* [4].

### MATERIALS AND METHODS

This study take place at Lamongan Regency and Wisata Bahari Lamongan (WBL) as a research object. We review the SPT models as a reference for the tourism strategic planning in Wisata Bahari Lamongan. This research used *Soft System Methodology* (SSM) to analysis the strategic plan model to solve the tourism problem in Lamongan

Regency, especially Wisata Bahari Lamongan. SSM provide an explicit, organized and defensible way of reconciling different and/or conflicting perspectives. It means to build a model of business processes that appropriate to the users within the concern area. In addition, the useful of this model according to Wilson [5] are as follows:

1. Compare the reality to make recommendations for procedural change which can be argued to be beneficial.
2. Form a single model, reconciling many perspectives, representing description of a proposed business area.
3. Compare the model towards reality to re-define the roles and organizational structures.
4. Use the model as a source of information requirements to support the business area.

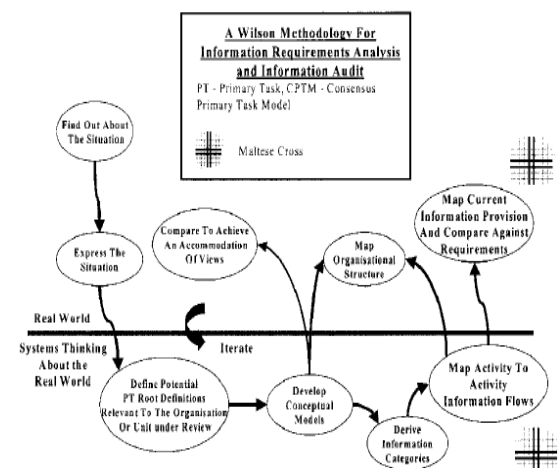


Figure 2. Wilson Methodology [5]

### RESULTS AND DISCUSSION

In this study we found that the decreased visitors were problem in WBL. By using the SSM method, we describe the situation in the real world and determine the root of problems (Fig. 3).

The problems of declining visits to WBL were caused by multi-actor and multi-instrumental aspects. Lamongan Government and private entrepreneurs were key actors in the development of WBL. In fact, they were not well integrated. Private company was lack of transparency related to the financial statements of WBL. The government also has weak control to the private sector performance. These problems was the dominant issue in the dimension of actor.

The aspects that influence the development of WBL was also quite complex, includes natural,

cultural, and strategic planning. In terms of nature and culture, a factor that became the main obstacles was the rain and hot weather in the WBL. Rain cause the whole operation of outdoor game to be stopped considering the safety. This situation could lead to the disappointment of visitors. The hot weather had been also affecting the comfort of visitors. The state of nature and culture was normal thing, but a practical solution was needed by the WBL.

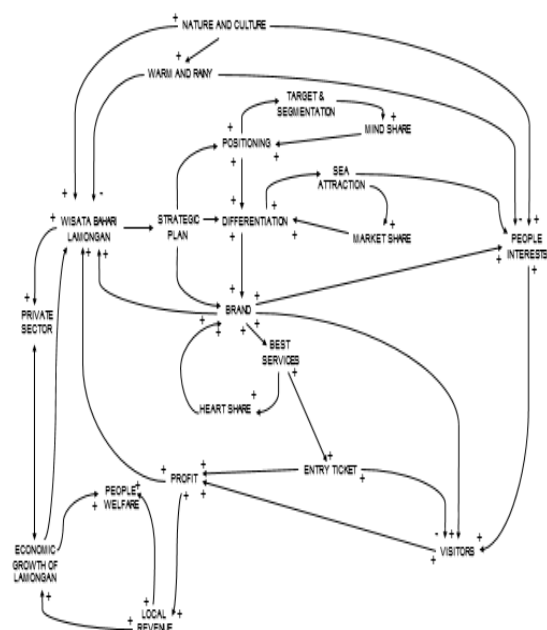


Figure 3. Mapping of Problems' Root

Strategic planning was one of the main aspects to encourage a better development of WBL. Due to the absence of a good strategic plan, WBL had been not create any sustainable development. This argument was in accordance with Wilson [5] that explained the strategic planning as a tool for organizing the existence of the basis projections in the expected future. A strategic plan was a road map to lead an organization from present time and their vision to be in five or ten years later. Thus, an organization needs to have their strategic plan.

In strategic planning, the mission to be achieved in the future should also be clear. Therefore, an urgent mission must have a systematic written plan. Because no systematic mission make the achievement of the goals difficult. In the context of WBL, the weakness was the systematic mission to overcome the problems of declining visitors. Strategic planning was an essential process in preparing to carry out your organization's mission. An effective strategic

planning process provides a framework to make decisions on how to allocate organizational resources, address challenges and take advantage of opportunities that arise along the way.

Furthermore, in this study researcher have been used a model of Strategic Place Triangle (STP), as a comparison between the real world with the model used. We found that *brand* is a key element of the existing problems of strategic planning in WBL. Because the brand has a tremendous influence, then the weak brand will automatically affect the visitor level and people interest towards the WBL itself.

### Determination of Positioning

In the context of WBL development, positioning was determined whether the WBL aspects could have a special place in the perception of the visitors. Furthermore, analysis on the related positioning had been based on six elements (Table 1).

Table 1. Alternatives Strategy of Positioning in WBL

Positioning Element	Strategy
tourism attributes	WBL should always perform maintenance on rides' games and additions biually.
provided benefits	WBL should reinforce the image that WBL rides are safe, comfortable, and fun to spend the holidays.
use of events	WBL should improve the quality of care during holidays, because during the holidays, the visits was high-level.
specific user class	WBL should reinforce the image dedicated for all classes, especially the lower middle class.
direct comparison to competitors	WBL should strengthen the maritime superiority compared to other tourism that have the same concept
different classes of tourism activities	WBL should intensify the promotion of affordable tourism.

WBL was already well positioned. The next activity after determine the positioning is communication to all stakeholders as the marketing target of WBL. Stakeholders comprise of visitors, employees, and shareholders (government and private). The important thing to remember that positioning could also communicate through the offered price of admission, game rides, provided services,

time series differentiation and constructed or developed through the process in delivering value to the visitor.

The statements were relevant to Kotler [4] opined that competitor assessment that holds a company's positioning should be unique and easily differentiated from its competitors. Determination of the strong differentiation give a unique value for WBL compared to other tourism. Thus the competitiveness of WBL had been high. Effective communication in positioning aspects are as follows:

- **Creative;** Creative communicating attempted to steal positioning in the minds and attention of visitors. It must be remembered that WBL compete with hundreds of other tourism to get into the minds of visitors.
- **Simplicity;** Communication in positioning should be done as simple as possible and as clearly as possible thus visitors do not get confused captures the essence of positioning. Internal positioning may be complicated, but towards visitors, WBL should also ask the visitors thought.
- **Own, dominate, protect;** The ultimate goal of positioning was how tourism has one or more words that can be entered into the minds of visitors. When tourism has the words, then the next dominant position should be protected from competitors.
- **Use their own language;** Use simple language to communicate positioning for visitors. It means that WBL was positioned to the village, and then adjust the language with the villagers. Otherwise, if WBL positioned to the top, then use a more elite language.

For WBL, positioning was essentially embed a perception, identity and personality in the minds of visitors. Good positioning of tourism should always be consistent, because the changing created confusion for visitors, thus tourism had been loss of focus. Changes can only be made to suit the needs of visitors and the environment.

The above statements were relevant to Kotler [4] opinion on necessary change in company's positioning relevant to the conditions of business environment. In this case, WBL should manage the market positioning, both segment and target.

#### Strengthen the Differentiation

In the context of WBL, the data showed that the primary differentiation aspect of WBL was it location near the sea; as stated earlier that the

most powerful of differentiation comes from the unique nature of tourism. Thus WBL has had a very strong capital to develop the differentiation factor, i.e. the beauty of the sea. To create this strong differentiation, WBL should concentrate on three very important things:

**Content** (what to offer); The "what" value was WBL offer to visitors. Thus WBL differentiate itself from competitors based on "what" WBL offer to visitors.

**Context** (how to offer); The "way" WBL offer their value to the visitor. WBL must differentiate themselves from competitors based on the "how" WBL offer the value to the visitor.

**Infrastructure** (enabler); The factors that support the implementation of the content and context of differentiation. In short, the infrastructure was all the things that WBL have and can make a difference "what" the WBL offer and "how" WBL offers to visitors.

Kotler [4] also opined that differentiation was defined as designing a set of meaningful differences in a company's offers. This definition was still valid. But we propose to go further, defining differentiation as integrating the content (what to offer), context (how to offer it), and infrastructure (the enabler) of our offers to visitors. Furthermore, this study analyzed the relation to the three key elements that had been strengthen the tourism differentiation (Table 2).

**Table 2.** Analysis to Strengthening Differentiation in WBL

Differentiation Element	Strategy
Content	The beauty of the beach should be highlighted in the aspect of differentiation.
Context	WBL should add game rides that explore the beauty of the sea. E.g. banana boats and canoes. Accelerating the development of sea world will significantly add competitiveness to WBL.
Infrastructure	Package of tours should be integrated with Maharani zoo and cave as actual opportunity. Furthermore, the access road to the WBL should be repaired to improve the quality of comfort and service, especially during the holidays.

WBL has a very valuable capital to determine the differentiation, because WBL located near the sea. The scarcity of the rides game concept near the sea becomes a great opportunity to expand. The rides addition explore the beauty of

the sea to be the main attraction for visitors interest.

The discourse of sea world development in WBL had been become its own power for WBL because sea world that located in the seaside area are rare. So the discourse was believed to be a differentiated factor for the remarkable increase tourists to visit the WBL.

Kotler [4] explained according to the proper integration of differentiation, content, context, and infrastructure was required to ensure the sustainability. These dimensions must compatible and interact to create the unique values to become the basis of the company's competitive strength. Reviewing on this statement, then seaworld could strengthen the differentiation of WBL for creating unique characteristic.

### Brand Building

In the context of WBL, the determination of a true brand with the efforts done by management to provide the best service quality, security, comfort, and satisfaction in playing the rides. But this could not be called a true brand because the facilities are reasonable demands for all visitors.

Brand was used to win the heart share of the visitors. A brand must have a strong character and a promise to visitors to keep. WBL achieve this goal by providing the best quality of service, safety, comfort, cleanliness and game. In addition, the efforts of WBL brand development also need to highlight the beauty aspects of the sea, due to its called as marine tourism. However, so far WBL seems not to have high brand strength, particular-ly due to the realization of sea world.

Hence, brand was generally taken as a company's value indicator. From this statement, sea world could be the brand of WBL as a great value indicator.

Furthermore, in the subsequent analysis, a brand that was built by WBL had been attempted to be corrected with the meaning of the brand itself. A brand was a name, term, sign, symbol, design, or a combination of all of these were intended to recognize the tourism of the manager that was used to distinguish it from other competitors tourism. So the brand can identify the characteristics of tourism built by the manager. Brand was also the promise of tourism operators to consistently deliver conclusions from nature, benefits, and specific services to visitors.

The analysis related to the development of a brand that has been done by the management of WBL as follows (Table 3).

**Table 3.** Analysis of Brand Development in WBL

Brand Element	Strategy
Attributes	WBL should utilize as much as possible the character of the sea to build a strong brand, such as the accelerated development of sea world. Because to date, it has not been consistent and has particularly focus on exploring the beauty of the sea.
Benefits	WBL must keep improving and adding rides games so that visitors feel satisfied.
Values	WBL has a sustainable good level of service quality, cleanliness, safety, and comfort.
Personality	WBL should begin to identify themselves with the characteristic beauty of the sea due to tremendous potential of ocean's characteristic in the future.

There were still weaknesses of WBL for the determination of the brand. So far the brand that was built by the WBL provide good quality of service, security, cleanliness, comfortness, and rides games. These aspects are an obligation for the management and the general rights that acquired by visitors. In fact, WBL has potential branding to be strengthened, i.e. beauty of the sea. WBL was located near the sea, however it has not optimize the potential of existing sea yet. Sea world could actually be a very strong branding material, but so far the discourse could not be realized due to the Annual General Meeting (AGM). From the expertise point of view, with the potential existing sea, WBL could brought branding with the slogan "**The Miracle of Sea**".

Brand's strength was determined by four components. Strong brands were marked by high functional and emotional benefits, and on the low cost and other expenses. Brand was a firm's equity that adds value to the products and at the same time to the investment offers. A strong brand gives visitors more confidence in the level and probability of a desirable return. A strong brand grants the firm some leverage over the perceived value of its investment.

"The Miracle of Sea" was a branding that had been highlight the prime WBL rides of the sea, i.e. The sea world. Thus the dominance of visitors

could include other than children-ranged age. Tourists will also interest in the natural beauty, especially foreign tourists. The benefits of branding development include: easier identification of WBL for seize the interest of visitors; create unique associations and significance that distinguish the WBL from other tourisms; become the sources of competitive advantage of WBL to built an unique image that had been formed in the hearts of visitors; and financial sources turnover for WBL, especially regard to future revenue.

#### **Comparison of Reality and Conceptual Model**

We found a complementary elaboration between the state of reality and the model of Strategic Place Triangle. The reality is empirical situation, while SPT is a viewpoint by system thinking to assess the real world in terms of the conceptual model. The analysis result that sea factor was the key differentiating factor that usable as a tool to establish a strong positioning and differentiation. Sea factor becomes a powerful tool because it derived from nature that could not be imitated by other tourism.

#### **CONCLUSION**

We concluded that the strategic planning of WBL did not completely accordance with the model of Strategic Place Triangle. The weak element on positioning and differentiation lead to the lack of development of brand. However, WBL has developed following details.

- WBL targeted all backgrounds and ages of visitors, yet to date the dominant visitors were children.
- The target market was in Java, especially Central Java and East Java.
- WBL has made the sea as their main differentiated factor thus named as marine tourism.
- WBL build their image by providing best service quality, security, comfort, cleanliness, and best quality rides.

#### **Recommendations**

For current conditions, segmentation of WBL should focus on children to increase the visitors. Segmentation can be improved for all backgrounds and age when there are new attractions such as Sea World. With sea world WBL market also could be expanded not only in Java, but also national.

WBL should emphasize the sea potential as authentic natural element that different to other

tourism. WBL should not only provide best services to build a strong branding. WBL should also highlight the impression of the sea to provide a unique character in the WBL, e.g. The sea world, with the *The Miracle of Sea* slogan was proposed to be the brand.

#### **ACKNOWLEDGEMENTS**

The author regards to Suyanto as operational manager of WBL, Erdiana Renawati as the Head Department of Culture and Tourism in Lamongan, and Benny as HRD staff in WBL for his help in conducting the research.

#### **REFERENCES**

- [1]. United Nations World Tourism Organization (UNWTO). 2011. Policy and practice for global tourism. Madrid, Spain, Calle Capitán Haya.
- [2]. Regional Development Planning Agency (Bappeda). 2008. Preliminary Report: Evaluation and Revision Tourism Development Master Plan (RIPP) of Lamongan Regency. Lamongan Government, Regional Development Planning Agency.
- [3]. Kartajaya, H. and Yuswohadi. 2005. Attracting tourists, traders, investors: marketing strategies in the regional autonomy era. Jakarta. Gramedia Pustaka Utama.
- [4]. Kotler, P. 2004. Attracting investors: a marketing approach to finding funds for your business. Hoboken, New Jersey, John Wiley and Sons, Inc.
- [5]. Wilson, B. 2001. Soft System Methodology. New York, USA, John Wiley & Sons Ltd.

**Culture Development Planning in the Special Region of Yogyakarta  
(Management Planning of Cultural Heritage in Kotagede District based on Community Empowerment  
Conservation Model)**

Eko Suryanti<sup>1,2\*</sup>, Sumartono<sup>3</sup>, Hermawan<sup>3</sup>

<sup>1</sup>Master Program of Public Administration, Faculty of Administrative Sciences, University of Brawijaya, Malang

<sup>2</sup>Department of Regional Development Planning, Yogyakarta

<sup>3</sup>Graduate Program, Faculty of Administrative Sciences, University of Brawijaya, Malang

**Abstract**

The Special Region of Yogyakarta is a cultural rich city with excellent cultural resources. Yogyakarta should manage their assets with long-term planning to keep the sustainability. There is a very unique planning process due to a combination of political, technocratic, participatory, top down and bottom up approaches. This planning process is comprehensive or integrated because its involved many actor from multisectoral, multidisciplinary, multi regulatory, and multi planning documents, etc. Local wisdoms have been coloring the planning documents. This study describe and analyze the cultural development planning in Yogyakarta especially on the Management Planning in Kotagede Cultural Heritage District. We used qualitative descriptive approach methods and Miles and Huberman analysis methods. Participation of community and Non Governmental Organization (NGO) in conservation planning of cultural heritage in this area is very significant in simplify the government task because people have been more literate in planning, have database of cultural assets, and capable of making their own decisions for the future of the region. Participatory rural appraisal (PRA) dan Rapid Rural Appraisal (RRA) were integrated in the planning process of Kotagede Heritage District management, thus it becomes a model of cultural heritage with community empowerment-based conservation.

**Keywords:** culture development planning, comprehensive planning, heritage cultural district, community empowerment-based conservation.

---

**INTRODUCTION**

Recent day's people should be in the circlet of changes in all sectors triggered by globalization, modernization, urbanization, industrialization/capitalization. The changes have brought acculturation and dependence that was not synchronized with the cultural resistance, thus it narrows the national identity [1]. The impact of were eviction, over-functioned, and demolition of historic building in the city and it's very conspicuous in capitalist industrialized countries [2,3].

A strategy for cultural resources conservation was proposed to face the process of changes on cultural sector in the planning documents. It was expected to ensure a comprehensive and coordinated approach from the concept of national policies to the implementation and its follow-up [4]. Culture should be included in the development strategy thus the cultural assets can be saved and used in the regional development. Development that ignores the wisdom of traditions and cultural values of the

local community will face problems, due to the lack of attention to the social-cultural dimension that became public behavior frame of the community [5].

Culture contribute to the achievement of sustainable development with environmental conservation; improving income of community as embodied in the Millenium Development Goals. Culture industry has undoubtedly become a public need and affect the economic growth and quality of life. Cultural industries provide a creative space for the public, to protect and preserve the cultural diversity, employment, and increasing national or regional revenue [6, 7].

Some countries have efforts to protect their old buildings, e.g. Australia, Japan (Kyoto and Nara), Korea, England, France, and Italy. Thus the settings of building permits are very strict and the facade suitability is carefully concerned. On the contrary, this is not strictly applicable in Indonesia [4].

During this time, the culture and civilization problem is less of concern, however, we should consider that no civilization means no nation. As a result, the evolution of society is dominated by external forces instead of internal motivation and spiritual aspirations. It makes communities to be isolated [5]. Sometimes areas of cultural

---

\* Correspondence address:

**Eko Suryanti**

Email : ekosuryanti@yahoo.co.id

Address : Master Program of Public Administration, Faculty  
of Administrative Science, University of Brawijaya,  
Jl. Mayjen Haryono 163 Malang 65145

conservation were neglected due to physical and economic development [8].

Culture-based approach is an oldest approach model and predominantly used in the planning process of nation development. The cultural approach in development should be interpreted not as a means of social engineering, but primarily to find sources of strength in the local culture [5].

Some efforts proposed for recognizing the importance of cultural assets in the Special Region of Yogyakarta. The conservation efforts have been made through the protection and the rescue from destruction, monuments extinction, buildings, also its surroundings and prevent it from further danger. Conservation is also an attempt to maintain the existence of historical and archaeological heritage with its values through management that includes protection, development and utilization. Management is also pursued by the way of planning, implementation and evaluation on an ongoing basis. Protection requires rescue acts, zoning, maintenance and restoration (consolidation, conservation, rehabilitation, reconstruction, renovation) [9,10].

The objectives of the study are : 1) identify and describe the planning process of cultural development especially the management planning of Kotagede cultural heritage district; 2) identify and describe the accommodated aspects in the planning documents; 3) construct the cultural heritage conservation planning model which based on the community empowerment.

#### **Management of Heritage Area**

The management of a heritage area is highly vulnerable and face a severe global scale changes, thus the planning of regional development should be culture-based to be significant in the development of the area. Socio-cultural changes without the support of a superior planning which considering the aspects of internal, social and economic growth leading to greater resilience of culture and prosperity in the area of cultural heritage. The efforts of regional development should be conducted in a more effective and efficient way by combining the regional and sectoral aspects to be successful. Revitalization of cultural heritage area can be pursued in an integrated development model [11,12]. Integrated management of cultural heritage area will prevent intervention inaccuracies [4].

It should be understood by all stakeholders that the cultural management plan is not just the

domain of cultural institution, but also other sectors in a network [3,12]. The government's inability to control the activities performed in different levels of government and private sector will complicate the efforts to conserve the protected areas. Involving the community in the phase of planning, implementation and monitoring will ensure the sustainability of programs and activities that have been planned by the stakeholders because they are entrusted [13,14].

Development planning is influenced by three factors: 1) the ability of local governments to fund the development plan, 2) community involvement in the development process, 3) the commitment on the results of the development and planned development targets [15].

The approach of '*down to earth*' and people as center of development is strongly appropriate to meet the needs of cultural heritage conservation and needs of the political, social and economic development [10].

#### **Cultural Heritage in Yogyakarta**

Integrated planning in the Special Region of Yogyakarta must consider that Yogyakarta is a cultural city with excellent cultural prehistory resources, e.g. Ancient Mataram, Islamic Mataram, Yogyakarta Palace, and contemporary culture, that designed to be the cultural center. Yogyakarta have origin history in Kotagede, as the capital of Islamic Mataram Kingdom for the first time of its establishment. Kotagede is rich with cultural resources such as King Thombs, Mosques, Traditional Houses, Silver Handycraft, Tolerance Alley, Traditional Market, Moat, city wall, city square, granary, etc [16,25].

Depreciation on the cultural heritage of Kotagede Heritage District continues to occur due to various causes, e.g. incomprehension, unwillingness and inability to maintain the inheritance; incorrect maintenance actions, lack of synergy in cross sectoral development, weak law enforcement on natural processes. An example is earthquake in May 27<sup>th</sup>, 2006 that destroyed the heritage building, thus need a long time restoration planning. Moreover, the problem become more complex related to the infrastructure, traffict, handicraft industry, tourism, art, multi-actors, regulation enforcement, relationship scenario, and the shrinkage of tangible and intangible heritage [10,17].

Kotagede is not the only target of government institution. Not all resources have the same level on the understanding and



awareness towards the concept and planning of culture, especially Kotagede. Planning performance is still weak, specifically in the competence of human resources, updating and validity data and information, coordination and synchronization amongs systems, establishment regulations, concepts understanding on conservation and planning, which is often partial or overlapping [18].

### Theory on Regional Planning

The regional planning is a process of determination phases to manage the region's resources for people welfare. It comprises of data and information processing, analysis of existing condition and problems, plan's frame and budgeting, policy, sectoral planning, government function distribution, regional plan, work plan (program, activities, budgeting), stabilization of policy, communication of actors, controlling and evaluation, implementation review, and estimation. Development planning use multiple approaches, i.e. technocratic, participatory, political, top down and bottom-up [19, 20, 21, 22].

Planning is a part of modern public management. There are seven function of public management, i.e. planning, organizing, staffing, directing, coordinating, reporting, and budgeting [23].

### MATERIALS AND METHODS

This research is descriptive qualitative with focus on the planning process of cultural development in Special Region of Yogyakarta, especially management planning of Kotagede cultural heritage district. The aspects were accomodated by the planning documents, the cultural heritage conservation model based on community empowerment. Site of research is in Kotagede Cultural Heritage District, Special Region of Yogyakarta.

### Data Collection and Analysis

Data sourced from the informant, events and documents through in-depth interviews, observation and technical documentation. In-depth interviews were conducted to the planners, implementors, supervisors and evaluators regards to the infrastructure, culture, cross-sectoral aspects. The respondents were come from government, NGO, community, academic, and culturalist. Documentation were taken from some documents regards to Special Region of Yogyakarta and Kotagede, such as regional

planning, regulation, books, letters, reports, etc. We observed some events like festival, discussions, cultural dialogues, data entry to [www.jogjaplan.com](http://www.jogjaplan.com), and priority selecting forum.

Analysis methods used interactive model of Miles and Huberman. The research phases are data collection, data reduction, data presentation, drawing and testing conclusions. Test of data validity using the technique of credibility, transferability, auditability (dipendability), confirmability and triangulation [24].

## RESULTS AND DISCUSSION

### Cultural Resources of Yogyakarta

Special Region of Yogyakarta as a special province in Indonesia is a Kingdom, that Dutch named it as *Vorstenlanden* and Japan called it as *Kooti*. It is located between Mount Merapi and South Coast of Central Java, which is believed to laid on the imaginary axis between Merapi to South Coast. The assosiative cultural landscape of this region were the result of creativity, taste, intention, and the work of the ancestors in prehistoric times, ancient Mataram, Islamic Mataram, Colonial Dutch and contemporary product. Yogyakarta's culture contains a lot of value of struggle/heroism, cultural heritage, leadership/governance, livelihood, language, spatial planning and architecture, art, technology, customs and traditions [25,26,27].

Special Region of Yogyakarta originated from Islamic Mataram with first capital in Kotagede, thus Kotagede has strategic value for realizing the renaissance and functioned as cultural center. Kotagede located at 6 km southeast of the province's capital city, situated between Gajah Wong River and Manggisari River, in two administration planning area, Bantul Regency and Yogyakarta City [16, 28].

Kotagede is not administrative nomenclature, but it is a cultural entity that consisted of five villages, i.e. Purbayan, Prenggan, Rejowinangun, Jagalan and Singosaren. Kotagede designated as a heritage area within the provincial authority by the Governor Decision No. 186/2011, due to the policy gaps between Kota Gede under the Bantul Regency and Yogyakarta City [28].

Kota Gede initial character is the center of governance, economic, social, and religious activities with royal city planning. It was characterized by four unity components, which is identical to *catur gatra tunggal* that normally exist in the centers of Islamic empire in the 16<sup>th</sup> Century. It consisted of Palace, Square, Mosque and Market as relationship symbol with God,

universe, and people of the world [16,17,28]. The following is the cultural resources in Kota Gede today (Table 1 and Fig. 1).

**Table 1.** Cultural Resources Based on Spatial Character

Character	Cultural Resources
Centre of Kingdom and Pilgrimages	Great Mosque, Thomb of the Kings and the Knights, Spring of Selirang, Market, Sites of Dalem, Cantheng Watu, Topo-nymy of square, Spacial Structural of Java City Centre.
City of craftsmens and artisans	Java Traditional Houses with distinctive characteristics and very high density in the core area.
City of Commerce	The houses of the skipper with typical eclectic style that is formed as independent building
City of Religious Reforms	Development centre of religious activities and religious leaders occupancy
City of tourism	Buildings for silver gallery/showroom
Contemporary city	Mass settlement in the suburbs

---

Source : [29]



Documentation of Researches, 2012-2014

**Figure 1. Cultural Resources in Kotagede**

Description:

- a. Alley  
b. Kalang House Harmony  
c. Pacak Suji  
d. Babon Anim

## Planning Process of Culture Development

All sectors of development was directed to regard Special Region of Yogyakarta as cultural center and Yogyakarta Renaissance. Region cultural development planning will contribute to national cultural development. It directed to realize cultured, ethical, and civilized human resources based on Pancasila, competitive nation, as well as beautiful and sustainable Indonesia. This region cultural development planning also contribute to the national development goal, to gain sustainable and

developed communities' income. It is because the cultural heritage related with the creative industry that produce many benefits for the state and nation [30].

Cultural heritage is mentioned in many planning document, because Yogyakarta has five privilege authority in filling the position of Governor and Vice Governor, culture, institution, spatial lay out, and agrarian by Indonesia Law No. 13 /2012.

Ethics movement of cultural heritage conservation initiated by international institutions or personal repercussions towards Indonesia. Thus, established Indonesian cultural heritage institutions such as Jogja Heritage Society, Centre of Heritage Conservation, Cultural Studies Center of Gadjah Mada University, Kanthil Foundation, Centre for Documentation, Joglo Forum, Senthir, JMBN, etc. The foreign organization that supported Yogyakarta Region especially Kotagede are JICA, JRF, ICOMOS, UNESCO, IOM, and World Bank [18].

NGO always move to courage government, donator, and community to participate in the cultural conservation efforts, especially in Yogyakarta and Kotagede. NGO consider cultural assets of Yogyakarta and Kotagede is very unique and rich, consists of cultural heritage, natural heritage, and a blend of natural and cultural heritage.

Cultural Planning process has being led by Cultural Agency supported by Public Work Agency and many stakeholders. Cultural Agency need to gather some stakeholders and shareholders to collect some data and information about their need and interest in the cultural development. The gathering was also beneficial for the synchronization, sharpening, and coordination to avoid overlapping in the development planning.

After this process, Cultural Agency conducted internal coordination with all of the units in the agency to follow up the result of stakeholders and shareholders meeting in cultural planning draft. This draft then integrated with all sectors in region development planning led by the Department of Regional Development Planning. The draft from cultural agency was integrated in the longterm, midterm, and shortterm planning. If the cultural plannings were cross sectoral, it must be handled by the Department of Regional Development Planning, especially for Kotagede privilege planning (culture and spatial).

Five years planning need synchronization between midterm region planning with midterm

cultural agency planning, or strategic planning with national plan. Draft on strategic plan of Cultural Agency is used as an improvement design of Midterm Regional Planning. A short-term planning also synchronized between Local Government Work Plan (*RKPD*) and Cultural Agency Work Plan (*Renja SKPD*), also its contribution to national program.

After processed by the Cultural Agency, the draft integrated in the Department of Regional Development Planning. For example, drafting regional work plan begins from data and information processing, and continued by analysis to a general overview in economic and financial area. Next phase was to evaluate the last year performance, review on national government policy and main ideas of Yogyakarta Region Parliament. Furthermore, they formulate the development problems, proposed the framework of economic and financial policies, priorities, goals and indicative platform, program and its priorities. They also established public consultation forums, alignment the priority of program plan and indicative platform [30].

Plan drafting is a design refinement process of initial draft into work plan draft based on the results of workplan verification on cultural institution. Verification was essential to integrate the programs, activities, performance indicators and indicative funds. The initial planning draft is presented systematically at least as follows:

- 1) introduction
- 2) evaluation on last year planning implementation
- 3) design of the regional economic and funding framework
- 4) priorities and targets
- 5) priority and program planning areas

#### Development Planning Discussion

*Musrenbang* (development planning discussion) is a long enough processes and stages for sharpening, alignment, clarification and agreement on the short planning draft. It was aimed to merge *Musrenbang* and the results of cultural sector forum; integrate the sectors. It also held a joint agreement among sectors' institution in Trilateral Forum in Department of Regional Development Planning regard to the activities sharing.

Formulation of the final draft need the *Musrenbang* work plan agreement. Finally, the Work Plan of Local Government defined by Regulation. This agreement was expected to

keep the alignment between the central and regional planning.

Kotagede Cultural Heritage District community has been literate in planning. Their process was accompanied by Java Reconstruction Fund through several steps as follows (Tabel 2).

**Table 2.** Cultural Heritage Conservation Planning in Kotagede

No.	Phases
1	Understanding the management planning
2	Socialization to the level of district and urban/rural actors
3	Coordination and consultation to the provincial/city/regency
4	Meetings of village consultation and outreach of planning
5	Spatial and other rules assessment
6	Mapping of self help community (physical environment, social, economic, cultural factors)
7	Cultural asset inventory (green maps and block-based map planning)
8	Analysis of core zone
9	Formulate the reconstruction rehab plan and social environmental management plan
10	Selection of priority plan
11	Verification process and eligibility is based on aspects of disaster mitigation, preservation principle, aspects of budgeting, technical, and benefits
12	Legalization of documents (Public, Local Government, BP3 (Heritage Protection Board from Central Government, Institute for Archaeology)

Source: [31]

The stages of each planning process are not much different. They collect data and information from many resources, then analysis the planning area overview, financial management and funding framework. Next, formulate the regional cultural development issues, strategic issues, SWOT analysis, explanation of vision, mission, goals and objectives, strategy and policy direction, indicative program with funding priorities, and establishment of local performance indicators.

The planning process appears to have been applying modern management theory of Gulick [23] called POSDCORB which consisted of planning, organizing, staffing, directing, coordinating, reporting and budgeting. Cultural planning process also through the stages of organize all related stakeholders, distribution of task which appropriate with the regulation. There are meeting between *bottom up* and *top down* direction from upper government and upper regulation. All of the planning process will be reported to the upper manager, government,

and the community. Budgeting allocation also become a main part of planning because cultural development in an area will need great cost.

#### Regulation and Plans on the Cultural Heritage

All of process have been appropriate with Regulation from Ministry of Internal Affair No. 54/2010 as derivative of Laws No. 25/2004 and Government Regulation No. 8/2008. All of the phases also implicate the planning theory of Conyers [22], Djunaedi [19], Nugroho and Wrihatnolo [20], and Tjokroamidjojo [21]. It is included not just the phases, but also what must be accommodated in the document, such as overview of planning area, estimation, program and activities planning.

Cultural development planning had goal to preserve and save all cultural asset, nation competitive, nation identity, and people prosperity based on Law No. 11/2010 about Cultural Heritage. It is also described in the Regional Regulation No. 6/2012 about Cultural Heritage Conservation and Governor Regulation No. 186/2010 about determination of Cultural Heritage District as derivative of the Regional Regulation.

Planning the development of culture in Special Region of Yogyakarta, especially Kotagede combines many affairs, many norms, ideals of conservation and development planning and budgeting. The application of spatial planning was synergy with each other but sometimes not.

Department of Regional Development Planning (*BAPPEDA DIY*) has generated long-term (*RPJPD*), mid-term (*RPJMD*) and short-term (*RKPD*) regional development planning. *BAPPEDA DIY* also produced Action Plan for Stabilization on the Special Region of Yogyakarta as Cultural Center, Action Plan of Heritage District, Action Plan of Integrated Management for Kotagede Cultural Heritage District.

Planning process by Cultural Agency have resulted Cultural Agency Strategic Planning and Short Term Cultural Agency Work Plan. This agency also have produced sub sector planning document, i.e. Grand Strategy of Cultural Resistance, Kotagede Master Plan, Cultural Village Action Plan, etc. The planning of City Government was resulted Action Plan of Heritage City. Publics Works Agency has resulted Building and Environment Lay Out Plan, Detail Engineering Designs, and Drainage Master Plan. Comprehensive Kotagede Planning has produced by all actors based on their function in the management organization.

Community of Kotagede have produced Action Plan of Kotagede Heritage Management and Conservation, Community Settlement Plan by village through participatory rural appraisal (PRA) and rapid rural appraisal (RRA) as mentioned in Sumpeno [11] as approaches on integrated village planning. The integrated planning process in Yogyakarta's culture will form a pattern as follows (Fig. 2).

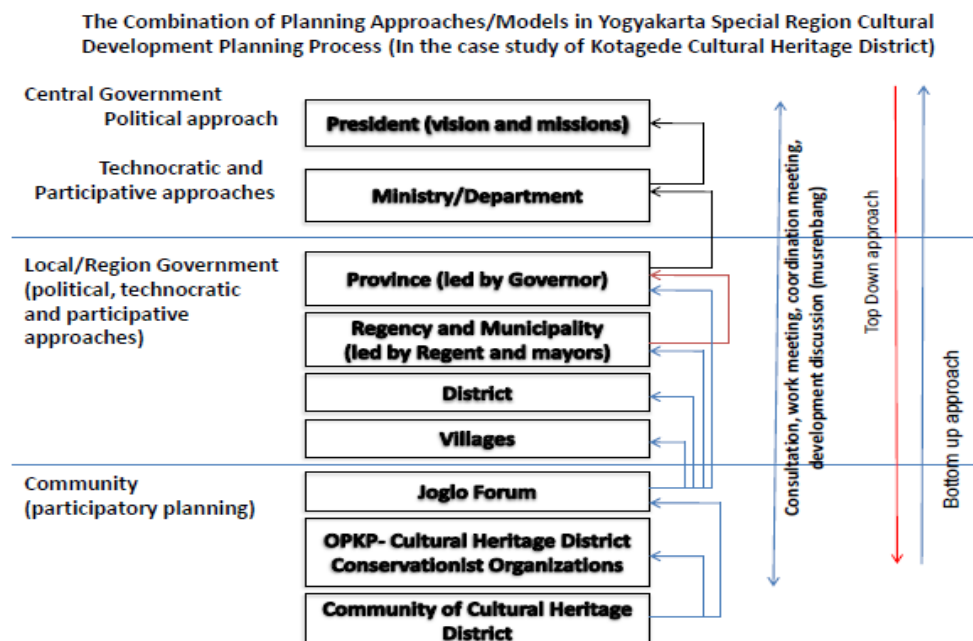


Figure 2. Integrated Development Planning Process in Yogyakarta

### Accomdated Aspects in Planning Documents

Local wisdom of the regional culture is fundamental philosophy for planning and has included in the documents as mentioned follows (Table 3).

**Table 2.** Local Wisdom as Philosophy in Yogyakarta

Local Wisdom	Interpretation
<i>Hamemayu hayuning bawono</i>	effort to save and beautify the world
<i>Gemah ripah loh jinawi</i>	Prosperous society
<i>Sawiji greget sengguh ora mingkuh</i>	spirit to work hard and responsibility
<i>Catur gatra tunggal</i>	relation symbol of King with politics, social, economic, religion
<i>Sangkan Paraning Dumadi</i>	God as the origin of man and their culture
<i>Golong gilig</i>	merging of the ruler and the people for development
<i>Musyawarah/Rembugan</i>	a form of discussion based on family spirit
<i>Gotong Royong</i>	working something together
<i>Tepa selira</i>	tolerant

The aspects that accomdated in some cultural documents in Yogyakarta and Kotagede are normative aspect, synchronization among documents, general conditions, the problems of conservation and management, integration with spatial regulation, vision, mision, goals, strategy, targets, program and activities plan, budgeting planning, implementator scenario, and agenda of policy. This aspects has schemed by Conyers [22], Nugroho and Wrihatnolo [20], Tjokroamidjojo [21].

Java Reconstruction Fund facilitated Kotagede planning document. They accomdated the documents related to disaster management, investation program plan, women empowerment, heritage conservation, infrastructure, environment, education and poverty.

Integrated Revitalization Masterplan of Kotagede Heritage Dicitrict consist of review on juridical aspect, condition of Kotagede, institution plan, vision, mision, strategy, policy, and community empowerment in Kotagede conservation. The policy related to cultural heritage conservation, city's characters strengthening, tourism, infrastructure, institutional, traffict management, handycraft industry, and art performance. Integrated networks by sectors, department, agencies, units, actors, and resources of funding also has recommended by Sumpeno [11] and Branch [12].

Resources of the funding come from central and local government, and NGO, e.g. JRF, GMU, JICA, and World Bank. Although the funding for cultural development is overflow, it doesn't made cultural activities in Kotagede and the entire area in this region can be planned. Especially after Law No. 13/2012 established. The investors fears about the law, which inhibit the planning.

Programs of cultural planning which referred to the existed law are Culture Values Development, Culture Richness Management, Culture Diversity Management, Cooperation in Culture Management, Culture Facilities and Infrastructure improvement. Many activities in each program is *bottom up* proposals or *top down* directions.

Haris [15] explained that development planning is influenced by the ability of local government funding, community involvement, and the commitment to the plannings. For this cases, heritage conservation will need great cost, and also will need strong leaderships of street civil servants, good governance, independent soul, skill, and dare to risk. Planning sustainability need community participation and consistents with commitments in plannings.

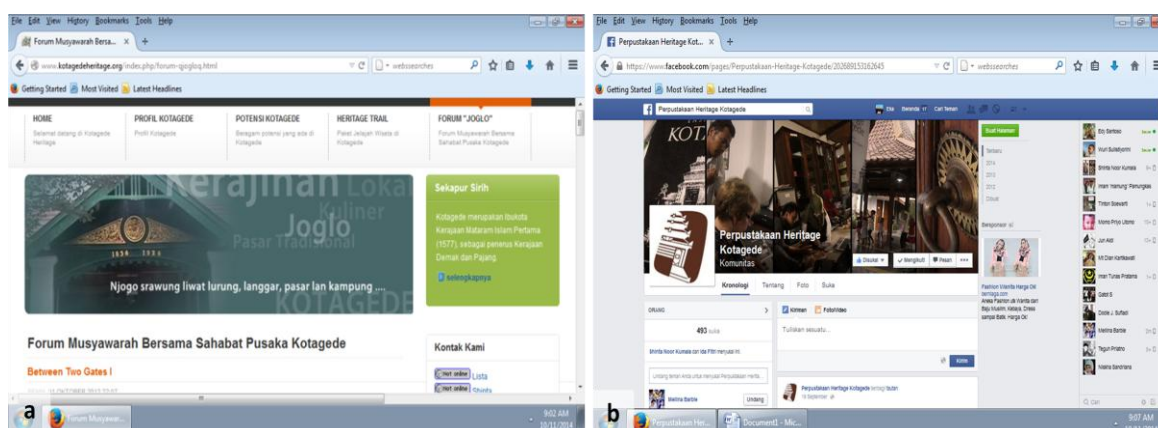
### Heritage Conservation based on Community Empowerment

Kotagede Community is a conservation model that has been ready to manage and preserve their district because they have data and information, some planning, and community institutions. The community participates in the phase of planning, implementation and controll-ing. They consult to the local government (planning dept., cultural agency), central govern-ment (heritage preservation agency, archeology agency, and ministry of public work) to integrate the development and conservation.

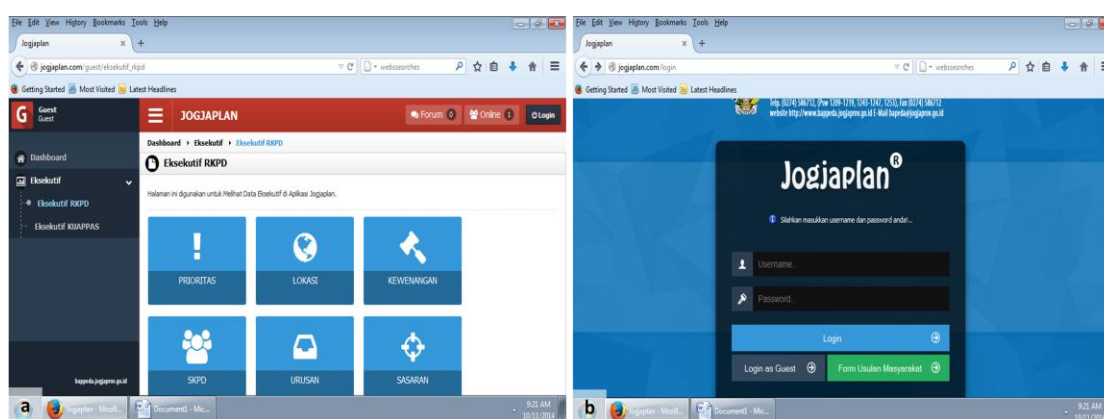
Some NGO like JRF, JHS, CHC and its networks did facilitate in donating, data collecting, planning, institutional strengthening, and expanding of networks after earthquake on May 27<sup>th</sup>, 2006 in Kotagede.

Currently, Kotagede community has some web or online information regard to their cultural heritage, i.e. [www.kotagedeheritage.org](http://www.kotagedeheritage.org), <http://kotagedelib.com>, <https://www.facebook.com/Perpustakaan-Heritage-Kotagede> that created privately or collective. Kotagede also has library that useful for planning and research, and people will get information about this library by accessing the website (Fig. 3).





**Figure 3.** e-cultural heritage conservation of Kotagede  
Description: a. web of Kotagede Heritage; b. Facebook page of Kotagede Heritage Library.



**Figure 4.** e-participatory planning in regular and special authority of regional development planning  
Description: a. web of jogjaplan; b. log in page for jogjaplan

Planning process in this district also group-based in each villages, as like Abilawa, Mandaraka, Singosari, Binangun, Purbatilas, BKM and Joglo Forum. However, before the earthquake, Kotagede still have many conservation organizations such as Kanthil Foundation, Pusdok, Living Museum and OPKP Kotagede. At the time, fragmentation of the community becomes a threat for planning.

The government of Yogyakarta Special Region provides opportunity for local community to give their input into the planning process by accessing the [www.jogjaplan.com](http://www.jogjaplan.com) (Fig. 4). Unfortunately, not all people in Yogyakarta including Kotagede can access and use the internet technology, thus the advantage of the website is limited to certain internet aware community.

## CONCLUSION

Development planning regard to the cultural heritage of Yogyakarta integrate the aspect of political, technocratic, participative, top down and bottom up approach.

Community facilitated by government and NGO for participating in the cultural planning of Yogyakarta. Available websites for the planning are e-participatory planning, e-monitoring and e-evaluation.

## ACKNOWLEDGEMENTS

Thank you for Dean and Head of Study Program, Department of National Development Planning, Department of Regional Development Planning, Cultural Agency, Joglo Forum, Java Reconstruction Fund, and Kotagede community.

## REFERENCES

- [1]. Adrisijanti, I. 2006. Islam as an Indonesian Cultural Roots. Mimeo. Coaching for Special Region of Yogyakarta, Central and East Java Regional History. BPSNT of Yogyakarta. 11-14 Juli 2006, 1 and 8-9.
- [2]. Bandarin, F. and R. V. Oers. 2012. Historic urban landscape. Wiley Blackwell Publishing. West Sussex, 5-17.
- [3]. Harrison, R. 2013. Heritage, critical approach. Routledge. New York, 27 and 31.

- [4]. Sudikno, A. 2007. Preservation of ancient buildings as assets of nation cultural history. Mimeo. Inauguration Speech of Professor Position in History and Architecture Preservation Field. Faculty of Engineering, University of Brawijaya, Malang. 3<sup>rd</sup> December 2007, 6-12.
- [5]. Buwono X, S. S. H. 2007. Reassembling our Indonesian. Gramedia Pustaka Utama. Yogyakarta, 4-28.
- [6]. Bandarin, F., J. Hosagrahar, and F. S. Albernaz. 2011. Why development needs culture. *Journal of Cultural Heritage Management and Sustainable Development* 1(1), 15-25.
- [7]. Cano, G. A., A. Garzon and G. Poussin (Eds). 2005. Cultural, trade and globalization. Kanisius Publisher. Yogyakarta, 15-20.
- [8]. Nayati, W., R. B. Santoso, Y. S. Suwito, K. Jatiningrat. 2006. Action plan of Yogyakarta Special Region stabilization as famous cultural center. Center of Culture Study, Gadjah Mada University and Department of Regional Development Planning Yogyakarta, Yogyakarta, 1.
- [9]. Budiardjo, E. (Ed). 1997. Cultural heritage in Indonesia. Gadjah Mada University Press. Yogyakarta, 8-9.
- [10]. Kidokoro, T., J. Okata, S. Matsumura, N. Shima (Eds). 2008. Vulnerable cities, realities, innovations, and strategies. Springer. Japan, 241-253.
- [11]. Sumpeno, W. 2011. Integrated Village Planning. Read. Banda Aceh, 49.
- [12]. Branch, M. 1995. Comprehensive city planning. Bambang, H. W. (Transl.) Gadjah Mada University Press. Yogyakarta, 90.
- [13]. Muliono, M., G. Limberg, P. Minnigh, A. Mulyana, Y. Indriatmoko, N. A. Utomo, Saparuddin, Hamzah, R. Iwan, and E. Purwanto. 2010. Hacking the deadlock: concept and guide of special zone development for National Park in Indonesia. CIFOR. Bogor, 7.
- [14]. Teutonico, J. M. and P. Gaetano (Eds). 2002. Proceedings of Management Planning for Archaeological Sites. The Getty Conservation Institute. Los Angeles, 25.
- [15]. Haris, A. 2003. The sweat disbursement and development tap. Pustaka Pelajar. Yogyakarta, 139.
- [16]. Adrisijanti, I. 2005. Kotagede: An archaeological perspective of a capital city in Java in the 17<sup>th</sup> century. *Humaniora* 17 (2), 125-134.
- [17]. World Monument Fund. 2008. Kotagede Heritage District, 2008 world monument watch list of 100 most endangered sites. <http://www.wmf.org>. Accessed July 14<sup>th</sup>, 2014.
- [18]. Java Reconstruction Fund. 2009. Proceeding of stakeholders meeting for Kotagede preservation and management program synchronization. Java Reconstruction Fund. Kotagede, Yogyakarta.
- [19]. Djunaedi, A. 2012. City and regional planning process. Gadjah Mada University Press. Yogyakarta.
- [20]. Nugroho, R. and R. R. Wrihatnolo. 2011. Development planning management. PT Elex Media Komputindo, Gramedia. Jakarta.
- [21]. Tjokroamidjojo, B. 1995. Development Planning. PT Toko Gunung Agung. Jakarta.
- [22]. Conyers, D. 1991. An introduction to social planning in the third world. Susetiawan (Transl). Gadjah Mada University Press. Yogyakarta.
- [23]. Frederickson, G., K. B. Smith, C. W. Larimer, and M. J. Licari. 2012. The public administration theory primer. Westview Press. Colorado, 57 and 102.
- [24]. Miles, M. B. and Huberman, M. 1992. Qualitative Data Analysis. Rohidi, T. R. (Transl). UI Press. Jakarta.
- [25]. Kutoyo, M. S. 1977. History of Yogyakarta Special Region. Cultural Values Study and Development Project. Central Directorate of History and Traditional Values. Jakarta.
- [26]. Regional Regulation of Yogyakarta Special Region No. 4 of 2011 on Yogyakarta Values. Yogyakarta, 4.
- [27]. Regional Regulation of Yogyakarta Special Region No. 6 of 2012 on Cultural Heritage Conservation.
- [28]. Java Reconstruction Fund and Joglo Forum. 2011. Kotagede Heritage District management and conservation plan. Yogyakarta, 1-1.
- [29]. Cultural Agency. 2010. Integrated revitalization master plan of Kotagede, Yogyakarta, 1-7.
- [30]. Government of Yogyakarta Special Region. Local Government Work Plan of 2014. 2014. Regional Government of Yogyakarta Special Region. Yogyakarta, 13-14.
- [31]. Kotagede Community. 2008. Planning of Settlement Structuring-Heritage Program, Yogyakarta.

## MANUSCRIPT SUBMISSION

### FOCUS AND SCOPE

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

### PEER REVIEW PROCESS

Publication of articles by JITODE is dependent primarily on their validity and coherence, as judged by peer reviewers, who are also asked whether the writing is comprehensible and how interesting they consider the article to be. All submitted manuscripts are read by the editorial staff and only those articles that seem most likely to meet our editorial criteria are sent for formal review. All forms of published correction may also be peer-reviewed at the discretion of the editors. Reviewer selection is critical to the publication process, and we base our choice on many factors, including expertise, reputation, and specific recommendations. The editors then make a decision based on the reviewers' advice, from among several possibilities:

*Accepted*, with or without editorial revisions  
Invite the authors to revise their manuscript to address specific concerns before a final decision

*Rejected*, but indicate to the authors that further work might justify a resubmission

*Rejected outright*, typically on grounds of specialist interest, lack of novelty, insufficient conceptual advance or major technical and/or interpretational problems

### PUBLICATION FREQUENCY

JITODE publish 3 Issues per year.

### OPEN ACCESS POLICY

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

### COPYRIGHT NOTICE

Authors who publish with this journal agree to the following terms:

Authors retain copyright and grant the journal right of first publication with the work simultaneously licensed under a Creative Commons Attribution License that allows others to share the work with an acknowledgement of the work's authorship and initial publication in this journal.

Authors are able to enter into separate, additional contractual arrangements for the non-exclusive distribution of the journal's published version of the work (e.g., post it to an institutional repository or publish it in a book), with an acknowledgement of its initial publication in this journal.

Authors are permitted and encouraged to post their work online (e.g., in institutional repositories or on their website) prior to and during the submission process, as it can lead to productive exchanges, as well as earlier and greater citation of published work (The Effect of Open Access).

### PRIVACY STATEMENT

The names and email addresses entered in this journal site will be used exclusively for the stated purposes of this journal and will not be made available for any other purpose or to any other party.





**Title Typed in Bold, Capitalize each First Letter of Each Word, Except  
Conjunctive, *Scientific name* should not be Abbreviated  
(Calibri 14 Bold Center, should not exceed 12 words, except conjunctive)**

First Author<sup>1\*</sup>, Second Author<sup>2</sup>, Third Author<sup>3</sup> (Calibri 12 Center, without title)

<sup>1</sup>First Author Affiliation, Correspondence author should be indicated by \* symbol (Calibri 9 Center)

<sup>2</sup>Department of Biology, Faculty of Mathematics and Natural Sciences, University of Brawijaya, Malang, Indonesia

<sup>3</sup>Laboratorium of Physiology, Faculty of Medicine, University of Brawijaya, Malang, Indonesia

**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)

**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 should 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 saxatilis* 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<sup>-1</sup>, instead of g/l. The unit spaced after the numbers, except percentage [4]. Example: 25 g l<sup>-1</sup>, instead of 25gl<sup>-1</sup>; 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

---

Correspondence address: (Calibri 8 Bold, Left)

**Full name of correspondence author**

Email : sapto@jurnal.ub.ac.id

Address : affiliation address include post code

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 should 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		
5		

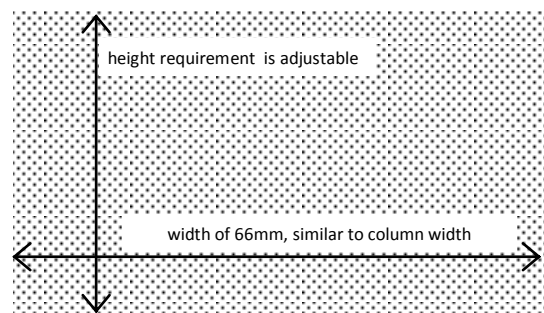
Sources: Journal of PPSUB (Calibri 8.5 Left)

### Figures

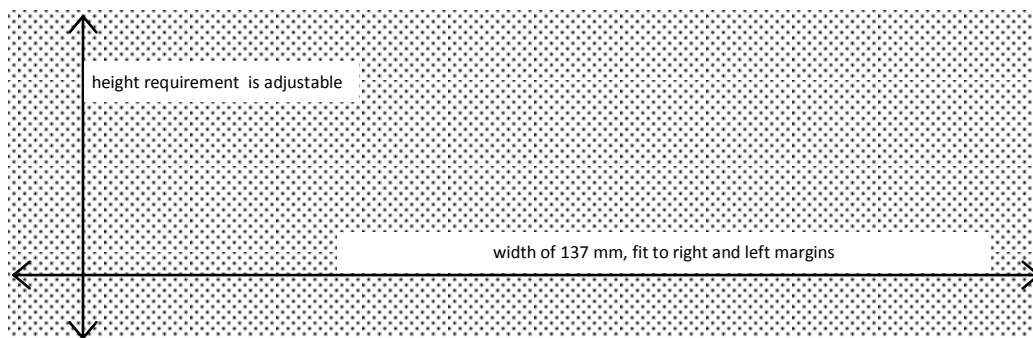
Figures should be in high resolution and well contrast in JPEG or PDF with the following conditions:

- 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].
- [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- $\alpha$  in Mice (*Mus musculus* BALB-C). Thesis. Department of Biology. University of Brawijaya. Malang. (Thesis)

## 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 recognition of target cells by CD8<sup>+</sup>CD122<sup>+</sup> regulatory T cells. *Journal Immunology*. 124. 1:121-128. (Article in Journal)