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## Local Wisdom for Sustainable Development of Rural Tourism, Case on Kalibiru and Lopati Village, Province of Daerah Istimewa Yogyakarta

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### Abstract

Tourist village in the province of Daerah Istimewa Yogyakarta is growing rapidly. This is occurred because tourists began visiting places in small groups that focused on the experience of nature and culture. The development of the tourist village is in line with the demands of the rural as a tourist destination. Sustainability of a tourist village begins with the motivation to develop the village while preserving environmental sustainability. This research is conducted in Kalibiru and Lopati tourist village to figure out community awareness' driving factor about local wisdom upheld to maintain the rural environment which is the trademark of the tourist village. This study uses the participation of community to obtain data based on the community motivation. Observations by mapping and interviews were conducted to measure aspects of environmental conservation. The results are expected to become a model of conservation of nature-based tourism village by citizen participation therefore can be implemented for the development of rural tourism in the future.

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*Keywords:* tourist village; local wisdom; conservation; community participation, rural tourism.

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## 1. Introduction

Ecotourism is a new type of tourism that is being developed in Indonesia, despite of introduced internationally since October 1999 by the World Tourism Organization (WTO), (Gunawan, 1997), and has issued “Global Code of Ethics for Tourism” as encouragement for the countries in the world to develop sustainable tourism. Yogyakarta as a tourism city also affected by the new trend. Activity-based tourism or ecotourism and this culture began to emerge in Yogyakarta. Data for 2012 from tourism department states that the number reached 97 tourist villages (Department of Culture and Tourism Statistics Tourism DIY 2012). The location of this research are two villages located in the DI Yogyakarta, Kalibiru and Lopati. They were chosen in consideration that both have their own unique hallmark of natural objects which resides in Kalibiru village and rural household industry in Lopati. Map of the location is shown in the following figure :

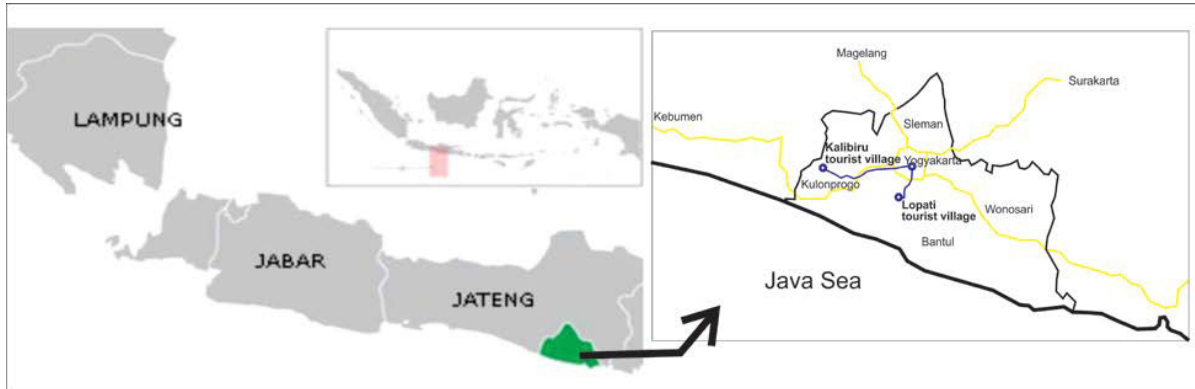


Fig. 1. Location of Kalibiru Village and Lopati Village. (Research documentation. 2015)

Kalibiru tourist village, Hargowilis, Kokap, Kulonprogo is a tourist village located in Kulon Progo District and has a unique natural object. Kalibiru Village has a beautiful natural scenery objects with a view of Sermo Reservoirs, and has a variety of rare fauna such as the Javanese Eagle, partridge, porcupine, wild boar, and even Java Tiger and Tiger Beetle. Access to the village is a bit difficult because it (is at) altitude of 450 asl – or above sea level. The village also has achieved the 1<sup>st</sup> rank for tourist villages competition in the province of DIY and got 4<sup>th</sup> rank of national tourist village competition in 2014.

Lopati tourist village is located in the Hamlet Lopati, Village of Trimurti, Srandakan, Bantul which is about 25 km to the southwest of Yogyakarta, near Pandansimo Beach. The object of this village is quite different, because it has various kinds of tours in culinary and craft. The village is famous for its culinary like local noodles called ”mie letek”, bakpia, crackers milk, tofu, geplak, lima bean and soybean tempeh, “kokis” a traditional cake, salted eggs and herbs as well as the manufacture of fresh milk. The village is also known for its unique handicrafts such as batik bamboo, crafts from bamboo, batik, kronjot / krongho, chicken coops, batik, arang bathok and furniture. Traditional entertainment and performances to attract tourists also been developed, this village has a package of art and culture such as Reok, jatilan children, kerawitan and sholawatan. The village also has homestay facilities that provide 17 houses with 21 rooms.

Along with the goal to improve the local economy, then it will be followed by various forms of modernization such as the expansion of the built environment, increased number of rooms used as homestay, and moreover there will be an alteration of room quality from its shape, structure, and meaning of space according to the the public perception. The perception of tourists who are interested in traveling in the countryside may be different from the perception of the local communities. Based on Purwaningsih, 2014, it shows that the previous research in empowering communities to preserve the environment in a tourist village is focused to the planning and started with the motivation to develop the village, but on furthermore it must have also the motivation to maintain the sustainability of the village. In the previous research in Pentingsari Village, Sleman, Yogyakarta, actually the original culture in the village becomes the main attraction (Pudianti, 2013), while community, on its own initiative

through group change their villages according to their own perceptions. Clearly that rural communities need to be empowered intensively in order to preserve their rural environment hence it remains attractive for tourists yet economically developed.

Villages is built environment that serves as a cultural unity containing elements of human, nature and physical culture manifestation including architecture, therefore the comprehension should follow the complexity of those elements. Natural language understanding, human and architecture as one of the ways to explore the potential on indigeneous knowledge and as a form of local wisdom that has proven capable of maintaining the balance of the community life in harmony, long-lasting and sustainable. As an a concept with various forms of spatial implementation, local wisdom of a community will continue to grow in the awareness of society. (Wikantiyoso, 2009). This affects the public perception as the subject to maintain their environment which acts as an object. Environment has a unique characteristics that can be understood by the local community. Finally, this uniqueness is translated into a natural language that can be understood by humans to continually maintained hence human communication as actors will not deviate from the capacity of the environment as a vessel. This understanding of the process is able to see the holistic context of local wisdom, therefore the local unique, thoughtful, full of wisdom and good-value can be attached and followed by the public (Antariksa, 2009).

Wisdom etymologically means a person's ability to use his mind and sense to respond to an occurrence, object or situation. While local shows space of interaction where the event or situation occurred. Local wisdom is the positive behavior of man when interacting with nature and its local surroundings which is originated from their value of religious customs, advice of the ancestors or local culture, naturally built within a community to adapt to its local surroundings. General behavior and common applications on the community are inherited and developed to become values which are held rigidly called culture. Another definition of local wisdom is the human effort by utilizing their cognitive power to act and behave toward an object or circumstance which occurred in certain space.

In general, local wisdom emerges through internal process and passed for a long time as a result of the interaction between humans and their environment. This long process of evolution will lead to the emergence of a value system that crystallized in the form of common law, belief and local culture. Thereby, substantially local wisdom is the norm practiced in a society which is faithfully believed and become a reference in their daily life. Therefore, it is reasonable if Geertz (1973) says that local knowledge is an entity that is crucial for human dignity in the community. (Ernawi, 2009). Participatory approach or community based development is one of strategies that can bridge the development interests which emphasize in paradigm of economic based with sustainable development (socio – ecological based). (Wikantiyoso, 2009).

Rural areas as human built environment, is a form order of life which contains the physical elements of spatial as an activity space and non-physical elements in form of values as well as the accumulation of community activities. According to Bintarto (1977), there are three elements which form a rural ie : region / territory, residents and life system. The dynamic development of rural communities will be reflected in the physical formation and the behavior of its social culture. Thus discussing the development of the rural area can not be separated from the historical perspective of the village and its aspects, p(hysical and non-physical) behind them. Morphology of village physical uniqueness in the process of development is an important thing to be observed as a whole in community life. The comprehension of physical, topographical, geographical, physical structure environment, governance in landscape can not be separated by knowledge of non-physical aspects (community activities, philosophical values, social, cultural and political). (Ernawi, 2009)

One of the basic philosophy filled with local knowledge of Mataram Empire as a forerunner to the community life of Yogyakarta is “hamemayu hayuning bawana”. Literally, this philosophy has meaning of “creating a beautiful world”. This can also be interpreted as eco-friendly development, which prioritize in conservation of natural and cultural assets. This is necessary, because if local development could not be managed, then there would be environmental damage which threaten life on Earth, including humans. Therefore, eco-friendly development also aims to save the environment from destruction. “Hamemayu” can be interpreted as a protective shield from everything that could disturb the safety or raise inconvenience as a result of everything. While the protected, or “hayuning bawono”, is “rahayuning jagad” or safety and preservation of the whole world. In this case, on the one hand it reflects an understanding that there is a threat to the safety or preservation of the world and on the other hand it also states their commitment to rescue and protect them (Wagiran, 2012)

Under those conditions, then the problem discussed in this paper is the local knowledge which become the basis of preservation in rural tourism development. Results of this paper is a form of the utilization of local wisdom that characterizes the tourist village to be sustainable with the environment. This result can be used for the development of rural tourism in Indonesia with the basis of local wisdom preservation.

**2. Participation Research Action as main method**

This type of research is Participatory Action Research with the perspective of environmental conservation. This type of research emphasizes the involvement of the target as the active subject, making their experience as an integral part in the study, find the problem, and is directed to solving the problem by targeting the empowerment context of research subjects. To accomplish this, research and action activities were merged into one and conducted continually and complement each other to find solutions on the research subject. Therefore, participatory action research method is identically related with empowerment research (Mikkelsen, 2001). To achieve the research objectives, the use of participatory action research methods as focus needs to be supported by other methods such as observation, in depth interview, focus group discussion (FGD).

Discussion process is conducted by the research process which focused on efforts to find elements of local wisdom as one of the important things to develop the sustainability of the tourist village. Schematically, the research mindset can be illustrated by the following scheme below.

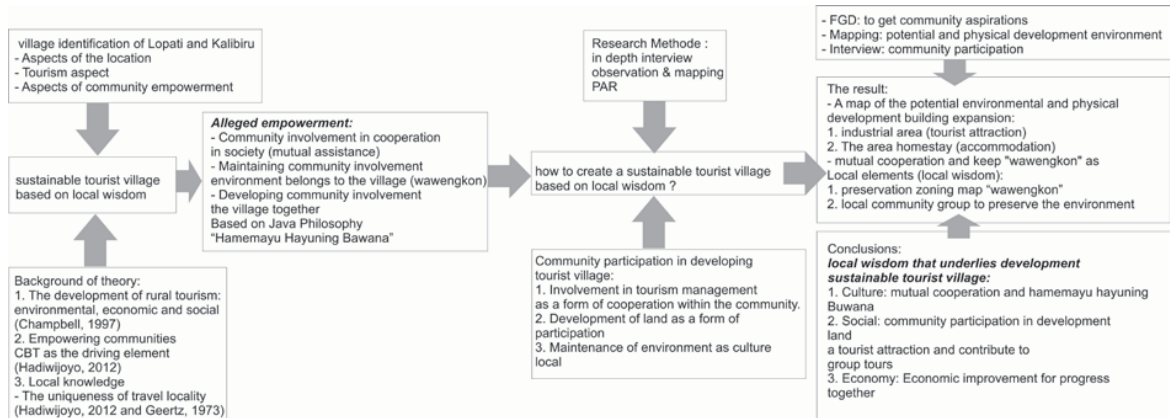


Fig. 2. Research schematic diagram

**3. Location, description for the rural tourism village**

The natural attractions and tourist villages of Kalibiru is a tourist place located at Sermo Reservoir, which is the only reservoir in Yogyakarta. Natural attractions and tourist village of Kalibiru is a combination of the nature tourism concept with the village tourism concept. In the beginning, there was natural attractions only and then it grew along with increasing visitors. This development is important, considering the number of requests and demands from several other tourist parties, particularly in fulfilling the needs of visitors about facilities which offer local culture and local life since they are not yet found from Natural Tourism.

Lopati Tourist Village has an area of 36 acres which is a hamlet consisting of three (3) smaller territories. Such as in areas close to the coast in general, Lopati Village has a tropical climate with low humidity and mixed sand soil resulted on the bad development of agricultural sector, hence local residents' livelihood are craft and trade.

#### 4. Rural Tourism, as a tourist attraction in the village

Natural attractions and tourist village in Kalibiru located in the same region, that is in the area of state forest. Activities of tourist village are located in the nature tourist area in which there are already six Cottage Inn made of wood with a bathroom inside. The lodge can accommodate up to ten people per cottage. This natural tourism area has two pavilion with a large yard, musholla, stalls owned by residents, office and guardhouse owned by the management. In general, overview of attraction objects in Kalibiru village can be seen in Figure 2 below.



Fig. 3. Attractions as the natural landscape backdrop forest with Sermo reservoir, the uniqueness in Kalibiru (a) tree viewing post and (b) Natural landscape hillside (Research documentation. 2015)

In general, tourist attractions in Lopati Village is crafts and household industries, therefore by type (profile tourist village Lopati, 2014) they are divided into :

- Attractions of handicraft industry: bamboo batik, “krono” a bamboo basket , chicken coops, bribig, traditional furniture, and traditional hat called “caping”.
- Attractions of the culinary industry: “bakpia” a traditional mung bean cake , “geplak” a traditional sweet coconut snack, tempeh, tofu, traditional noodle call “ mie letek”, salted eggs, bread and cakes, and herbs.
- Cultural attractions: traditional performance like “jathilan and reyog”, traditional religious performance “slawatan” and shadow puppets.

Community involvement in the development of tourist attractions are seen in their participation to develop their business to be part of a tour package. Overview of land development and housing as shown in the following figure.



Fig. 4. Tourist attractions handicrafts (a) “krono” bamboo basket (b) industry of bakpia (c) batik bamboo handycraft and (d) “tempeh” made from soybean. (Research documentation. 2015)

#### 5. Community participation for rural tourism development through local wisdom

The existence of natural attractions and tourist villages in Kalibiru can not be separated from the existence of a community forest managed by community forest farmer groups (KTHKm) “Mandiri” in the long process. Kalibiru

village changes into natural attractions and then developed with (/become) the tourist village. Previously, this started from the willingness of people to make a good use of the forest without destroying it by doing illegal logging. Peak of forest destruction occurred between 1997-2000. It happened at global crisis when there is no or lack of government regulatory supervision on forest resources. Then there are a lot of irresponsible people took advantage of the situation by cutting down trees and leaving only a small part of the trees. (*interview with Mr. Marsono, leaders of farmer groups HKM Mandiri, in February 2015*)

The status of Protection Forest which prohibits cutting down trees is causing the local communities to creatively take initiative in using the forest carefully by not damaging the forest. This triggered the idea of forest utilization as environmental services which eventually became the priority of “HKM Mandiri” farmer group. On 14<sup>th</sup> February 2008, Kalibiru natural attraction was officially managed by Farmers Group of HKM Mandiri.

Village since long ago was not simply understood as the village administration, but as countries which also includes area, society and is acknowledged by outsiders, in this case could be the country. The village usually has “wewengkon” or territories belonging to the village that can be managed well as a source of economic income, conservation and 'sovereignty'. “Wewengkon” is a term to express either forest or land belonging to the village - or often called “ulayat” land or indigenous land located outside Java. (Hardiyanto, 2003). Temporary permit to manage the community forest has been handed in and it has succeeded in relieving the community. Society would belong to the forest more by involving them in maintaining and managing the forest. Moreover, this permit also interpreted as the beginning to prove what has been already discussed before, that it would be better if the local people is trusted to manage the forest. The responsibility is not easy, especially for people who are socialists and practically depended only on their social senses i.e. togetherness, similar spirit and fortune as the one who would first suffer the consequences of forest destruction. Material and physical assets, such as the establishment of a legal institution, seeds manufacturing and purchasing, land physical processing, capacity upgrading, while all done by mutual aid and shared equally together, it still need to be facilitated by other parties especially the government. In consequence, now there are no one be able to force the people to follow a project or program in their own managed areas without having to negotiate with them. (*interviews with leaders of the group HKM Tani Mandiri, Mr Sumardi, 2015*).

Community participation is shown on autonomous tourism management in Kalibiru. The existence of tourism village group that coordinated by its own inhabitants often led to the successful preservation of the environment. The participation also shown in form of providing facilities and infrastructure. Communities are doing coordination related with the environment security by conducting surveillance in a given area. Officers who are members of the “marshall” (term to guide and field supervisors) are carrying security shifts to monitor forest areas in order to guard its existence. Picture of area division, coordination, and visitor accessibility can be seen on Figure 5 below.

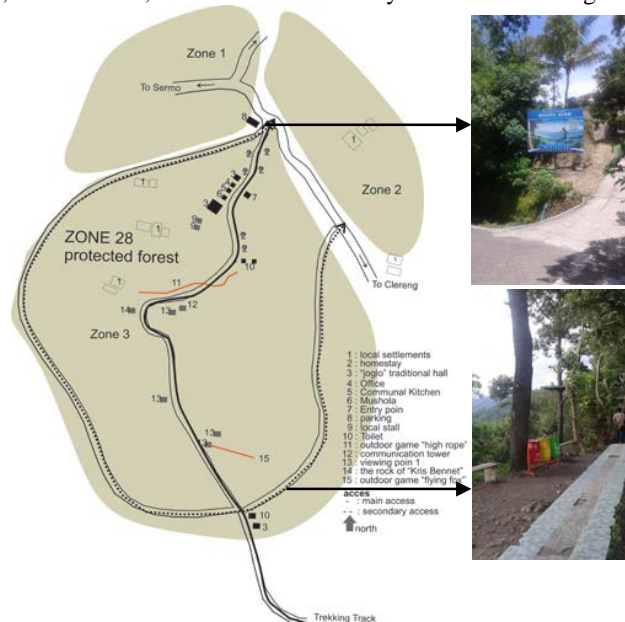


Fig. 5. Map of the tourist track and zoning control Kalibiru tourist village (Research documentation. 2015)

Form of community participation can also be seen from their initiative in designing and developing the tourist areas. Communities also conduct land management in mutual aid such as: strengthening the terracing with stone, planting grass, and fodderbank; division and arrangement of land boundary that become part of the group; as well as constructing inspection track (footpath as shown in figure 5) some of which have been developed into a natural attraction tracks. (Taufiqurrohman, 2014)

**6. Development of occupancy land as a form of community participation**

Lopati Village's community participation on tourism activity is shown in the aspect of tourist village management by 20 persons participating as a tourist village committee. While from the aspect of industrial development, there are 17 types of businesses with 47 entrepreneurs, and 34 persons who participated in providing homestays for tourists. Most of this homestay owners have other business and only two of them do not have any business. In general, the role of villagers in Lopati is shown in the following scheme.

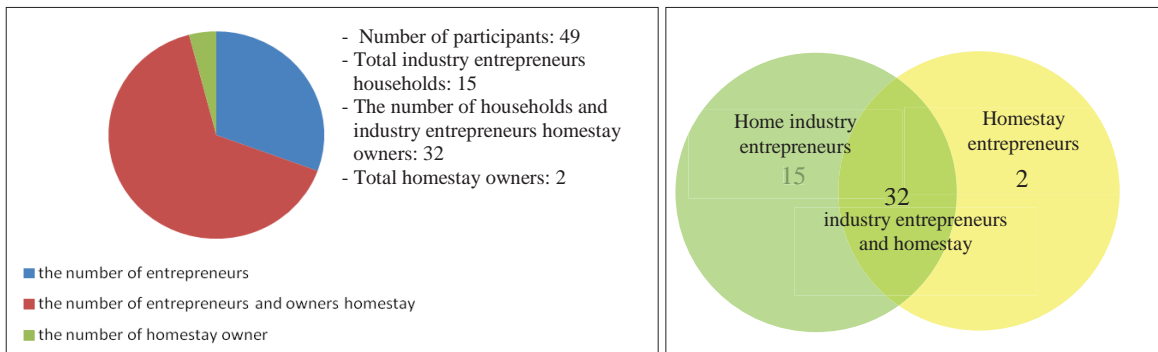


Fig. 6. The number of entrepreneurs from household handicrafts industry and homestay as a description community participation (a) chart entrepreneurs and owner of the homestay (b) chart of the relationship entrepreneurs and owner of the homestay.

Forms of community involvement in the development of rural tourism can be seen in the physical identification of the following dwelling.

Table 1. Classification of samples households Industry and Homestay.

Owner's name	Type of Houses Industry	Location
Ibu Sri Indarti	Milk industry	Rt 92
Pak Imam Muhadi	Farming	Rt 92
Pak Japon	"bakpia" industry	Rt 92
Pak Citosikin	"kokis" industry	Rt 93
Ibu Sutiye	"Peyek" and coconut oil industry	Rt 93
Pak Purwo Sugianto	"tempeh" industry	Rt 95
Pak Suwarji	Bamboo handicraft	Rt 95
Pak Pairin	Batik bamboo handicraft	Rt 95

Source : Village administration, 2014

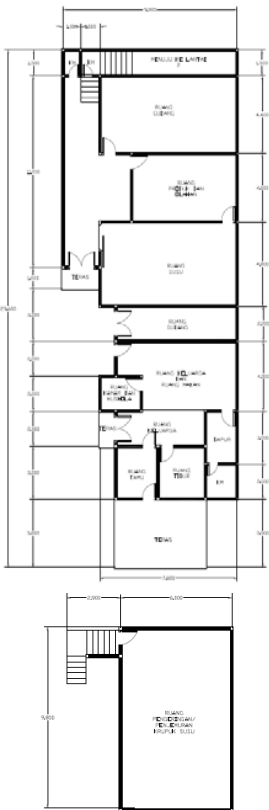
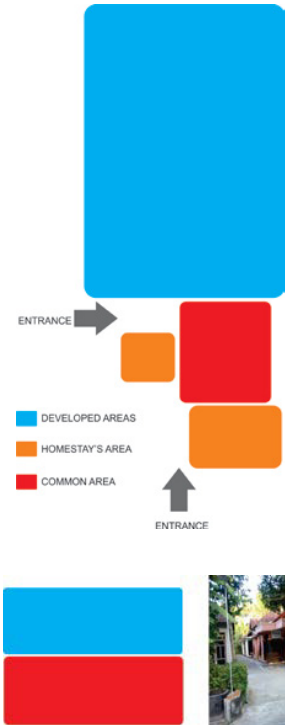

From the sample of respondents, physically, dwelling development in response to their involvement can be categorized into 4 types :

- Development of the back area: for the dairy industry, cattle, coconut cooking oil-Peyek.
- Development of the side area: for "koro" tempeh industry .
- Development of the side – back area: for industry of bakpia.
- Development of the front area: for the bamboo industry, bamboo batik and bread kokis

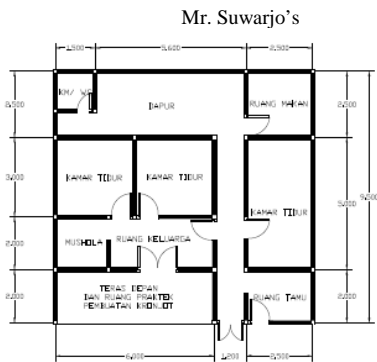
Development of industrial areas are not tied to the type of industry, except milk and cattle that occupy the back

area as they relate to livestock and dairy waste. As for other industries is mainly due to the availability of land owned by citizens to develop the industrial area of the household. In detail, the model of land use which is utilized by the community for business development in the handicraft and household industry can be described by four models in the following table.

Table 2. Sample House of Industrial Classification and Homestay is Researched.

House Plan	Schematic diagram	Description
<p data-bbox="340 379 481 399">Mrs. Sri's house</p> 		<p data-bbox="870 379 1141 469">Milk processing industry Development of space for business is the area behind and above.</p> <p data-bbox="870 473 1141 638">Development area for homestay in front of the house with the use of shared of space is the family room. Separate access between industrial areas and residential areas for homestay with owner.</p> <p data-bbox="870 687 987 777">Facility : 2 bedrooms 1 toilet 1 livingroom.</p>
<p data-bbox="331 1268 489 1292">Mr. Japon's house</p>		<p data-bbox="870 1294 1141 1552">Bakpia processing industry. Development of business space in the back area and side of the house. Homestay development front and center in the house (change of function) by combining the living room as well as a common room. Separate access to industry and homestay with occupancy owner.</p> <p data-bbox="870 1582 987 1669">Facility : 2 bedrooms 1 toilet 1 livingroom.</p>

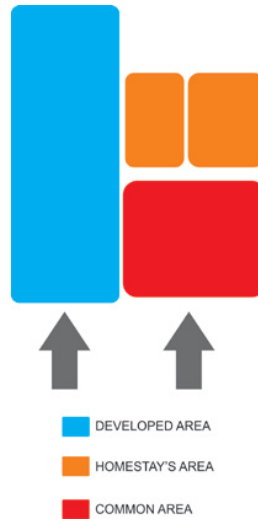
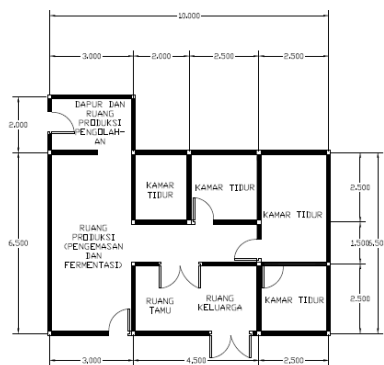




Craft industry of kronjot. Development of business space in the front area of the house. Homestay development is beside the house (change function) by combining the living room as well as a common room. Separate access to industry and homestay - owner occupancy.

Facility :  
2 bedrooms  
1 toilet  
1 livingroom

Mr. Puroso's house



“Koro” tempoh processing industry. Development of business space in the side area in accordance with the rest of the available land. Homestay development front and center in the house (change of function) by combining the living room as well as a common room. Separate access to industry and homestay - residential owners.

Facility :  
2 bedrooms  
1 toilet

Source : mapping and identification, 2015

From the analysis table is shown that the factors that influence the development of housing as a form of community involvement are as follows :

- Type of business / industry household
- Availability of vacant land owned by residents

This shows the element of togetherness to achieve progress, in this case it is represented by the spirit of mutual cooperation that become a bold reason which drives the citizen participation.

### 7. The local wisdom in the development of rural tourism

Practically local wisdom is a community effort to conserve resources that can be used continuously to feed the community and maintain the environmental balance. (hadiwijoyo, 2012) Empowerment of local knowledge-based society through community participation in the development of a tourist village become an important factor especially in directing the development to be equitable and fulfill many people's needs.

Development of rural tourism based on the preservation of the environment can not be separated from the element of empowerment. Successful development can be measured through three main aspects (Nugroho, 2011) ie economic aspects to measure its added value in the economy of the community, social aspects to measure the

community as stakeholders in managing tourism village, and environmental aspects to measure impacts of tourism in the perspective of environmental conservation. This is also in line with what was said by Campbell, (1977) If a tourism will be focused on the aspects of sustainability, then the aspects that must be considered further are in conjunction with the social, economical, and environmental aspects.

Based on these three aspects, then we made the supportive aspect ratio of tourism development between Lopati and Kalibiru to conclude the role of local knowledge in the development of rural tourism. The comparison can be seen in the following table.

Table 3. Comparison of factors that support the development of tourism

Supporting Factors		Lopati	Kalibiru
Environment	Nature	traditional rural	Forest and landscape
	Environmental Conservation	Household waste management industry	Preservation and environmental surveillance
Economic	Livelihoods of Society	Craftsman - farmer	Farmer
Social	Tourist attractions	Educational tourism	Natural tourism
	community participation	Residential development - domestic industry	Maintenance of the natural environment of forest

Source : identification, 2015

Community participation in environmental preservation faces the impact of tourist village development can be understood as a form of villagers' local wisdom to survive. Identification from three aspects based on the table above shows that the spirit of mutual cooperation and maintaining “wawengkon” realize the philosophy of “Hamamayu Hayuning Bawana” and became the basis for engaging in community togetherness to advance further. Schematically, this local wisdom become a parent which is underlying the spirit of togetherness that characterizes public participation to develop tourism village. This can be understood through the following scheme:

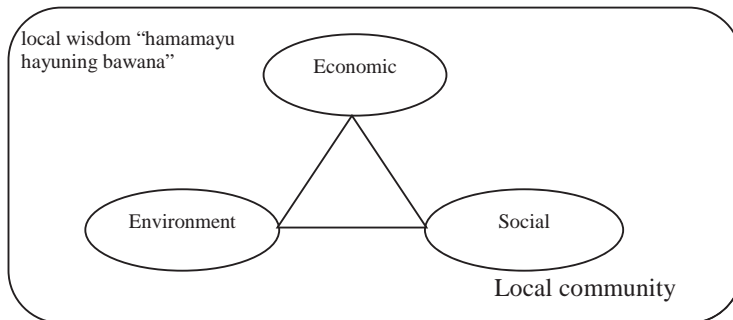


Fig. 7. The relationship aspect of development of rural tourism and community participation in preserving local wisdom

The model can describe three aspects of development linkages within the scope of community participation based on local wisdom. Forms of local wisdom can be described through community participation as follows :

- **Nature conservation - Marshall group (static model)**

These forms of nature conservation in terms of its character is more static, where the protected and preserved object is fixed and activities undertaken is to keep the environment sustainable. In the context of tourism development, this can be a deterrent factor, especially if it is highly relied on natural attractions. the community need to participate actively to develop variations of tourist attraction to become more attractive and obtain value of particularities. Cross-country travel, outbound and dexterity attractions becomes the alternative development. Furthermore, forest management could be a special attraction that has educational aspect so that tourists can learn

directly about the concept of nature conservation conducted. Simple processing of forest products such as herbs, crafts and traditional foods can be developed to extend the tourist's time of staying because this activity can be packaged into an interesting live-in attraction.

- ***Environmental management - Household industry groups (dynamic model)***

This form of environmental conservation, in terms of the character of its activities is more dynamic, where the preserved object will always evolve according to the development of natural tourism that occurred in the village. In the context of educational tourism it is very critical because if the industry had developed but was not followed by good environmental management, it could result on the reluctance of tourists to visit. The community needs to participate actively in developing waste management after their own industry. Integrated waste management could be an alternative of packaging attractions, the concept of "one stop industry" can be applied so that tourists can learn the production process starting from raw materials into a product that is ready to sell which followed by an integrated environmental management.

Nature and the environment are the main objects of the basic assets of tourism development, both as the attractions and facilities that support tourism. Natural conditions and sustainable environment are the assets that must be maintained to keep the the sustainability of tourism. Local communities act as a subject, where cultural elements play an important role. Their motivation and participation become the driving factor which can keep the uniqueness value of tourism.

## **8. Final Conclusion**

Local wisdom as the foundation of sustainable development in rural tourism which can be concluded from this paper is community participation. Based on observations by comparing these two villages, it can be obtained that community participation to develop tourism can be seen from community involvement through:

- Community participation to pack variation of attractions, such as educational tours that teach skills in making simple household industry according as the types of owned businesses.
- Community participation to develop their own infrastructure and facilities to support educational craft industry tourist attraction to be more attractive for tourists.
- The involvement of the community to take part in a group of keepers/"marshall" to preserve land of "wawengkon" and keep it sustainable.
- Community involvement in managing waste from tourism activities to avoid environment pollution and to keep the environment clean hence it would encourage tourists to stay longer.

The driving factor of constantly evolving the community together is the spirit of the community to advance together. This is in line with the spirit of mutual cooperation with the principles of local wisdom "Hamemayu Hayunung Bawana" which become the basic of social life in rural communities. This is seen from the presence of community motivation to continue developing with means to improve the existing conditions by innovation and openness to receive input suited with their main objective, to be a sustainable tourist village.

## **Acknowledgment**

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## **Appendix**

B. Bakpia, a sweet traditional cake made of flour filled with mung bean

- G. Geplak, a sweet traditional snack made of coconut shredded  
Gotongroyong , a kind of mutual cooperation
- H. Hamemayu Hayuning Bawana , a Java philosophy, which means making the earth more beautiful  
Hamemayu, an action to protect shield from everything that could interfere with the safety or inconvenience as a result of anything  
Hayuning bawono, an action to embellish the environment
- J. Jathilan, a kind of traditional dance performance
- K. Kokis, a kind of traditional cake  
Koro, a kind of bean like lentils
- M. Marshall, a group of local community that keeping the environment  
Mie letehek, a traditional noodle made of cassava flour
- P. Peyek, a traditional snack made of flour fried with peanut
- R. Rahayuning jagad, a Java philosophy, which means the safety and preservation of the whole world  
Reyog, a traditional dance performance
- S. Slawatan, a traditional religious performance
- U. Ulayat, an Indigenous owned land
- W. Wawengkon, an Indigenous owned land

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### Other Source

In depth interview with leaders of the group HKm Tani Mandiri, Mr Sumardi, 2015

In depth interview with Mr. Marsono, leaders of farmer groups HKM Mandiri, in February 2015