

The 5th Sustainable Future for Human Security (Sustain 2014)

## The impacts of rural tourism initiatives on cultural landscape sustainability in Borobudur area

Titin Fatimah\*

*Department of Architecture, Faculty of Engineering, Tarumanagara University, Jl. Let. Jen. S. Parman No 1 Jakarta 11440*

---

### Abstract

This study focuses on community-based rural tourism initiatives conducted by village communities in Borobudur Sub-district. There are 7 out of 20 villages taken as case study. It aims to evaluate the rural tourism activities, especially its impacts on the landscape elements in relation with the cultural landscape sustainability. Using interviews and field survey, a mapping on landscape elements changes had been carried out and then analyzed to know the transformation. It is clarified that there are a number of changes on landscape elements in each villages. Five types of changes are found: addition, continue, customize, transform, and repair. The changes that are improving or increasing the value of landscape are considered as part of an evolutive conservation. Meanwhile, we should aware about the uncontrolled tourism development that will lead to the character changes.

© 2015 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of Sustain Society

*Keywords:* rural tourism; cultural landscape; landscape element; tourism impact; Borobudur

---

### 1. Introduction

Borobudur Temple is a world largest Buddhist temple that was built by *Syailendra* Dynasty around 8<sup>th</sup> century. Borobudur Temple compound is then inscribed in the World Heritage List in 1991. The temple is a major tourist destination in Indonesia which attracts around 3 million domestics and foreign visitors annually. It is also surrounded by vast cultural landscapes heritages. Taylor<sup>1</sup> said that Borobudur Temple and its surrounding landscape resemble a

---

\* Corresponding author. Tel.: +62-813-1038-3939; fax: +62-21-563-8352.

E-mail address: [titinf@ft.untar.ac.id](mailto:titinf@ft.untar.ac.id) / [titin.fatimah@gmail.com](mailto:titin.fatimah@gmail.com)

huge amphitheatre where the temple stands in the center and surrounded by mountains. This new perspective of cultural landscape on Borobudur area has been acknowledged since around 2003. Since then, awareness on the importance of cultural landscape conservation in the area has increased, even mentioned in the UNESCO-ICOMOS Reactive Monitoring Mission in July 2003.<sup>2</sup>

Hence, integrating these landscapes into Borobudur tourism scheme is important in conserving the temple. Lane<sup>3</sup> mentioned that the concept of sustainability in rural tourism must be a multi-purpose one if it is to succeed. It should aim to sustain the culture and characters of host communities, as well as the landscape and habitat. In the case of Borobudur, there are several rural tourism movements have flourished in the area.<sup>4</sup> So far, village tour is the most popular form of rural tourism activities in the area. It is aimed to reduce the excessive tourists overcrowding the temple as well as to promote the local villages' potentials.

During the rural tourism activities, local people have carried out some improvements on their village assets. These kinds of efforts bring impacts on the landscape elements. Therefore it is necessary to trace what happened with the landscape elements in the village, they changed or still remained as they were. It is thus important to conduct an investigation on the Borobudur villages' rural tourism initiatives to know the way they utilize village resources, the changes on village landscape elements and furthermore what is the impact on the sustainability of the cultural landscape in Borobudur area.

This study aims to evaluate the community-based rural tourism activities conducted by village communities in Borobudur Sub-district, especially the impacts of the activities they have on the area's cultural landscape elements.

## 2. Methodology

This study uses mainly qualitative method using field research approach. This approach requires the author to go 'into the field' to observe the phenomenon and condition in natural state, take extensive notes and gather qualitative data for analysis.<sup>5</sup> This study has been carried out since early 2003, therefore it can be considered as a longitudinal field research.<sup>6-7</sup> Such research is required to trace the changing conditions as well as the progress of community activities in Borobudur Sub-district which are dynamically transforming.

This study uses field survey and interview as the main data collection. Firstly, a preliminary survey was conducted to know the contents and coverage of rural tourism activities in Borobudur Sub-district. From the data, villages that actively involved are selected as case study for further investigation. Secondly, a mapping on villages' tourism potentials were carried out to know the way they utilize the resources and to trace the changes of landscape elements in the village due to the rural tourism activities. Finally, the analysis was taken place to classify the process of changes using certain parameter to recognize its transformation.

## 3. Result and Discussion

### 3.1. Literature review

Cultural landscape is characterized as the balanced relation between ecological system and human influence. It is a manifestation of the interaction between the human and the natural environment, which is reflected in space and time and is always evolving.<sup>8</sup> The issues on cultural landscape have emerged since the early of 20<sup>th</sup> century and have been raised globally in the past three decades. Beforehand, since the Industrial Revolution, the consideration of Western people always shows that nature is opposite to culture.<sup>9</sup>

The idea of cultural landscape was initially emerged from the field of geography, and then later on it influenced many other fields such as city planning, rural planning, as well as heritage conservation. Attempts to define cultural landscapes have been made since the early 1990s.<sup>10</sup> Through long attempts, nowadays the idea of cultural landscape has spread worldwide. Over the past three decades, recognition of the heritage value of cultural landscapes has contributed to an expanded vision for the field of historic conservation in many countries. The awareness on the importance of cultural landscape conservation has also arisen among the academia and practitioners. In Indonesia, the concept of cultural landscape is expressed using the word of '*saujana*' which means '*sejauh mata memandang*' (as far as eyes can see). Indonesian Charter for Heritage Conservation describes the *saujana* heritage as 'inextricable unity between nature and manmade heritage in space and time'.<sup>11</sup>

From the above definitions, it can be derived that cultural landscape is a combination of both nature and culture as its elements. It shows the relationship between human and their natural environment as a unity. Human and its natural environment are a unity, having inseparable connection.

As we know, cultural landscapes continuously change<sup>12</sup> because they are the manifestation of the dynamic interaction between the forces of nature and culture in the environment.<sup>13</sup> Therefore, the concept of cultural landscape conservation should adapt this dynamic characteristic. This study focuses on community-based cultural landscape conservation by using the basic concept of ‘*evolutive conservation*’ (first introduced by the Architectural Institute of Japan Sub-committee for Rural Cultural Landscape), whose meaning is the conservation of cultural landscape, but including certain transformations while being sustainable as a total value system.<sup>14</sup> The evolutive conservation means how to manage landscape changes in sustainable ways. This idea emphasized that conservation is not the freezing protection of a landscape’s physical components but the continuing relationships that comprise the value system. Landscape management should be harmonious relationship between the nature and human culture.

Nowadays, the efforts of rural cultural landscape conservation take abundant forms, such as through the rural tourism. Tourism is seen as an agent of rural economic re-generation and as a way of valorizing conservation.<sup>15-17</sup>

### 3.2. Rural tourism activities in Borobudur

As a world-famous tourist destination, Borobudur Temple attracts around 3 million domestic and foreign visitors annually, but most of them are typical tourists who only visit the temple and the enclosing Borobudur Tourism Park without visiting other places adjacent to this site.

Recently, another type of tourism has been flourished in Borobudur. Nowadays tourists not only visit the temple, but also can visit the surrounding villages to enjoy the rural atmosphere and its local attractions e.g. see traditional art performance, see try the pottery making, see tofu home industry, see beautiful rural landscape, and so on. These tours usually organized by riding *andong* (horse-drawn passenger cart), a traditional transportation that still exist until today. Tourist could visit the villages assisted by a tourist guide through several predetermined routes which are flexible depending on the situation, time availability and the tourists’ preferences.

According to Fatimah and Kanki,<sup>4</sup> Borobudur rural tourism has long history far behind the current condition. As a background, before the rural tourism activities started, Candirejo village has already implemented village living environment improvement programs and developed their community since the 1980s. Later on it grew up and finally established as Ecotourism Village in 2003. The village tour itself was initiated in 1990s when several local guides and lodge owners started to bring their tourists to the village area. Firstly they did it without any coordination with tourist guide association, but the in 2000, local guides and *andong* drivers agreed to better organize these tours. They made consensus for standard packet tour, route, price, and so on. They also included in the tour the visits to other villages. Finally, village tour became a popular alternative tourism around 2004-2005.

Rural tourism initiatives in Borobudur Sub-district are the result of collaboration between villagers, local NPOs and tourist guides. The rural tourism activities in Borobudur are the form of exploring the village potentials and locality. Therefore, this is different from the so-far typical tourist activities of visiting only the Borobudur temple and park. It is also worth pointing out that the importance of promoting the surrounding villages’ potentials was also recognized by some tourist guides who have been engaged in the typical tourism activity. So, rural tourism here can be regarded as an alternative type of tourism conducted by villagers to promote their village potentials.<sup>18</sup>

### 3.3. The village potentials

According to the field survey, it can be clarified that each village has its own attractiveness. Tourists come to the villages to enjoy the villages’ attractiveness such as rural traditional atmosphere and landscapes, the villagers’ culture, and so forth. Therefore, village attraction is important for rural tourism activities. Rural tourism activities should show both a village’s potentials as well as provide interesting activities to attract tourists (see Table 1 and Fig. 2). Village potentials can be nourished and maintained through the villagers’ daily activities such as farming, keeping their environment clean, growing and keeping greeneries, practicing traditional customs, etc. These village’s potentials are part of cultural landscape elements. Keeping the village resources and potentials is an important in cultural landscape conservation.

Table 1. Village's attractiveness and its utilization for rural tourism (Source: authors' analysis, 2011)

Village's attractiveness (that attract tourists)		How to utilize for rural tourism activities
Natural Resources	Village natural view	sightseeing
	Village traditional atmosphere	sightseeing
	View to Borobudur Temple	sightseeing
	Agriculture	farming lesson
	Topography	trekking
Cultural Resources	Traditional foods and fruits	culinary
	Historic places	ritual, pilgrim tour
	Traditional music and art performances	performances
	Traditional houses	sightseeing, home stay
	Local craft making/home industry	craft making
	Traditional cuisine	culinary, cooking lesson

### 3.4. How to select case study

Of twenty villages in Borobudur Sub-district, ten villages have already involved in and been affected by rural tourism as indicated in Table 2. Based on each village's community-based tourism, we classify the ten villages into three categories: 'active', 'less active', and 'inactive'. An 'active' village means that the village has been intensively conducting some activities to manage the tourism with high community involvement. The intensity could be identified through the existence of well-run village's tourism cooperatives or organizations. A 'less active' village means that the village has some tourism activities, but the involvement of the community is low due to some reasons. An 'inactive' village means that the village community is not actively involved in the tourism activities. As can be seen from Table 2, four villages are classified as active, three villages as less active and three villages as inactive. We selected seven villages that are categorized as 'active' and 'less active' village as the case studies in investigating the history and the current state of rural tourism in Borobudur.

Table 2. List of villages involved in tourism activity (source: field survey, 2010)

Name of Village	Village tour	Organization/ Cooperative	Community activities on tourism	Main potential asset
1. Borobudur★	■	● (2007)	Active	Traditional rural life, sunrise view spot
2. Bumiharjo	■	—	Inactive	Traditional rural life
3. Candirejo★	■	● (2003)	Active	Traditional rural life, agro forestry
4. Giritengah★	□	◎ (2008)	Less active	Historic sites, scenic view
5. Karanganyar★	■	◎ (2004)	Less active	Scenic view, pottery home industry
6. Karangrejo★	□	● (2009)	Active	<i>Punthuk Setumbu</i> sunrise view spot
7. Tanjungsari	■	—	Inactive	Tofu home industry
8. Teksongo	■	—	Inactive	Glass noodle home industry
9. Wanurejo★	■	● (2004,2009)	Active	Art, craft, historic site
10. Wringinputih★	■	—	Less active	Traditional rural life, palm sugar making

**Legend:** ★: Selected village for survey ■: Regular village tour, mostly by *andong*

□: Special tour to sunrise view spot ●: Active ◎: Once established but less active

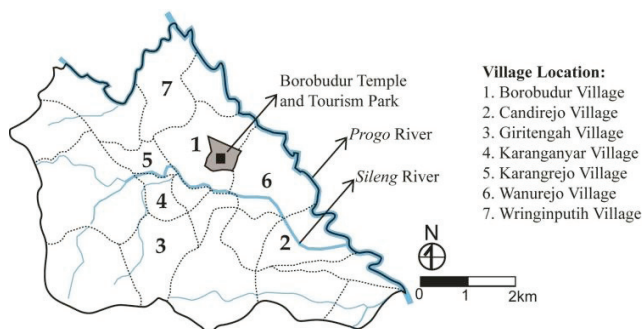


Fig. 1. Location map of selected villages



Fig. 2. Village tour activities

### 3.5. How to categorize the landscape element changes

During the rural tourism activity in their village, the villagers make some improvements on their village environment to increase the village potentials and level of attractiveness. For instance, they cleaned the settlement area and its surrounding environment, renovated local heritage sites visited by the tourists, built small shelter and footpath to the hill top for sunrise spot, and so on. These kinds of efforts bring impacts on the landscape elements. It is important to trace what happened with the landscape elements in the village, have they changed or still remained as they were.

These improvements, on physical or non-physical aspect, have some impacts on the village environmental appearance and landscape elements. According to the field investigation and interviews, some impacts on physical aspect are discovered. Fig. 3 summarizes and compares these impacts by looking at the conditions of the elements before and after the tourism activities.

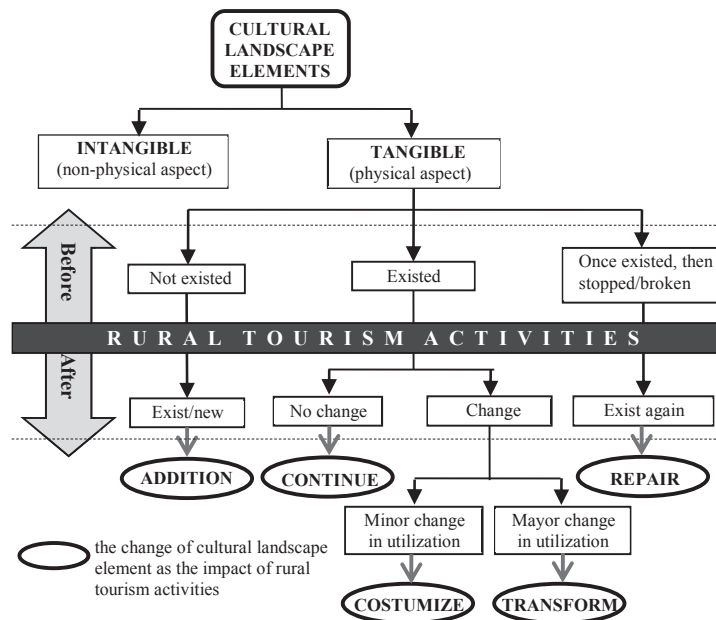


Fig. 3. Diagram of impacts of changes and the example in Candirejo Village (source: author's analysis, 2011)

As the diagram shown in Fig. 3, there are five categories of changes in physical aspect of the landscape elements. The description of each category is given as follows:

#### 1) Additional

The process of adding something new to the current object in order to fulfil some requirements or to make something functionally better, for example:

- a. Making a wood/bamboo hut on the top of the hill for landscape viewing.
- b. Adding a handrail along the footpath up to the hill to help visitors climb up.
- c. Providing night lamps

#### 2) Continue

This is a step to keep things as they are without any changes. For example:

- a. Keeping an old traditional house to remain its original without any transformation.
- b. Continuing some activities such as local home industry, art performances, and agricultural methods/traditions.

## 3) Customize

Customizing is a process of changing something to fit any requirements with only minor change. Examples of this activity are:

- adding facilities for guests in the villagers houses that are utilized for home stay.
- practicing *tumpangsari* system for agriculture: planting various plants in one place to optimize the cultivation in limited farming lands.

## 4) Transform

It is a process of changing an object with major alterations. Examples of this activity are:

- reusing of empty old traditional house into a visit/model house and lunch course venue.
- changing concrete-made fences with green fences.

## 5) Repair

Sometimes, an existing object that is broken or out of date needs to be repaired or renovated. This is necessary to ensure that the object is able to carry out its function properly. Examples of this activity are:

- repairing the access to the village/places to be visited.
- repairing an old bamboo bridge with new bamboo materials.

## 3.6. Landscape elements changes in each village

As mentioned before, there are some improvements done by the village communities due to rural tourism activity in their villages. These improvements have brought some changes to the village environment, which inevitably also affect the whole cultural landscape.

This part will explain those changes case by case and try to reveal what is the consideration of local village community behind it. It is necessary to know their motive and consideration because it will show their awareness upon the importance of cultural landscape conservation. The following Table 3-9 provides some cases of the improvement activities conducted by each local village community in relation with rural tourism activity.

Table 3. Impacts of rural tourism activities on landscape elements in Borobudur Village (source: author's analysis, 2012)






No	Name of object	Description	Category
A1	 <p>Bamboo hut on the top of Bakal Hill</p>	There is a good view spot to see Borobudur Temple from <i>Bakal</i> Hill. Villagers managed this hill for sunrise trip for visitors. In 2008 they built a bamboo hut on the top of the hill to provide a shelter for visitors. Bamboo and woods are utilized as the main material as they are common materials in the village. Unfortunately, now a new resort hotel has been built on the top of the hill, so it is closed for public. Villagers cannot utilize it anymore.	Additional
A2	 <p>village roads improvement</p>	Borobudur Village has many hamlets. These hamlets are separated from each other and connected with village roads. To make access easier, they have done some improvements on the village roads.	Repair
A3	 <p>Rice fields near the temple is important to be conserved</p>	On the south side of the Borobudur Tourism Park, there is an area of rice fields which is also the location of Paleo-Sileng, the ancient Sileng River. This place is often visited by tourists for its good view to Borobudur Temple. It becomes one of the favourite photo spots in Borobudur. Villagers consciously keep and conserve this area.	Continue
A4	 <p>Kampong house as public space for everyone</p>	Maitan Hamlet is the most active hamlet in the village. The community set up a kampong style traditional house for public space. They built it together themselves using the donation they collect from current rural tourism activities.	Repair
A5	 <p>Bamboo hut for enjoying art performance</p>	Villagers built a bamboo shelter inside the settlement area. It is used for visitors when they are enjoying art performances. During regular days, it is also utilized as a guard post. Everybody in the village, from kids to senior people, can use it freely. Sometimes they use it for chatting with neighbours, and so on.	Additional



Table 4. Impacts of rural tourism activities on landscape elements in Candirejo Village (source: author's analysis, 2012)

No	Name of object	Description	Category
B1	 <p>Greeneries are still kept Gate's material is from temple stone.</p>	In early 2008, a new village entrance gate was built to replace the old small gate. The new one was constructed from <i>batu candi</i> (temple stones). It reflects Borobudur Temple in shape and the name of their village Candirejo ('candi' means 'temple'). This gate has become an important landmark of the village.	Transform
B2	 <p>Green fences</p>	Villagers managed to grow ' <i>teh-tehan</i> ' plantation for fences along pathways inside the settlement and around their house yards. Some of these green fences replaced the previous concrete fences. Therefore, they offer a more natural and beautiful rural atmosphere and landscape.	Repair
B3	 <p>Rambutan trees are mostly planted inside villagers' house yards</p>	In 1980s, Candirejo village community started to improve the village environment through a garden utilization program. At that time, many bamboo and other trees wildly grow inside the settlement, making the environment dirty and gloomy. Those plants were replaced by useful crops such as rambutan trees. Since then, villagers usually plant rambutan trees in their garden/house yard.	Additional
B4	 <p>Pathway inside settlement area using paving block.</p>	Following the garden utilization program, Candirejo village community tried to improve the whole village, such as by renovated pathways inside the village. They use stones, paving block, and sometimes asphalt as the material. Now, the settlement environment is much cleaner and tidier than before.	Repair
B5	 <p>This pathway was hardened using river stone (<i>batu kali</i>).</p>	Villagers cover the pathways leading to <i>Watu Kendil</i> historic site on the top of Menoreh Hill with natural stones instead of asphalt or cement concrete. They also plant Pandanus and other greeneries alongside the pathway. This gives the road a more natural nuance.	Repair
B6	 <p>Bamboo bridge to connect hamlets is still kept as its original.</p>	There is a bamboo bridge for crossing the Sileng River. This bridge is also often visited by tourists during the village tour in Candirejo Village. Until now, villagers still keep the original bridge with its uniqueness, and do not replace it with new materials. They appreciate the locality of the bamboo bridge.	Repair
B7	 <p>old traditional house</p>	In Mangundadi Hamlet, there is an empty traditional house because the occupants moved to another place. The empty house is then moved to a place near the village secretary's house and finally utilized as a model house for visitors. Sometimes it is also used as a venue for lunch course for visiting tourists who have reserved the place.	Transform
B8	 <p>Pandanus plants are utilized for craft material and good for landslide prevention.</p>	Supported by Patra-Pala Foundation, villagers planted Pandanus along the pathways/road to <i>Watu Kendil</i> historic site. Pandanus leaves are usually used as materials for handicrafts such as mat, bag, hat, and so forth. Pandanus also has large strong prop roots which are good for landslide prevention.	Continue
B9	 <p>Villagers plant big trees on the hill area, and doing intercrop farming below them.</p>	Agroforestry is developed on the hill areas where villagers plant big trees while intercrops (e.g. orange, chilli, cassava) farming is adopted below. This system has been applied since 1977-1979. It is aimed to detain erosion and to strengthen the soil structure.	Customize
B10	 <p>Tumpangsari farming system is useful for limited farming land.</p>	<i>Tumpangsari</i> (mixed cultivation/intercropping) is an agriculture method in which various crops are planted inside one area. For instance, farmers plant chilli as the main crop, and then they also grow eggplant, bean cassava and papaya. This method gives farmers various crops in different times during one planting season. Sometimes visitors can enjoy this traditional farming experience.	Customize

Table 5. Impacts of rural tourism activities on landscape elements in Giritengah Village (source: author's analysis, 2012)



No	Name of object	Description	Category
C1	<i>Sendang Suruh</i> historic site 	<i>Sendang Suruh</i> historic site is a memorial place of Prince Diponegoro, an Indonesian hero during the Dutch colonial era. There is a stone marked by his foot print at the site. There are also some sacred big trees and spring water near by the stone. Villagers built a fence and clean the surrounding area. They also plant bamboo trees there.	Customize
C2	Pathway to <i>Sendang Suruh</i> 	This historic site is located far from the settlement area. To reach the site, one has to pass rice fields, dry farmland, and cross a river. Villagers had renovated the pathway for easier access. They clean up the way, and in some part they cover the pathway using stones instead of asphalt.	Repair

Table 6. Impacts of rural tourism activities on landscape elements in Karanganyar Village (source: author's analysis, 2012)



No	Name of object	Description	Category
D1	Pathways inside settlement 	Development of pathways using paving blocks was realized during the recent years. Using such a material improves the beauty of the settlement as well as convenience area especially during rainy season. Now the alleys inside the settlement area are tidier and cleaner than before.	Repair
D2	Public toilet 	Villagers provided public toilet for visitors. Previously, when tourists need to go to toilet, they use private toilet in the villagers' houses. However, most villagers feel humble because their toilets are not good enough for tourists, especially foreign tourists. They finally decided to build a public toilet special for tourists funded by Buddhist Association.	Additional

Table 7. Impacts of rural tourism activities on landscape elements in Karangrejo Village (source: author's analysis, 2012)




No	Name of object	Description	Category
E1	<i>Punthuk Setumbu</i> shelter place 	<i>Punthuk Setumbu</i> is the name of a hill in Karangrejo Village that is now well-known for its great view spot to Borobudur Temple. Nowadays many tourists come to enjoy sun rise at this site. Villagers managed the tourist visits by providing a shelter on the hill's top. It is a small wooden hut with traditional architecture style. Local villagers designed and produced it themselves using local materials.	Additional
E2	Railing fences 	<i>Punthuk Setumbu</i> view spot is situated on the peak of the hill with cliffs at some sides. For security reason, the villagers made some handrail from bamboo. They also provide some lamps to help visitors to climb up, especially during early morning when it is still is dark.	Additional
E3	Pathways to <i>Punthuk Setumbu</i> 	Villagers also cleaned up and renovated the pathway to <i>Punthuk Setumbu</i> . The original pathways were quite narrow and in several spots were difficult for climbing up. Villagers made the pathways wider and easier to pass. They also clean up the area on the top of the hill which is then used as the view spot.	Repair



Table 8. Impacts of rural tourism activities on landscape elements in Wanurejo Village (source: author's analysis, 2012)









No	Name of object	Description	Category
F1	 <p>The old banyan tree is still kept</p> <p>Spring water and the bath place</p>	There is an old big Banyan tree in Tingal hamlet. It is believed as a Buddhist tree. At the bottom of the tree, there is spring water, often called as Buddha spring water. Village people still keep and conserve it.	Continue
F2	 <p>The old traditional sometimes being visited by tourist</p>	Villagers still keep a traditional house located in Jowahan hamlet. It is a house owned by a villager but sometimes visited by tourists. It is also used for community activities by the villagers.	Continue
F3	 <p>The old traditional sometimes being visited by tourist</p>	It is an art house belongs to a Malaysia-born painter named Sony Santoso who moved to Borobudur since 2007. He built the house and gallery on a 2 hectare area at the edge of the confluence of Elo River and Progo River, flowing from Merbabu and Sumbing mountains respectively. Photo: <a href="http://www.wisatamelayu.com/en/opinion/126-EloProgo-Art-House">http://www.wisatamelayu.com/en/opinion/126-EloProgo-Art-House</a>	Additional
F4	 <p>Rice field between Jowahan and Tingal Hamlet</p>	There is a widely spread rice field located between Jowahan and Tingal Hamlet within which a narrow pathway lies. Many tourists take this way to feel the rural nature and atmosphere. In the middle of this pathway, there is a spot with great view to Borobudur Temple, and often visited for seeing sunset.	Continue

Table 9. Impacts of rural tourism activities on landscape elements in Wringinputih Village (source: author's analysis, 2012)

No	Name of object	Description	Category
G1	 <p>The old traditional sometimes being visited by tourist</p>	This village still has traditional atmosphere. Many houses are still in traditional styles such as <i>Limasan</i> and <i>Kampung</i> style. Villagers still keep and conserve these traditional houses.	Continue
G2	 <p>Papaya plantation</p>	Wringinputih Village is well-known as a papaya production centre. It is one of the most cultivated plantations in the village because the soil type in this village is good for planting papaya.	Continue
G3	 <p>The irrigation canal for farming</p>	This village is in a flat area but the land level is higher than the Progo River. The villagers therefore could not utilize water from the river. They utilize water from the irrigation canals from another sub-district. It takes long distance and sometimes there are leakages. Villagers managed to repair the irrigation canal so that they can still get the water.	Repair
G4	 <p>Coconut trees utilized for coconut/palm sugar</p>	Wringinputih has a lot of coconut trees scattered over its dry land farming area as well as inside the settlement area. Many villagers utilized these coconut trees to produce coconut/palm sugar traditionally. This activity still continues until now. Recently, they make a new type of coconut sugar powder and sometime add ginger for instant drink.	Continue

From Table 3-9, the assessment of landscape element changes of each village can be summarized in Table 10. Table 10 shows that 'repair' and 'continue' are the most frequent category of changes. It indicates that villagers still utilize their village existing for tourism activities. Meanwhile, 'additional' option is also frequently took place, for instance, the village community built new facilities (such as hut, bamboo railing, public toilet, etc) for tourists. This data shows that during carrying out the rural tourism activities, a number of landscape elements also changes.

Table 10. Result of impacts assessment (Source: authors' analysis, 2011)

Name of Village	Total cases	Type of changes				
		Continue	Repair	Customize	Additional	Transform
1.Borobudur	5	1	2	-	2	-
2. Candirejo	10	1	4	2	1	2
3.Giritengah	2	-	1	1	-	-
4.Karanganyar	2	-	1	-	1	-
5.Karangrejo	3	-	2	-	2	-
6.Wanurejo	4	3	-	-	1	-
7.Wringinputih	4	3	1	-	-	-
TOTAL :	30 cases	8 cases	11 cases	3 cases	7 cases	2 cases

### 3.7. Impacts of tourism activities on cultural landscape sustainability

As mentioned in the previous part, landscape elements have inevitably changed due to the rural tourism activities. Those changes applied in a number of forms, such as architecture, infrastructure, living environment, farming system, heritage site, etc. As we know, cultural landscape is the result of relationships between human culture and nature systems which is connected in a value system. This value system refers to the motivation and practicing ways on how they implement the human actions. When the actions are motivated to improve the current condition without any destruction, then it will add the value of landscape. If any changes are carried out merely for economic benefits in tourism activities – without any consideration for sustaining the environment – then it will decrease the landscape value. Sustainable relationships will bring to the sustainability of the cultural landscape as well. Meanwhile, unbalanced relationships are potential to break the value systems as well as the cultural landscape sustainability. Therefore, Borobudur cultural landscape is a living landscape where people reside, live and work. Every human culture and their actions closely related to their nature systems. Borobudur characteristic as rural area is vulnerable to the changes caused by the growth of uncontrolled economic activity and tourism around the area. This character change can be a potential threat and should be paid a serious attention by related stakeholders.

## 4. Conclusion

Rural tourism activities in Borobudur have flourished and carried out by local communities of the surrounding villages. They utilize the village potentials to attract tourists while improving the village potentials. The changes during those activities have brought some transformation on cultural landscape elements in the area, which influence the whole cultural landscape sustainability. Five types of changes are found: addition, continue, customize, transform, and repair. As long as those changes are improving or increasing the value of landscape elements, it can harmonize the cultural landscape sustainability. Meanwhile, we should aware about the uncontrolled tourism development that will lead to the character changes. The value system is important to maintain the relationship between human culture and nature systems.

## References

1. Taylor, Ken. Cultural Landscape as Open Air Museum: Borobudur World Heritage Site and Its Setting. *Humanities Research Vol. 10 No.2, 2003 pp. 5*. The Australian National University.
2. Engelhardt, Richard. Brooks, Graham and Schorlemer, Alexa. *Mission Report: Borobudur Temple Compound, Central Java, Indonesia: UNESCO-ICOMOS Reactive Monitoring mission 16-20 April 2003*, pp. 18, UNESCO-ICOMOS
3. Lane, B. Sustainable Rural Tourism Strategies: A Tool for Development and Conservation. *Journal of Sustainable Tourism* 1994; 2:1-2.
4. Fatimah, Titin and Kanki, Kiyoko. Evaluation of Rural Tourism Initiatives in Borobudur Sub-district, Indonesia: A Study on Rural Tourism Activities for Cultural Landscape Conservation, *Journal of Architecture and Planning, Transactions of AIJ*, March 2012; Vol. 77 No. 673:563-572.
5. Patton, M. Q. *How to Use Qualitative Methods in Evaluation*. Newbury Park/Beverly Hills/London/New Delhi: Sage Publications; 1987
6. Pettigrew, A. M. Longitudinal Field Research on Change: Theory and Practice. *Organization Science* Vol. 1 no. 3 (Special issue: Longitudinal Field Research Methods for Studying Processes of Organizational Change) 1990; pp. 267-192.
7. Saldana, J. *Longitudinal Qualitative Research: Analyzing Change through Time*, Walnut Creek, Lanham, New York, Oxford: AltaMira Press; 2003.
8. UNESCO. *Operational Guidelines for Implementation of the World Heritage Convention*, Paris: UNESCO World Heritage Centre; 1994.
9. Droste, B. v., H. Plachter, et al. *Cultural Landscape of Universal Value*. Jena, Stuttgart, New York: Gustav Fischer; 1995.

10. Rossler, M., Ed. *UNESCO and Cultural Landscapes Protection*. B. v. Droste, H. Plachter, et al., Eds. Cultural Landscapes of Universal Value. Jena, Stuttgart, New York: Gustav Fischer Verlag; 1995.
11. Jaringan Pelestarian Pusaka Indonesia. *Piagam Pelestarian Pusaka Indonesia* [Indonesian Charter for Heritage Conservation], in collaboration with ICOMOS Indonesia and Ministry of Culture and Tourism; 2003.
12. Palang, H., S. Helmfrid, et al. Rural Landscapes: Past Processes and Future Strategies. *Landscape and Urban Planning* 70(1-2): 3-8; 2005.
13. Antrop, M. Why Landscapes of the Past are Important for the Future. *Landscape and Urban Planning* 70(1-2) 2005: 21-34.
14. Architectural Institute of Japan (ed.). *Mirai no Kei wo Sodateru Chosen –Chiikidukuri to Bunkatekikeikan no Hozen* [For landscape of the future– Conservation of cultural landscape and regional development], Tokyo: Gihodo pub; 2011. ISBN-10: 4765525538
15. Bramwell, B. (ed.). *Shades of Green: Working Towards Green Tourism in Countryside*. London: English Tourist Board; 1990.
16. Brown, V. and Leblanc, F. *The Ontario Heritage Regions Projects*. Ottawa: Heritage Canada; 1992.
17. Jamieson, W. (ed.). *Maintaining and Enhancing the Sense of Place for Small Communities and Regions*. University of Calgary; 1990.
18. Fatimah, Titin. *A Study on Community-based Cultural Landscape Conservation in Borobudur, Indonesia*, unpublished doctoral thesis dissertation. Graduate School of Urban and Environmental Engineering, Kyoto University, 2012