Pressures on the Balinese world cultural landscape heritage: The case of Jatiluwih Subak Village

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Abstract. Since it is declared by UNESCO as the World Cultural Landscape Heritage in 2012, Jatiluwih and some rice terraces and their water temples increasingly got the attention of the world community. Jatiluwih Village area with its outstanding rice paddy terrace and the subak system becomes a magnet for tourists in Bali to visit it, especially foreign tourists. This paper is concerned with the pressures faced by the village of Jatiluwih as it develops as a cultural tourism attraction. It aims to examine activities especially which relate to tourism that may support or give negative impacts to the sustainability of the village. It also examines the management system of the area and questions whether that system is able to maintain its outstanding value and integrity. Descriptive and qualitative approaches are used based on field observation, FGD and deep interviews. This paper notes that the development of tourism activity has become the pressures for the rice terrace. Although physically the landscape of Jatiluwih still shows its character as a traditional village with outstanding rice terraces, some changes have happened, and threats toward its sustainability is clearly seen caused by the weakness in the management system. This becomes the challenges of Jatiluwih to maintain its predicate as part of the world cultural landscape heritage.

Keywords: inscription, Jatiluwih, landscape, rice terrace, tourism

1. Introduction

Cultural landscape is interpreted as the process and products of the relationship between natural and cultural heritage in space and time units, and a complex phenomenon with tangible and intangible identity. [1][2] The world cultural landscape predicate is inscribed by UNESCO (United Nations Educational and Cultural Organization) to the areas or regions around the world that can show the outstanding universal value of the relationship between nature and culture. Values related to universality, uniqueness, and representation of the certain cultural landscape. This outstanding universal value can be fulfilled if the area has an authenticity and integrity values.[3][4] Authenticity is the originality, which is the value of the specificity of the cultural landscape form, while integrity lies in the general values of traditional values that can still withstand the various threats of change.

Balinese subak has been inscribed as the World Culture Heritage (WCH) by the United Nations through The United Nations Educational and Cultural Organization (UNESCO) in June 29, 2012. The inscription of subak as the WCH falls under the cultural landscape category with the title: "The Cultural Landscape of Bali Province: The Balinese Subak System as a Manifestation of the Tri Hita Karana Philosophy". There are four cultural landscape in Bali Province that were inscribed as the world heritage, which are Subak Danau Batur, Subak Pakerisan, Subak Catur Angga Batukaru (Jatiluwih), and Pura Taman Ayun.[5] This predicate
reflects the world recognition toward the outstanding and universal values of subak, so that the world joins to protect it, as well as the recognition of subak as the authentic culture of Indonesia.

Over the past thousand years subak, paddy, and the water that sustain it, have together shaped the landscape and are an integral part of religious life. According to Pitana [6], subak is by definition a customary law society which has the characteristics of an agricultural-socio-religious, which is a gathering of farmers who manage their irrigation water in paddy fields. Subak activity is guided by the Hindu philosophy called Tri Hita Karana that contains a message for humanity to manage natural resources including water wisely for its sustainability, always give thanks to God, and always seeks harmony and togetherness in solving problem.[7] Since the 11th century the water temple networks have managed the ecology of rice terraces at the scale of the whole watersheds. Water from springs and canals flows through the temples and out onto the rice paddy fields. The cooperative management of water resource by a group of subaks is focused on these water temples.

Jatiluwih, a traditional village in Penebel District, Tabanan Regency, is becoming more and more famous with its spectacular rice terraces. This village has an outstanding value on its cultural landscape heritage, especially on its agrarian life of the community. Farming is the main occupation of the local people and the farmers community join in the subak organization, which regulates the flow of water for their ricefields. After the UNESCO designation, this traditional village has become the tourist destination for its beautiful landscape and nature activities.[8] Changing of the rice terrace landscape has happened in line with the growing number of visitors every year. Changing function of ricefield into buildings to support the tourism activity has been going on, that threaten the sustainability of the subak and the landscape. Furthermore, the growing number of visitors coming to the rice terraces has created some social and physical problems that could weaken the life of the farmers and decrease the quality of the landscape. In the other side, the management system of subak Jatiluwih is still questionable, due to its improper implementation. The large number of parties that involve in the management of subak and tourism may cause the weakness of the management system.

The purpose of the paper is to examine challenges of Jatiluwih as a world cultural landscape heritage in facing the impact of tourism that gives pressures to the rice terrace landscape, and the management system implemented to manage and maintain the whole world cultural landscape heritage of Jatiluwih. It includes the description of the outstanding universal value of the subak; the impact of tourism on the landscape; and the implementation of the management system for the subak landscape.

2. Methods

This paper is based on a case study research which explore subak Jatiluwih, particularly after the inscription as the World Culture Heritage by UNESCO in 2012. Although many cases on the world culture heritage around the world has been explored, the case of subak Jatiluwih provides a unique case study because of its unique cultural background, which is a Balinese Hindu in a contemporary Indonesian setting.

Primary data was collected from the field observation, Focus Group Discussion (FGD), and deep interviews. Field observation was conducted three times, once in 2018 and twice in 2019 to get understanding and collect data on the condition of land use and rice terraces, development of tourism facility and activity, farmers activity in farming, and development of trekking route and decorative installation for tourism purposes. Taking photos and notes was taken during the field survey. Focus Group Discussion was conducted once during the field survey (May 2019) in Jatiluwih village to collect data and information regarding the condition and problems faced by subak. It was attended by 8 (eight) worker farmers who do not own the land; 4 (four) land owner farmers; and 2 (two) representatives from the Management Board of Tourism Destination (MBTD). Based on the result of the field observation and FGD, the deep interviews with 4 (four) farmers, 3 (three) hotel owners, and 2 (two) MBTD staff was also done.
to get more understanding and information on the problems and management of subak.

Qualitative analysis was used by explanation building, which is constructing and evaluating the organized data and information into narration. Narrative explanation is used to interpret the outstanding values of the rice terrace of Jatiluwih, transformation of the landscape, pressures faced by the rice terrace, and the management system implemented in the area.

3. Result and Discussion

3.1 Outstanding Value of Jatiluwih Subak Village

The inscription of subak as the world cultural landscape heritage has made the vast rice terraces in Jatiluwih Village become the attention of the world. Jatiluwih Village is one of the traditional villages with an outstanding value of the life of its agricultural community. Agriculture is the main livelihood in Jatiluwih and the village community are involved in the "subak" organization, which regulates the flow of water to the rice fields. With relatively cool air at the elevation of 700 meters above sea level, at present this village becomes tourist destination with its beautiful natural landscape created by the unique rice terraces on the slope of Mount Batukaru (Figure 1).

The area of Jatiluwih Village covers 22.33 km² and consists of 7 subak groups, which are: Subak Kedamain, Subak Besikalung, Subak Kesambi, Subak Kesambahan, Subak Gunungsari, Subak Gunungsari, and Subak Uakayu. The total number of the subak member is 505 farmers, with the whole subak land area of 207.15 ha. In the subak arrangement, including subak in Jatiluwih usually consists of several components, which are the forests that protect the water supply; paddy terraced landscape; rice fields connected by a system of canals; tunnels and weirs; villages; and various size temples that mark either the source of water or water passage through the temple on its way downhill to irrigate the subak land. According to Widari (2015), the irrigation water source of subak Jatiluwih comes from spring water, fountain and rivers that flow through the subak, such as Yeh Ho River, Yeh Baat River, Munduk Abangan River, and Yeh Pasut River Temples in Jatiluwih are Pura Luhur Petali, Pura Luhur Bhujangga, Pura Rshi, and Pura Taksu.[9]

The integration between human and nature shown in the subak system exemplifies the Balinese philosophical principle of Tri Hita Karana, as said by Windia.[10] He also mentioned that a harmonious relationship between people and their environment is promoted by the water temple rituals through the active engagement of people with ritual concepts that emphasize dependence on the life-sustaining forces of the natural world.[10]

Figure 1. Natural beauty of rice paddy terrace in subak Jatiluwih
Source: Field observation, 2018

The outstanding universal value of Jatiluwih is lied on its integrity and authenticity values. The property fully encompasses the key attributes of the subak system and the profound impact that it has had on the landscape of Bali. The processes that shape the landscape, in the form of irrigated and terraced agriculture organized by the subak system, are still vibrant and resilient. The agricultural land are all still farmed in a sustainable way by the local
communities and their water supplies are democratically managed by the water temples. This shows the integrity of the area.

The authenticity of the terraced landscapes, forests, water management structures, and temples which all reflect the subak system and convey the outstanding universal value is clear. The overall interaction between people and the landscape reflects the harmonious relationship with the spiritual world and the ancient philosophical concept of Tri Hita Karana.

3.2 Pressures from Tourism on Jatiluwih Landscape

The predicate as the World Cultural Landscape Heritage has opened up the potential of tourism and culture of Jatiluwih to the wider world. Rice paddy terraces of Jatiluwih has increasingly known and visited by many tourists. The beauty of nature and unique subak culture guided by Hindu philosophy become the attraction for both foreign and domestic tourists. The conserved culture and tradition give a special characteristic to Jatiluwih Village, including arts and ceremonies associated with the agriculture activities. In addition, the existence of a traditional village in Br. Gunungsari which still conserves its traditional settlement patterns has become a tourist attraction. In short, Jatiluwih offers the spectacular natural landscape, cultural, religious, and of course adventure tourism, such as trekking and cycling. The traditional activity of the farmers on their rice fields also becomes an interesting tourist attraction. Farmers still work using traditional tools, such as hoe for ploughing the fields or planting the paddy.

Tourism in Jatiluwih also provides some supporting facilities such as homestay or cottages, and restaurants with Western food or special local cuisine served with red rice originally planted in Jatiluwih. To reach the rice terraces of Jatiluwih, tourists only need 30 minutes drive or 14 kilometer from the district main city, or about 50 minutes (26 kilometer) from the regency. This easy accessibility of the area is one of the important aspect to support the development of tourism in Jatiluwih.

Based on a research done by Sri Budhi and Lestari, there are several indicators of tourist attraction expected by visitors who visit Jatiluwih, including:(1) unique natural views of rice-terrace, mountain forest, traditional arts, and the culture; (2) various vegetation, plantation, and animals; (3) accessible tourist activities, such as enjoying natural panorama, tracking, farming, doing research and education, and spiritual activity; (4) cleanliness and amenities of the area, such as refreshing green environment, odor-free, garbage-free, and good services for the visitors; and (5) safety from crimes/thief, no deforestation, and no dangerous disease.[11] According to them, these five indicators can be met by Jatiluwih.[11]

The number of tourists visiting Jatiluwih rice terrace has been increasing year by year, especially after the inscription of Balinese subak as the World Cultural Heritage in 2012. Type of visitors is dominated by foreign tourists. According to Jatiluwih Tourism Attraction Management Board, the number of tourist in 2015 (164,358 people) increased by 29.9% in 2016 (213,509 people), and increased again by 17.5% in 2017 (250,973 people).[12]

Figure 2. Tourism facilities along the main road and tourists start to explore the rice terraces
Source: Field observation, 2018
Although farming activity is still going on, Jatiluwih faces some very serious threats. The ongoing development of tourism activity in fact has given a wide range of changes, including changes to the physical environment. Some land along the main road in the rice terrace area have been sold and converted into buildings for tourist facilities, such as homestays and restaurants (Figure 2). At present, there are 10 medium to large scale homestays and restaurants along the main road side with various type of architectural building designs. Transformation of the landscape continues to accelerate due to support the tourism that seriously damages the visual integrity of the landscape. Further impact is the large amount of water diverted for use by the tourist activities, is adversely impacting the existence of subak.

A number of tourist facilities along the main road becomes the main spot of the tourist destination, transforming the serene rice fields area to a busy area full of tourists. A big number of tourist coming to the rice terrace of Jatiluwih everyday also contribute to the degradation of the paddy field. The trekking activity in the field has destroyed some rice field footpaths that disrupting the work of the farmers. What also disrupts the authenticity of the rice terrace is the installment of some new physical elements, such as decorative lamps, gazebos, sculptures, and con-block roads (Figure 3). Those decorative elements are for tourism purposes that have changed the atmosphere of the serene traditional rice terrace landscape. The new physical elements in the rice filed are shown in the figure below.

![Figure 3. New physical elements installed/built on the paddy fields](source: Field observation, 2018)
Focus Group Discussion that was conducted during the research resulted a lot of important information regarding the subak. Many problems faced by the farmers were identified as shown in Table 1.

| No | Problems                                                                                   |
|----|-------------------------------------------------------------------------------------------|
| 1  | Lots of rice fields change owner because of buying and selling rice fields.                 |
| 2  | Many of the subak have been exploited, for agrotourism or ecotourism which eventually has no benefit for the farmer. |
| 3  | Farmers who only own a small paddy fields (50 acres) are difficult to prosper if they rely on their paddy, so eventually the rice fields are sold. |
| 4  | Many young people do not want to become farmers to replace their parents, because farming is less promising for the future and considered less prestige. They prefer to work at the hotel business or cruise ships. |
| 5  | Climate change affects: the reduction of irrigation water, competition in water use, pest attack, and land conversion. |
| 6  | The activities of growing poultry and pigs in Jatiluwih interfere with the quality of water |
| 7  | There is a government funding aid for each subak, but it can only be used for infrastructure improvement (50 million rupiah/year), not for the increase of rice production. |
| 8  | Many farmers do not like a lot of tourists come, because it is uncomfortable in view, and the tourist group likes to block the road. There also are many farmers who do not care about many tourists coming |
| 9  | Not all farmers know that Jatiluwih is a world-class subak                                   |

Source: FGD, 2019

Some of the problems faced by subak Jatiluwih are documented through FGD, among others: changing ownership of rice field; exploitation of subak; weak regeneration; climate change impacts; and not suitable implementation of government funding. From the discussion, it was also found that many farmers do not like Jatiluwih as a tourism destination, and they like Jatiluwih as it used to be. Also, the fact is that not all farmers know and understand about the predicate of Jatiluwih as a world class cultural landscape. All those problems become a burden and pressures for Jatiluwih for its sustainability.

3.3 Management System of Jatiluwih as the World Cultural Landscape Heritage

As the world cultural landscape heritage, Jatiluwih subak village needs a proper management system that support the traditional systems and provide benefits to all the farmers who live with their subak system from generation to generation. The protection of the landscape is also needed in order to protect the source of water that is very important for the subak system. Prior to the inscription of subak as the world cultural landscape heritage, the management plan for the proposed sites was prepared by the Government of Bali. The broad legal framework for the protection of the property was established by Provincial Decree of 2008 for conservation and spatial planning for the proposed sites. A specific legal framework for the areas has been established by a Memorandum of Understanding between the Government of Bali and Regencies of Bali for the Establishment of the Strategic Area of Bali.

In Balinese traditional system, the rights and responsibilities of subak community, and the traditional protection and conservation of cultural properties are written in the legal codes, called awig-awig, or traditional customary laws and regulations. Awig-awig underlies regulations of Bali Province Number 5 (2005) Section 19, that clarify zoning for protected sacred sites such as temples. Rice terraces within the sites are also protected against large-
scale tourism development by Tabanan Regency Decree No 9/2005. The temples and archaeological sites are currently protected under the National Law No.5/1992 concerning items of Cultural Heritage.

The aim of the management of the subak system is managing the site to promote the goals of sustainable livelihoods and sustainable ecosystems.[10] The management is also to strengthen the capacity of subak as the primary institution involved in the management of the rice terraces and guardians of ecosystem services and the temple hierarchy. For centuries, the subak landscape has been maintained by the local communities, so that they should be involved in all programs to manage and develop the heritage site, and get benefit directly from their heritage.

With the development of tourism in Jatiluwih, several parties collaborate to manage Jatiluwih, which are the Government of Tabanan Regency, Official Village of Jatiluwih (Desa Dinas), Traditional Village of Jatiluwih (Desa Adat), and two subak used as the tourism attraction, which are Subak Gunung Sari and Subak Jatiluwih. The Government of Tabanan Regency then formed an institution to manage the whole tourism activity in Jatiluwih, called Badan Pengelola Daerah Tujuan Wisata Jatiluwih (BPDTW/Jatiluwih Management Board of Tourism Destination).[12]

Exa

In term of organizational structure, there has been a coordination both vertically and horizontally between the government and other parties, which are Provincial Government of Bali, Tabanan Regency, Official Villages, Traditional Villages, private sectors, and also local farmers and land owners. However, at the local level, there are four institutions that should work effectively, which are: Official Villages, Traditional Villages, Subak Organization, and the new organization BPDTW. From these four local institutions, the latest one (BPDTW) has a very crucial role because it has to coordinate stakeholders who involve in the area of Jatiluwih. However, BPDTW seems only focus more on tourism, especially marketing and managing tourists coming to Jatiluwih area, including managing the number of tourist visiting this area; creating tracking routes; installing decorative elements in the rice field; setting up and collecting the entrance ticket; and also initiating Jatiluwih annual festival to promote tourism.

Several regulations were actually developed to manage this area, including land use regulation, zoning regulation, building permit, environmental protection, and agriculture conservation. However, the problems seem to be on the law enforcement. Example of the weakness of the law enforcement are the emerge of several new buildings for tourism activity, which were build on the rice field area. If such practice continues, it will destroy the whole landscape of the area. The inscription of subak as the world heritage caused a special management for Jatiluwih, however, its implementation has not been satisfactorily for all parties, as seen in the result of the FGD in Table 2.
Table 2. Result of the FGD on management problems in Jatiluwih

| No | Management problems                                                                 |
|----|-------------------------------------------------------------------------------------|
| 1  | Land conversion and new building construction have been going on, although the government has set up the BPDTW that responsible to manage the area. |
| 2  | Many farmers do not like the additional elements that were installed or built by BPDTW in the rice field area, because those were not the village culture. |
| 3  | Farmers in Jatiluwih feel that there is no transparency in managing money from the entrance ticket. They feel that as the owners of the property (the rice fields), they only get very little portions from the benefit of tourism. |
| 4  | The land owners, farmers and members of BPDTW do not clearly understand the UNESCO principles or standards of the management of the world cultural landscape heritage. |

Source: FGD, 2019

The result of the FGD shows that in human resource development aspect, it seems that the area needs a more qualified human resources to be able to manage this area properly. The installment of many physical elements in the rice terraces shows the limited knowledge and experience of the local institutions on how to manage tourism activity in sustainable way. It also shows that the institutions that manage the subak do not clearly understand the UNESCO's principles or standards in managing the world cultural landscape heritage. There may a different perception toward the outstanding universal value of the subak.

The financial or economic aspect is also the crucial one, as in the theory of sustainable cultural landscape, conservation should also covers economically viable and sustainable. At present, a special tariff for tourists visiting Jatiluwih has already set up by the BPDTW, and then the money is reallocated or redistributed for the management purposes for the interest of other stakeholders in the area, including land owners and farmers. However, the land owners and farmers expressed their concern that their interests have not been fulfilled satisfactorily, especially the unfair redistribution of the revenue from the entrance tickets by BPDTW, in which the land owners and farmers only get too small portion. Another weakness of this organization is that it is not capable in controlling the building development, that somehow creates a visual threat.

4. Conclusion
The research found two important points. The first is the fact that the inscription of UNESCO has an impact on the changing landscape of Jatiluwih rice terrace that may will affect its sustainability. The increasing number of visitors every year in Jatiluwih after the inscription has become the pressure of the area, since it has accelerated the conversion of the rice fields to be the tourist facilities. Although at present the subak system and the rice terrace landscape are still in a good quality, pressures toward the authenticity and integrity of subak and the rice terrace are continuing to happen.

The second point relates to the management system of the whole area, including the organization structure, regulation, human resource, and financial support. Although the management plan has been set up since the preparation of Balinese subak as the world heritage, its implementation faces some problems. In general, the existing management system of the area is not capable enough to ensure the sustainability of the area. The weakness particularly were on the law enforcement, human resources, and financial management which are not effective enough to face with the increasing pressures brought by tourism activities.

The development of tourism should be manage properly and carefully. It is important to increase the quality of human resources, particularly the local institutions to be able to manage
this area sustainably. Incentive and desincentive mechanisms should also be applied to subak Jatiluwih to balance the cost and benefit of the conservation and development of the area. There is a need for better financial and economic management for the area of Jatiluwih, which covers also all aspects of ecological services and environmental cost. Better management of economic system would guaranty the sustainable of this area.

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