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Invention Tradition on Subak Cultural Landscape World Heritage Site, Jatiluwih, Bali Island, Indonesia

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Abstract

The traditional investment of the Subak Jatiluwih area into a tourist destination is strengthened by its recognition as a Cultural Landscape World Heritage Site, so that it has become a tourist destination equipped with facilities, amenities, and accessibility in this area, and made Subak one of the marketing icons in a tour package. However, this traditional invention causes instability in the existing social structure, such as land conversion and conflicts of interest between farmers and tourists, Banjar managers, Jatiluwih tourist attraction management, and investors who threaten the sustainability of Subak. This study used a qualitative method with interview techniques, observations, and literature studies which show that the process of heterogeneity of the relationship between Science, Technology, and Society actors reached its peak after being registered as a Cultural Landscape World Heritage Site, which includes Pura Danu and the Pakerisan River Basin, including Jatiluwih in 2012.

Keywords

Invention tradition, subak, cultural landscape, world heritage site, science & technology studies, Jatiluwih,

INTRODUCTION

Subak is a technological tradition created by Balinese Hindu culture, which is the teachings of Balinese Hindu Sekala and Nisakala (Eisman, 2012), which creates a beautiful view of the terraced rice fields, thus becoming a famous tourist attraction and so, since the 1970s (Lansing, Arbi and Dhamiasih, 2011) in (Putra & Pitana, 2011), Bali has become one of the most popular tourist destinations in the world. Millions of domestic and international tourists have visited Bali (Rachman, 2012).

Whitten, Soeriaatmaja, and Afiff (2000) in Rachman (2012) stated that in many ways tourism had become part of Balinese culture and economy, and its influence cannot be stopped. Furthermore Whitten et al. (2000) note that tourist-related land demand has been assessed as the most important factor influencing agricultural planning and land use in Bali, and the loss of rice fields amounts to at least 1,000 ha/year, thereby reducing the island's ability to be self-sufficient in rice.

The invention of the Subak Bali Jatiluwih tradition in the UNESCO list of Cultural Landscape World Heritage Sites is a symbol of the importance of preserving rice farming, not only enjoying beautiful views of rice fields, but the essential symbolism is the concept of food security for the Balinese people through rice planting.

Along with widespread globalization, this will surely bring significant changes to the traditional Balinese lifestyle. These issues should be addressed, in consultation with local communities and relevant government authorities, to reduce and ameliorate the negative impacts of tourism (Rachman, 2012), (Lansing, 2011) in (Putra & Pitana, 2011), and (Lansing, 2006).

The development of tourism facilities and infrastructure in the heritage area is one of the negative impacts of tourism in Bali (Rachman, 2012). Parking areas, toilet facilities, restaurants, souvenir kiosks, hotels, and information offices are often built near or within site. As a result, site accessibility becomes more complex, spatial planning based on cosmological doctrine is disturbed, and the beauty of the Cultural Landscape is polluted and becomes less enjoyable (Putra & Pitana, 2011); Subak Jatiluwih's following action as a world cultural heritage (Rachman, 2012), the implications of tourism that bring about social change and threaten Subak (Muhajir, 2019), and tourism pressures on the social structure of Subak Jatiluwih (Rahmi & Setiawan, 2020).

Based on this background, traditional investment has led to the strengthening of Subak, which at its peak in June 2012, Bali Subak and its water-based temple (Dewi Danu) and landscapes based on Tri Hita Karana Bali were recognized as Cultural Landscape World Heritage Sites (UNESCO, 2012). The areas included are the Ulun Danu Batur Highest Water Temple in the Bedugul Tourism Area, Lake Batur in the Kintamani Tourism Area, the Subak Landscape of the river stream (DAS) Pakerisan Tirta Empul Tourism Area - Elephant Cave, the Subak Catur Angga Batukaru Landscape in the Mountain Area Batukaru, and the Royal Water Temple Taman Ayun Temple, Mengwi Royal Temple Area, Badung Regency.

In contrast to what was written by (Lansing, 2006), (Putra & Pitana, 2011) who discussed the contamination of rice fields fed by Subak irrigation, including other researchers such as (Whitten et al., 2000) stated that in many ways tourism has become a part of Balinese culture and economy in the use of the environment in Bali, (Lansing, 2006) who studied the perfect order of complexity about Subak Bali from Upstream to Downstream, and (Rachman, 2012) about the continuation of tourism development as what should be done in Jatiluwih after being recognized as World Heritage Site, and (Muhajir, 2019) about the critical condition of Subak Jatiluwih when it became the primary destination for a World Heritage site because of the negative impacts it caused, (Rahmi & Setiawan, 2020) about tourism pressures on Subak as a world cultural heritage, so my article discusses the stability of traditional inventions Subak Jatiluwih after being recognized as a Cultural Landscape World Heritage Site in 2012.

Based on the above background, the existing Subak is a process of invention of the tradition of Science and Technology Studies, so the research problem I propose is the occurrence of instability in the Subak Jatiluwih Tourism Destination after experiencing a process of traditional invention, such as the emergence of massive land conversion for tourism, a conflict between farmers and visitors, and the various effects this process has had on tourism destinations since 2012.

LITERATURE REVIEW

The UNESCO World Heritage Site was established during the General Conference of the United Nations Educational, Scientific and Cultural Organization in Paris from 17 October to 21 November 1972 after taking into account and considering the aftermath of the destruction and loss of world cultural heritage after wars and other actions. Theft (whc.unesco.org), within the scope of ASEAN, Indonesia is one of the countries that has world heritage resources (Parnwell, King, & Hitchcock, 2010).

One of the criteria for a World Heritage Site is the Cultural and Natural Heritage (Cultural Landscape), which is defined as the Cultural and Natural Heritage; under Article 1, for this Convention, the following shall be considered as "cultural heritage": monuments: First, works architecture, works of monumental sculpture and painting, elements or structures of nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science. Second, groups of buildings: groups of separate or connected buildings which, because of their architecture, homogeneity, or place in the landscape, have outstanding universal value from the point of view of history, art, or science. Third, sites: human works or a combination of natural and human results, and areas including archaeological sites that have outstanding universal value from a historical, aesthetic, ethnological, or anthropological point of view (UNESCO, 2012).

Indonesia's world heritage site cultural landscape is Subak, which comes from Balinese Hindu culture and first appeared in royal inscriptions in the eleventh century (Lansing, 2006). It refers to unique social and religious institutions;

democratic and self-governing farmer organizations that share responsibility for the fair and efficient use of irrigation water for growing rice (Rachman, 2012).

Subak is not a village but a unique institution managing irrigation water. Most Subaks have a written legal code called a wig-wig, which details the rights and responsibilities of Subak membership. Importantly, Subak is not only a practical water manager; they also have a religious dimension that stems from the belief that irrigation water is a gift from Dewi Danau or Dewi Danu (Lansing, 2006) and (Rachman, 2012).

However, its activities do not stop at water distribution but extend to determining the type of seed to be used, harvest time, and the area of land that a member can own through the allocation of the amount of water allocated and carrying out all activities. Many and very complex rituals are involved in agricultural life as a whole (Agung, 2010a) dan Rachman (2012).

With ancient technology, rice cultivation was spread over most of the island for centuries, as small teams of skilled workers pulled water out with long spider threads crisscrossing the slopes of sacred mountains. Over the last approximately one thousand years, the expansion of the Subak system for wet rice cultivation has transformed the Balinese landscape (Lansing, 2006) and (Putra & Pitana, 2011). Each Subak manages one or more terrace blocks. When the water supply exceeds, the amount required for the Subak, canals and tunnels is often extended to transport the excess flow to the Subak further downstream. In this way, using traditional techniques, the Subak can deliver small amounts of water precisely to terraces located several times from the water source.

Since each Subak's right to use irrigation water is based on the implementation of an annual cycle of rituals honoring the Lake Goddess and other deities, the Cultural Landscape created by the Subak includes water temples and shrines as well as landscape engineering the Subak, dams, tunnels, waterways, and rice fields. (Scarborough, Schoenfelder, and Lansing, 2000) in Putra and Pitana (2011). Each Subak maintains a local network of temples and water temples, where farmers make offerings to their gods. The schedule of ritual activities in these temples is the key to the growth cycle of native Balinese rice, and the complex Balinese system of timing finds one full expression in these rites.

Tourism uses the physical landscape of terraced rice fields (Subak) as a tourist attraction and does business on it. The beauty of Subak is part of traditional technology based on Tri Hita Karana in Balinese Hindu belief. The use of primary geographic landscapes for tourism is also related to three elements; landforms and geology, the natural vegetation of the soil and the animals that depend on it, and human presence (Burton, 1995) and (Rachman, 2014).

Subak is a social construction involving the realm of Science and Technology Studies (STS), which has a very long trajectory, starting from the eleventh century during the Balinese Hindu kingdom, which was managed communally by the community at the Banjar (village) level in rural Bali. Subak governance in the STS concept can be seen in the research conducted by Rachman (2012) and resulted in an autopoietic system run by rice farmers in rural areas.

Seeing the problems related to Subak as a Cultural Landscape tourist destination undergoing a process of traditional invention, this research will understand more deeply the processes and social relations, which include a network of actors in managing Subak technology as an artifact. Subak, as a tradition, has experienced traditional inventions at the international level with the submission and recognition of Subak as one of the UNESCO World Heritage Sites in the Cultural Landscape criteria in 2012. This process involves communal social structures at the Banjar, provincial, and even national levels. Traditional inventions in Subak experience strengthening and widening of meaning in the international realm.

Trajectories that are also important to note are that after the determination of Subak Jatiluwih as a Cultural Landscape World Heritage Site, why there is a conflict between tourists and farmers, the significant conversion of Subak land into tourism facilities, and the lack of stabilization of the social practices of Subak Jatiluwih.

METHOD

Based literature review above, a conceptual framework can be made regarding the Subak phenomenon as a cultural heritage that undergoes the process of invention of the tradition of Science, Technology, & Society through institutional strengthening at the Banjar, provincial, national levels, and ultimately achieving legality at the international level. (Cultural Landscape World Heritage Sites) however, experienced a destabilization of social practices after the increase in visitation rates in 2019, as described in Figure 1 below:



Figure 1. Conceptual framework

This research takes the study of the phenomenology of Subak as one of the World Heritage Sites and becomes a tourist destination in Bali. The background description and literature review show that this research is socio-technical writing, a qualitative participatory method used to identify the value of contestation (Creswell, 2007) and (Rachman & Tekol, 2020) between the value of cultural heritage and the phenomenon of tourism.

In this study, the unit of analysis of Subak as a Cultural Landscape tourist destination includes three categories: institutions, symbolism, and materiality. The institutional field focuses on the behavior and relations between communities involved in Subak governance as a Cultural Landscape tourist destination. These communities include Subak members, farmers, local governments, tour operators, and tourists. The symbolic field is the center for producing and disseminating knowledge, authority,

ideology, meaning, and perception of Subak technology governance as a tourist destination. The third element, materialistic, focuses on the systems and technical components of Subak governance as a tourist destination.

Subak, as an object of research, is a source of primary data information obtained through observation, in-depth interviews, and literature studies; and defines that qualitative research is used to address several different types of objectives in the research process (Veal, 1992) some participants were conducted in small numbers and sometimes in informal situations.

The research schedule was carried out in 2021 by literature study, taking the research location of the Subak area, which has experienced traditional inventions as a tourist destination for Subak Jatiluwih, Tabanan Regency, Bali Province, in April 2021.

RESULT

Subak, as a Balinese cultural tradition, experiences traditional inventions at the local (Banjar), provincial and national levels (becoming national tourism and cultural agenda) because of its nature which is part of the tourism geography that utilizes Balinese rural resources through the management of the Subak community in the direction of the Banjar Organization so that it becomes a distinctive social identity for Balinese tourism after being designated a Cultural Landscape World Heritage Site (Herawati, 2015), (Widari, 2015) and is a form of traditional investment.

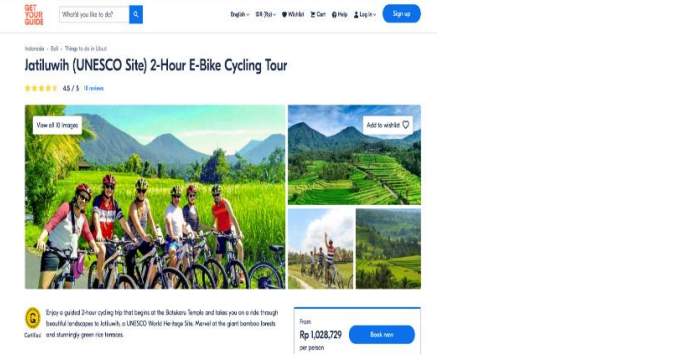
After Subak became a Cultural Landscape World Heritage Site, promotions, and sales of tour packages to see Subak mainly was carried out by tour operators in Bali. Tour packages include transportation, accommodation, eating and drinking components, tourist attractions, tour guides, and souvenirs (Rachman, 2014) and (Rachman, Hutagalung, & Silano, 2013) so that the Subak tour package becomes one of the components of a tourist destination in a travel route (itinerary).

Table 2. Subak Jatiluwih Tour Packages by Bali Top Holidays Tour

Tour Operator	Remarks
Bali Top Holidays	Full Day Tour Jatiluwih and Butterfly Garden, Tour Code: BTH 388 (Bali Olive) Itinerary: Duration 10 to 12 hours, Lunch, dinner, Jatiluwih Tour Price & Butterfly Park Prices start from Rp. 615,000, Package Includes: 1x lunch at a local restaurant, 1x dinner at a local restaurant All entrance tickets to the attractions mentioned above, Driver, car and gasoline, Complimentary 1 Bottle of Mineral Water Per Person Per Day, Prices include tax (Tax), Parking + Retribution

The tour packages at DTW Jatiluwih mostly use local tour guides with walking tour activities with short, medium, and long distances; both are carried out by principles managing DTW Jatiluwih and farmers who can act as tour guides. Another option is a tour package by doing a simulation of planting rice in the fields and seeing the farms owned by rice farmers with the Subak system in Jatiluwih. In addition to tour packages already on site, there are also tour operators that sell Subak Jatiluwih tour packages advertised on the internet and can increase awareness of Subak Jatiluwih tourism products (Wijaya & Pamungkas, 2019). For example, tour operators who sell Jatiluwih Tour Packages can be seen in Table 2 and Table 3.

Tabel 3. Tour Package Subak Jatiluwih by Get Your Guide

Tour Operator	Remarks
Get Your Guide	

Subak is used as a component of tourist destinations in attractions, amenities, and accessibility, and also in a tour package in Bali. The Subak philosophy practiced by the Balinese Hindu community generally results in a tradition of Subak inventions in tourism in villages that have rice fields initiated by the Banjar Group or Tourism Awareness Group (Pokdarwis) in each village. Subak Jatiluwih is managed by the Jatiluwih Tourism Destination Regional Management, which oversees several Banjars in this area (Muhajir, 2019).

In the management of Subak as a tourist destination, the initiators of traditional inventions are members of the Banjar Group, Pokdarwis, or Operational Management of Jatiluwih Attractions that manage attractions, amenities, and accessibility of the Subak area with governance that experience traditional inventions, namely Subak served for tourism purposes. It is expected that there will be additional income from tour packages, including transportation transactions, accommodation, or other transactions such as selling souvenirs to form the Green Tourism Concept (Dianasari, 2016).

There is an interaction between the host and guest (McKean, 1989) during the visit period in the Subak Jatiluwih area. The attractions of green terraced rice fields can be enjoyed (Heliasih et al., 2019), and tourists can also interact with the existing community, most of whom are farmers who manage their fields with the Subak system. Since entering the gate of the Jatiluwih Region Destination, tourists have been greeted by tour guides ready to accompany their tour of the Tourism Area (Dianasari, 2016; Muhajir, 2019).



Figure 2. Jatiluwih Subak rice field

The number of tourists visiting the Subak Jatiluwih attractions continued to increase from 2014 to reach 165,144 people, in 2015 it decreased by 164,366, and in the following year the number of tourists continued to increase in 2016 (213,509), 2017 (250,973, and 2018 (277,189) as shown. quoted from (Muhajir, 2019). The rice fields which are recognized as one of the World Heritage Sites can bring in foreign and domestic tourists. The green color appeal is like a rug that spreads across the Jatiluwih area.

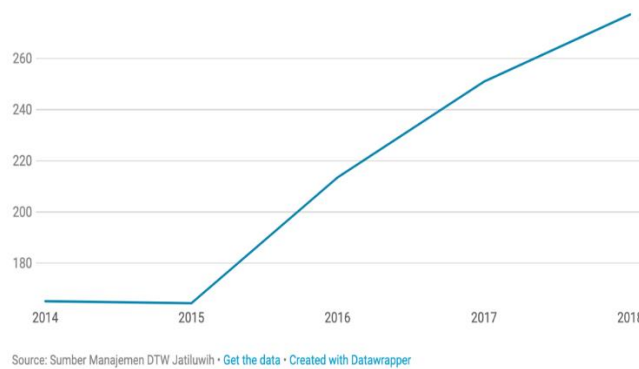


Figure 3. number of visitors (in thousand) to Jatiluwih (Muhajir, 2019)

Tourists who enter are charged an entrance fee of IDR 40,000, -/person, while for foreign tourists, and IDR 15.000, -/person for domestic tourists. The total income increased sharply in 2014 (IDR 3 billion), until the next three years (2018) it could reach Rp. 9.8 billion, can be seen in Figure 4 (Muhajir, 2019).

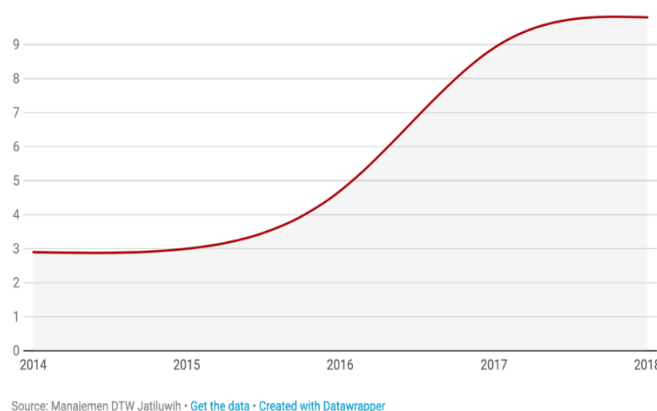


Figure 4. number of income (in billion) for Jatiluwih (Muhajir, 2019)

The development of amenities in tourist destinations has also increased, including the existence of complementary buildings for tourist destinations such as the Jatiluwih Tourism Destination Management Agency, Bank Rakyat Indonesia ATM (Automated Teller Machines), a restaurant called Gong, Billy's Terrace Cafe, lodging and souvenir shops, food shops. small businesses owned by residents, rental of All Terrain Vehicle (ATV) vehicles and other amenities that support tourism activities (Muhajir, 2019; Widari, 2015).

Accessibility in the Subak Jatiluwih Tourism Destination Area is a rural infrastructure which was initially only used for agricultural activities and other rural activities. The development of accessibility after the invention of the Subak tradition as a Cultural Landscape World Heritage Site has in fact increased the use of existing land so that there is traffic density in the existing accessibility because it is used by local people as well as tourists who come.

However, according to research conducted by Muhajir (2019), there are social changes between hosts and guests, which at the beginning of the introduction of Subak Jatiluwih as a Cultural Landscape World Heritage Site there was no conflict between them. At the beginning, the host was proud of the arrival of foreign and domestic tourists to see the rice fields with the Subak system in their area, as well as tourists who were happy to see who both felt happy and proud of proving that they had visited one of the Cultural Landscape World Heritage Sites.

The results of research stated that after seven years of being recognized as a Cultural Landscape World Heritage Site, there has been a destabilization of the social structure in Jatiluwih (Muhajir, 2019). The relationship that occurred at the beginning went harmoniously but after seven years there were social changes that threatened Subak as the cultural heritage of the Balinese Hindu community of Jatiluwih. This is marked by the existence of social conflicts between visitors who damage the rice fields and farmers finally installing barbed wire to not enter the rice fields and the conversion of rice fields into tourist destination amenities (Rahmi & Setiawan, 2020).

The results of the discussion with one of the observers of Bali tourism, especially regarding the strategic planning of tourist destinations, Subak Jatiluwih (P1) stated: "There is a mismanagement in the management of Subak Bali after the status of a Cultural Landscape World Heritage Site so that it can threaten this tradition. The lack of supervision, control, and strategic planning factors has caused Subak Jatiluwih to experience negative changes due to tourism development that does not pay attention to Tri Hita Karana"

Further discussion with tourism academics who also pay attention to the social and cultural processes of Subak Jatiluwih as a Cultural Landscape World Heritage Site and its social changes (P2): "The conversion of paddy fields for tourism facilities after becoming a world cultural heritage is a fact that occurs and differences of opinion among stakeholders in Subak Jatiluwih are very dynamic"

DISCUSSION

This research has implications for economic and socio-cultural policies in Bali tourist destinations and social relations between actors and sociotechnical, especially if applied to DTW Subak Jatiluwih. Conceptual goal (understanding) that shows Subak as a tourist destination phenomenon in a socio-cultural context. In particular, the conceptual objectives include the identification of actors and analysis of Subak's social relations after being registered as Cultural Landscape World Heritage Sites.

The novelty of this research is the invention of the Subak tradition as a Cultural Landscape World Heritage Site whose interpretation is not only on the material aspects of Science, Technology, but also includes the symbolic aspects of a sustainable Society. This has implications for the ability to understand problems, issues, and the structure of relations built by relations of meaning, ideology, interest, and public perception.

Figure 5 describes the Subak Jatiluwih trajectory which has been strengthened by being recognized as one of the Cultural Landscape World Heritage Sites, but in its seven-year journey, it has experienced practical instability in the social structure.

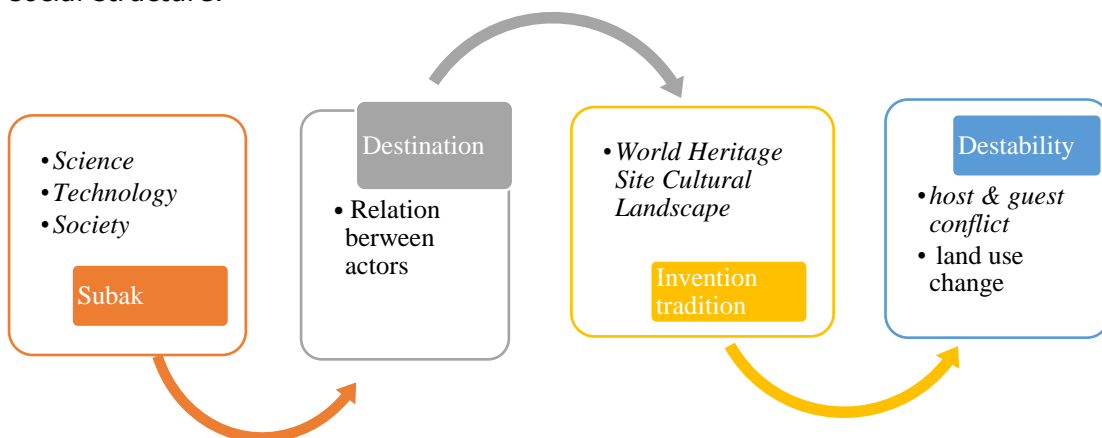


Figure 5. Trajectory of invention tradition Subak jatiluwih

Subak is the result of science, technology, and society that emerged from Balinese Hindu religious culture (Rachman, 2012) and (Hughes, 2004) sees Science, Technology, and Society in a religious context and serves a religious purpose, providing American settlers with a very different perspective on technology than is currently applicable in the industrialized world. For them, technological transformation is a gift from God that can help them change the new world order into the Garden of Eden. They call this extraordinary transformation the "second creation".

Social activities with dynamics that exist in the social structure so as to recreate something new (Hobsbawm & Ranger, 2012) are referred to as invention tradition. This investment appears in social practices that are in accordance with generally accepted rules and norms. The process of an investment tradition is

initiated by someone who has access to communal power, so that formal and ritual social actions will have an internalization impact on individuals and communities within a social structure of society (Musthofa, 2018; Suteja & Wahyuningsih, 2019) and create a tourism sociology. associated with local community motivation (Pitana & Gayatri, 2004).

Subak Jatiluwih traditional investment involves Science, Technology, and Society at the same hierarchical level (MacKenzie and Wajcman, 1999) in Yuliar (2009); Yuliar and Anggorowati (2006). This epistemological paradigm makes it possible to see the dynamic interaction between technical systems and social systems that construct sociotechnical reality. In the context of DTW Subak Jatiluwih, the co-evolutionary approach of technology and society as shown by local wisdom that has been formed (Dhana et al., 2014), so that it is possible to have a more comprehensive observation of the dynamics of governance of Subak as a tourist destination. Landscape at local, national, and international levels.

Subak as a Cultural Landscape has complexities, especially after experiencing the invention of tradition by being registered as a UNESCO World Cultural Heritage. Then the problem arises that it is not easy to manage subak technology as a second creation for the use of tourist attractions. The rapidly growing global tourism in Bali threatens this subak (Rahmi & Setiawan, 2020).

The community is easier to understand the adoption and adaptation of new technologies that will be more promising advantages and benefits for tourism, such as the transformation of land from rice fields into tourist properties and other land transformations for the use of modern landscapes in heritage sites for new tourism development areas, and with local institutions (Febriantini et al., 2019).

Associated with the complexity of the actors involved in the process of discovering the tradition of utilizing technology governance in Subak's Cultural Landscape as a Tourist Destination Area (DTW). In this view, subak technology governance cannot be seen only as a bottom-up type from the subak community to local government but is a bottom-up interaction, both horizontally. Vertical interactions occur between the subak community and the local government and its actors. Meanwhile, horizontal interactions occur between actors and institutions at the same social level (de Bruijn et al., 2004).

Conceptually, the sociotechnical system can be understood as a dynamic relationship between social elements (individuals or groups) and technical elements that depend on each other to create a social system (Hughes, 2004; Yuliar, 2009). Social changes that occur in a society are closely related to changes in the sociotechnical system (Bijker & Law, 1992). In this context, the management of the Subak DTW as a tourist destination must be seen as an effort to protect the Jatiluwih Subak Cultural Landscape from the transformation caused by tourism activities and development in Bali.

The success of the invention of the Subak tradition as a tourist attraction depends on how social institutions related to subak governance create productive connectivity in a network as a socio-technical development

system of social construction in the Jatiluwih Subak Tourism Destination Area. To understand and control social relations, it is necessary to have an interdisciplinary framework to understand the structure of the subak technology problem comprehensively.

However, the introduction of the invasion of Subak's World Heritage Cultural Landscape tourism has implications for instability, as an effect of the transformation of social rules. Destabilization can lead to the success or failure of subak technology governance as a tourist attraction, this depends on technology governance involving actors and institutions that have the potential to affect the process of social relations (Rahmi & Setiawan, 2020).

The traditional invention model in Subak raises new problems in the social order of DTW Subak Jatiluwih (Agung, 2010b), it can also be seen in Geertz (1963) in Agung (2010c); McKean (1989) presented the concept of "cultural involution" based on his in-depth article on agroecological change in Indonesia. In his perception, "cultural involution" is a paradoxical process where on the one hand, Balinese people tend to strive to be modern while on the other hand, they prefer to maintain their local traditions. Instead of industrialization, they prefer to get funds for greater modernization from modern tourists, who are otherwise attracted to the same traditions.

It seems clear that the ethical image of Bali is largely economic driven, representing Bali in general as an island with rich production-oriented resources ready to be harvested at any moment, not including any reference to the implications of that image for the position of local people or the way the image is perceived by the local population. Balinese themselves (Agung, 2010b), have an economic, socio-cultural, and environmental impact (Subadra & Nadra, 2012), and get additional local households (Buda, Susrusa, & Djelant, 2021).

The research conducted by (Agung, 2010c) has seen that social transformation takes place in Bali after the development of the global tourism industry in Bali to the traditional culture and way of life in semi-rural and rural villages. This also applies to rice cultivation technology through the "Green Revolution" (Capra, 1997) and the threats associated with their water irrigation systems, but also allows an increasing number of global tourists traveling off coasts, hotels and tourism centers deep into rural areas, affect them.

The sacred temple site and led to the development of agricultural land tourism and the commercialization of their culture, all in such a way that their society is undergoing a process of transformation and change that is generally not desired (Agung, 2010a), and in fact Jatiluwih's human resources which consist of farmers, managers, communities are weak in the participation of Subak Agrotourism (Amaral, Sapanca, & Ariati, 2019), and weak encouragement from the community (bottom-up).

Spatial characteristics attract large numbers of tourists to small areas that have high potential for commercial development (Wall, 1993). However, such

places are often fragile and in Subak Jatiluwih this happened. Social practices that occurred after the traditional investment turned out to have an impact on trajectory instability in the network of actors involved in DTW Subak Jatiluwih within a period of nine years (2012-2021), namely the emergence of conflicts between tourists and farmers and land conversion so that management needs to regulate interests stakeholders (Dharmiasih, 2019).

The social construction of the Subak Jatiluwih DTW contains high Balinese Hindu cultural values, so that instability (the emergence of social conflicts and land use changes) (Bokings, Sunarta, & Narka, 2013) will threaten the preservation of the hard-earned value of the Cultural Landscape World Heritage Site, which involves communal communities from the banjar, district, and local levels, province and the state of Indonesia (Susila, 2019). There must therefore be very careful control over the scale and type of development at the site and it may be desirable to ensure a separation, perhaps through regress or zoning, between attractions and infrastructure that caters to tourist needs (Hernandez Cedillo, 2010; Rahmi & Setiawan, 2020; Wall, 1993; WTO, 2004).

CONCLUSIONS

Science, Technology, and Society are actors involved in the process of forming a convergent trajectory even though there is heterogeneity of the actors of the Subak journey which was only at the beginning as part of the tradition of the Balinese Hindu community, thus experiencing the invention of tradition as a tourist attraction visited by domestic and foreign tourists, even has become part of the UNESCO World Heritage Site.

When Subak is recognized as one of the World Heritage Sites, it symbolizes the pride of Balinese cultural identity which is more global and becomes a strategic promotion tool at the international level. as a field of agricultural science in Balinese society who adheres to Hinduism. Utilization of the Subak landscape in Bali is not only for Hindu religious ritual rice farming but also for economic purposes, rice production and its scenic beauty for tourism business.

The Subak Trajectory which has experienced traditional investment in the Jatiluwih Tourist Destination Area has implications for the instability of social construction in its management, such as the emergence of conflicts between hosts and guests, land conversion, and jealousy of financial income.

Thus, this conclusion also answers the research questions posed at the beginning of the introduction, namely:

1. The process of becoming a Cultural Landscape World Heritage Site has a symbol of traditional invention involving heterogeneity of actors from various levels and aspects of life, especially the symbolism of the importance of preserving rice farming not only enjoying beautiful rice fields, but the most important symbolism is the concept of food security for the community. Balinese people through rice cultivation can achieve an increase in social class at the international level through UNESCO recognition.

2. The process of instability and conflict in the Subak Jatiluwih Tourism Destination Area after the invention of tradition into a Cultural Landscape World Heritage Site tourist destination was caused by the large invasion of concepts and tourism development in a traditional community without paying attention to the social and environmental carrying capacity of the Subak Jatiluwih Area. This traditional investment must be accompanied by the role of the community in learning and social practices regarding the sustainability of community life through Tri Hita Karana. Suspected in development from 2012 until now, Tri Hita Karana as a philosophy of life for the Balinese people has experienced a reduction due to the magnitude of tourism pressure.

In the general conclusion of this research, I state that Subak as a Cultural Landscape World Heritage Site is one of the development issues based on Balinese Hindu culture. It is necessary to communicate a concept that bridges between stakeholders in the sustainable management of Subak Jatiluwih as a cultural heritage and local genus, and as an investment in tradition through tourism. The concept of Limit to Growth in the Subak Jatiluwih area needs to be understood together so that tourism that develops in this area does not put too much pressure on science, technology, and Subak society, to maintain harmonization between Subak and tourism as a symbolic social phenomenon of Balinese ethnicity and economy.

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