



# **Spatial Transformation of Subak in Northern Kuta Tourism Area, Bali: From Agricultural to Cultural-Service**

**I. Nyoman Sunarta<sup>1</sup>, Saptono Nugroho<sup>1</sup> and I. Made Adikampana<sup>1\*</sup>**

<sup>1</sup>*Department of Tourism Studies, Udayana University, Indonesia.*

## **Authors' contributions**

*This work was carried out in collaboration with all authors. Author INS designed the study, analysis and conducted the final editing of the manuscript. Author SN wrote the literature review collected the data, conducted analysis and discussion. Author IMA wrote the first draft of the article, the discussion section and completed the references. All authors read and approved the final manuscript.*

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## **ABSTRACT**

As one of the world cultural heritage designated by UNESCO, Subak in Bali experienced various challenges in the framework of its existence. Subak is recognized as a traditional Balinese agricultural institution based on local water management. The risks that subak must face when in the circle of international tourism practices because Bali is a tourist destination that is very reliable by the Government of Indonesia in order to obtain foreign exchange. The purpose of this article is to reveal the problems faced by as a local genius irrigation system. Especially related to spatial function changes that occur in Northern Kuta tourism area, Bali, by identifying the distribution of subak, composition, and typology of existing actors related to their interest in water, sub-urban development patterns, and subak alienation practices. Spatial approach adopted to determine spatial changes that occur ranging from agriculture to tourism. Data collection based on spatial analysis with GIS application, observation, interview, and focus group discussion. Spatial changes were found to be caused by the penetration of accommodation development, accessibility, and communal facilities. This situation occurs because of the limited tourism space in the center of tourism areas or tourism business areas (TBD) such as Kuta and Legian. There has been a

\*Corresponding author: Email: [adikampana@unud.ac.id](mailto:adikampana@unud.ac.id);

transformation of spatial functions: from agricultural functions to cultural-service functions. The change in spatial planning indicates a tendency to shift the socio-cultural community around Kuta Tourism Area from agrarian to sub-urban characteristics. Thus, it has an impact on the existence of subak as the last bastion of sustainable tourism development in Bali.

*Keywords: Subak; tourism; spatial change; sustainability.*

## 1. INTRODUCTION

Bali is the main tourism destination of the Indonesian government in order to obtain foreign exchange from tourism practices. As one of the provinces in Indonesia, Bali has 16 tourism areas that have been set out in the regional spatial plan from 2009 to 2029. Kuta Tourism Area is one of the famous and has a very strong attraction. With the main natural attraction base, it is Kuta Beach. In addition, it is also supported by the agrarian culture of local people with various religious ritual processions that are also strong. Administratively, this tourism area consists of two sub-districts, namely Kuta District on the South side and North Kuta District on the Northern side. The tourism business district (TBD) is located in the southern part, namely Kuta and Legian Beaches. While the northern region, which is the area around the center of the region, is a buffer of tourism with the dominance of land use in the form of agriculture. As a buffer zone, the northern part of the region, in the context of this paper is referred to as Northern Kuta Tourism Area, inseparable from the impact of tourism development. Especially related to the change of the function of agricultural cultivation space into tourism. A change that has an impact on the existence of subak as a cultural heritage [1].

Subak is a Balinese water management-based agricultural institution that has its own uniqueness, because it is not only profane but also sacred (a symbol of harmonization). With its uniqueness, subak is one of the capitals of cultural tourism development in Bali so far. But ironically, when tourism has grown to become the economic base of Balinese society, the issue of subak preservation becomes the major challenge [2]. It means that the practice of tourism has not been in line with the practice of subak. Specifically, it is related to the phenomenon of changes in space function that are predicted to have occurred.

This phenomenon is happening in Northern Kuta Tourism Area. Tourism development in this region is feared to be a threat to existence and also to the development of subak. Challenges to the sustainability of subak in tourism areas,

relatively have a high level of difficulty, because the tourism area is an area that has urban character. Areas with urban character tend to have high aggressiveness related to changes in physical, social, cultural, and economic conditions. Various changes in this context, this is due to the increasing diverse interest of urban communities. The interests of urban communities are reflected in the context of water use represented by each actor, in accordance with their respective interest bases. The use of water by the perpetrators creates a practice of water contestation in the Northern Kuta Area. Based on the observed phenomenon, this article aims to disclose the problems faced by Subak as a local genius irrigation system by identifying the distribution of existing subak, composition and typology of actors related to their interest to water, sub-urban development patterns, and the practice of subak alienation.

## 2. THEORITICAL FRAMEWORK

### 2.1 Subak as a World Cultural Heritage

Subak as one of the world's cultural heritage, known as a typical Balinese irrigation system based local genius of the local community. Subak is not only a technical implementation in the context of the provision of rice fields *an-sich*, but also involves several aspects, such as: social, cultural, and spiritual aspects of Hinduism. This is a manifestation of the philosophy of *Tri Hita Karana* [2], considering that in practice Hindu-Balinese farmers adhere to the rules relating to Subak and Subak Temples. Subak has at least three main components: (i) components of the physical system, in the form of rice fields; (ii) components of the irrigation system, in the form of water structuring procedures; and, (iii) the components of the social system, which are members of the subak (called *krama subak*) consist of farmers and land-owners [3].

In this context subak can be stated to meet the socio-cultural dimension of water resources. Referring to that dimension, in 2012 the United Nations Educational, Scientific and Cultural Organization (UNESCO) legalized subak as a

World Cultural Heritage. The awarding of the title and recognition given by UNESCO is a high appreciation from the global community towards the wisdom and local genius of Balinese people based on agrarian culture. Local wisdom contained in subak is a uniqueness, which can be used in the framework of preserving subak itself, through the development of Tourism-based Balinese culture.

## 2.2 Physical Impact of Tourism

Tourism is the activity that has an impact on the environment, which consists of natural and socio-cultural components [4]. The environmental component has been widely recognized as the main capital of tourism development. [5]. There is an interdependence between the environment and tourism, as a symbiotic-mutualism relationship. [6] mentions that tourism benefits from the quality of environmental services. Similarly, the environment also benefits from quality tourism practices. In addition to these reciprocal benefits, there are also problems in tourism development, especially if not planned carefully. According to [7], the negative impact of tourism on the environment occurs because tourism is positioned as a consumer of space, thus requiring large amounts of land for the construction of various components of tourism products. That negative impact can trigger conflict between tourism and the environment. On the other hand, the positive impact of tourism occurs when tourism is able to act as a conservation institution so as to improve the quality of the environment. this means that tourism can create synergy between agricultural development and tourism service industry in a tourism area.

## 2.3 Northern Kuta Tourism Area as a Suburban Area

Northern Kuta Tourism Area consists of six villages, namely: Kerobokan Kaja, Kerobokan, Kerobokan Kelod, Dalung, Canggu, and Tibubeneng. Most of Northern Kuta Tourism Area is a rural area that gets a lot of tourism development by local tourism stakeholders. The combination of the development of tourism product components created in the Northern Kuta area characterizes the urban character. Thus, two characteristics of development appear, namely for some zones have shown the shape of the city, but on the other hand, there are still existing zones with village characteristics. The presence of two regional characters due to

tourism development in Northern Kuta Tourism Area, indicates that the area is a suburban area, because at first the suburbs were rural areas that transitioned into urban areas. The characteristic of the area that characterizes the suburban area is the mixing of rural and urban characters. Thus, Northern Kuta Tourism Area is an area that is undergoing the process of becoming a suburb.

The Suburban Phase is a very important process in determining socio-cultural-spatial change in urban areas, especially metropolitan areas. This suburb occurs due to the activities of residents who penetrate from the center to the rural. According to [8], the suburbs occurred due to changes in the economic structure of the region. This change in economic structure encourages changes in the composition of people's work from the agricultural-based to industrial-based (such as tourism) with a variety of professions. The industrial sector is becoming highly developed and encourages individuals to switch jobs or professions. Industrial estates located in the urban will attract rural residents to migrate to the urban areas (urbanization). The suburbs are a continuation of the urbanization process, as a result of these development of the urban areas [9].

## 3. METHODOLOGY

The approach of this research is qualitatively. Qualitative approach to systematically describe and explain social phenomena and relationships between social phenomena. While the space approach is used to understand the tendency to change the function of agricultural space. There are four methods of data collection, such as: spatial data interpretation of subak area (based on spatial analysis with GIS application), observation, interview of subak elements (*pekaseh*) and representation of local communities (*kelian adat* and *kelian dinas*), and focus group discussion among government actors, tourism entrepreneurs, indigenous peoples, urbanites. All approaches are combined to understand changes in subak function as a socio-cultural phenomenon in a spatial framework [10].

Subak which has calculated land changes is spread across six villages included in the Northern Kuta Tourism Area. After the subak area changes in the Northern Kuta Tourism Area, it was then analyzed descriptively qualitatively to explain the cause of the change in the function of the space. (Fig. 1.).

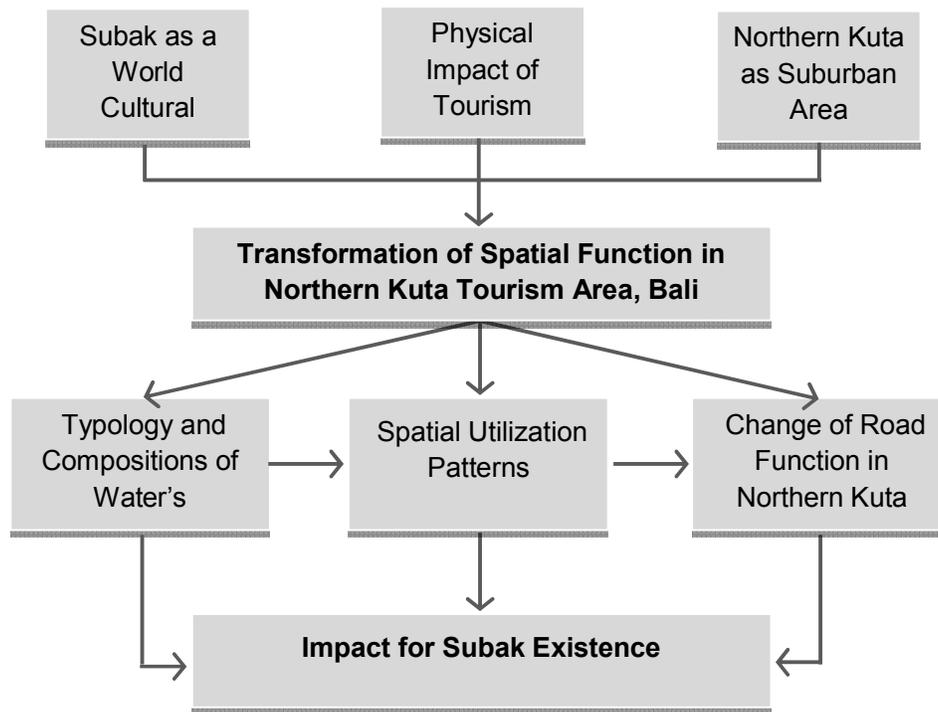


Fig. 1. Analytical framework

#### 4. RESULTS AND DISCUSSION

The tourism area is an area with the main function of tourism and relatively self-contained [11]. With the specialization of such functions, the tourism area is always supported by various types of amenities and accessibility to meet the needs of product providers and tourism markets. [12] and [13] states that areas that have special functions and there are various facilities and support services are spaces with urban character. Kuta Tourism Area located in Badung Regency Bali has been known as a world-class tourism destination. In its development, the development of tourism products such as attractions, amenities, and accessibilities spread to the outskirts of tourism or suburbs. This situation occurs due to the increasingly limited land located in the center of Kuta Tourism Area. In addition, the shift of tourism product development to the periphery was also caused by the Bali Bombings in 2002 and 2005. Tourism players prefer locations located in suburban areas for comfort and security.

Until now, the construction of accommodation businesses, especially homestay and villa types, restaurants, and retail souvenir is quite massive in Northern Kuta Tourism Area which is a suburban

area. Not only that, the area is also a residential development site where most of the residents are tourism workers or who are indirectly related to tourism. The penetration of tourism and residential products into the Northern Kuta Tourism Area led to the high transfer of agricultural cultivation land functions into components of tourism products and communal facilities. Changes in the functioning of the space occurred, indicating a decrease in the area of subak in the area.

##### 4.1 Existing Distribution Pattern of Subak In Northern Kuta Tourism Area

In Northern Kuta Tourism Area there are at least 19 subak: Basangkasa, Kedampang, Petitenget, Sebuah, Muding, Tegal, Banjarsari, Bantan, Daksina, Dawas, Perancak, Semat, Cangu, Liplip, Umaalas, Umadesa, Bernasi, Gaji, and Saih, spread across six villages: Kerobokan Kelod, Kerobokan, Kerobokan Kaja, Tibubeneng, Cangu, and Dalung.

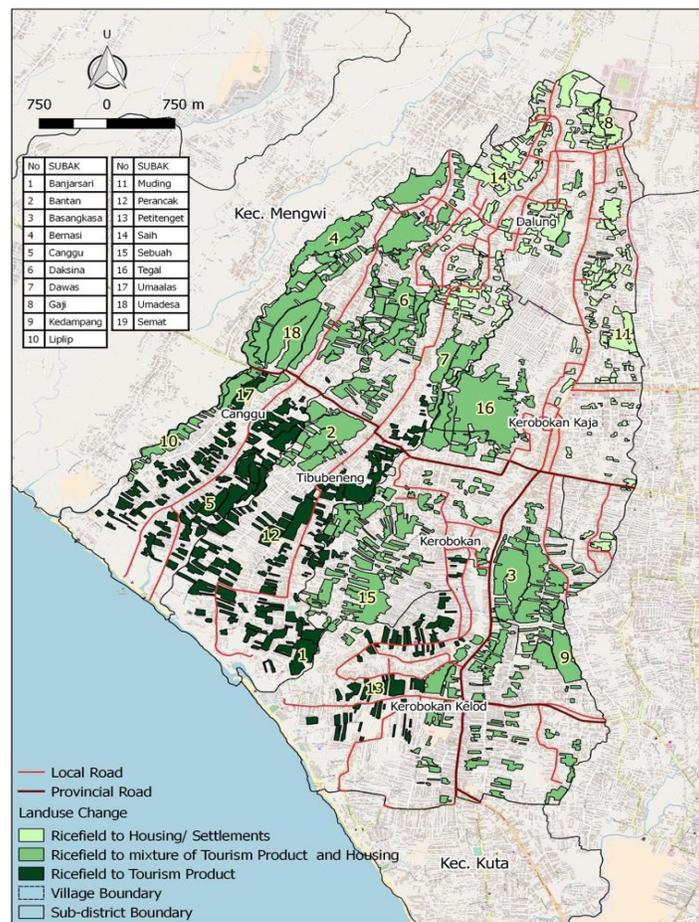
In 2012 the total area of subak in Northern Kuta Tourism Area was 1,500.26 Ha. After five years passed, the subak area was reduced by 508.86 Ha or if divided equally each year, a reduction that occurred about 102 Ha / year. The subaks that underwent the most changes in space

function until 2017 were Petitenget (49%), Muding (51%), Banjarsari (48%), Perancak (51%), Semat (40%), Canggu (51%), Umaalas (60%), Gaji (42%), and Saih (37%). The function of petitenget subak room, Banjarsari, Perancak, Semat, Canggu, Umaalas, tends to change to the development of tourism products. As for Subak Muding, Gaji, and Saih, the changes are skewed towards housing development and public facilities.

Subaks whose space is experiencing a trend of changing functions into tourism is mostly located in Kerobokan Kelod, Tibubeneng, and Canggu villages. The three villages are relatively close to Kuta and Legian as the center of the tourism area and also all three have beaches as tourism capitals. Meanwhile, subaks that tend to be turned into housing are located in Kerobokan Kaja Village and Dalung Village. The choice of the two villages as a residential development

location because of the considerable distance from the tourism center, so that the land price is relatively more affordable compared to other villages in the Northern Kuta Tourism Area. Although quite far, but the level of accessibility to the tourism center is quite high (Fig. 2.).

In addition to the reduced quantity of space, subaks that undergo function changes indicate scattered formations. The scattered form resulted in subak as a traditional water governance-based agricultural institution experiencing many barriers and limitations in water distribution. The development of tourism and housing products has resulted in irrigation channels being transformed into drainage and other technical irrigation infrastructure. This condition can increase the acceleration of changes in the functioning of agricultural space in the future, so that it has a large effect on the existence of subak in The Northern Kuta Tourism Area.



**Fig. 2. Alteration of subak land-used**  
Source: [1]

**Tabel 1. Shrinkage of subak area**

Village	Subak	Area (Ha)		Change (Ha)
		2017	2012	
Kerobokan Kelod	Basangkasa	72,63	101,74	-29,11
	Kedampang	76,48	101,98	-25,51
	Petitengget	38,71	76,45	-37,74
Kerobokan	Sebuah	98,31	148,69	-50,38
Kerobokan Kaja	Muding	38,52	78,94	-40,42
	Tegal	66,57	76,42	-9,84
Tibubeneng	Banjarsari	31,42	60,34	-28,92
	Bantan	47,61	57,93	-10,32
	Daksina	45,85	58,95	-13,10
	Dawas	22,13	26,52	-4,39
	Perancak	35,38	72,66	-37,28
	Semat	43,80	72,77	-28,98
Canggu	Canggu	74,64	152,99	-78,35
	Liplip	25,57	29,22	-3,65
	Umaalas	13,34	33,51	-20,17
	Umadesa	77,49	82,55	-5,06
Dalung	Bernasi	71,74	88,45	-16,72
	Gaji	28,27	48,86	-20,59
	Saih	82,96	131,29	-48,33
		991,40	1.500,26	-508,86

Source: [1]

#### 4.2 Spatial Utilization Patterns in Northern Kuta Tourism Area

Based on the pattern of space changes that occur in the Northern Kuta Tourism Area, it can be mentioned that the closer to the tourism center and supported by the tourism resources, then the existing agricultural space tends to turn into tourism products. And on the other hand, the trend is that agricultural space is massively transformed into housing with all the facilities involved. Fig. 3. showing the division of space in Northern Kuta area follows a concentric pattern with the main utilization for tourism, housing, and the mix between tourism and housing. The concentric pattern that occurs follows the process of suburbanization from the center of tourism development to the suburbs. In addition to changes in agricultural functions, space changes are also seen on a microscale, namely the homes of residents who are on the main path of the movement of tourism into commercial facilities. Not only spatial changes, the process of suburbanization also affects the social and cultural communities of the local community. The observed socio-cultural changes of society include: the transition of livelihoods [13] from agriculture to service, lack of agricultural regeneration, adaptation to daily congestion, and the migration flow of the migrant population.

Various spatial and socio-cultural changes that occurred in The Tourism Area of Northern Kuta are increasingly making subak marginalized. In the end if there is no synergy with tourism as a suburbanization force then it can be certain that subak in Northern Kuta Tourism Area is getting weaker and disappearing its existence.

#### 4.3 Typology and Competition of Water Actors in Northern Kuta Tourism Area

In addition to the emergence of the phenomenon of spatial change, Northern Kuta area also faces challenges related to the dynamics of water utilization by actors based on their respective interests. Based on the study, there is at least a special typology when reviewed from the aspect of power /access to water and the status of the lifestyle. Based on the aspect of his power over water there are two types of actors, namely dominant actors and subordinate actors. The dominant actors are people/groups/institutions that have direct access to water due to their power, can be based on formal or material legal. While the definition of subordinate actor is a person / group / institution that is hegemony by the dominant actor because of the lack of power possessed so as not to have direct access to water. Based on status and lifestyle, there are two types of actors, namely internal actors and

external actors. Internal actors are people/groups/institutions that have a status as indigenous or who have long settled in Northern Kuta area and have strong ties based on genetics, cultural, and local religions and have a sacred and functional view of water. While external actors are people / groups / institutions originating from outside Northern Kuta area who are immigrants because they have certain interests, they have a functional and generally secular view of water. Table 2. shows the typological matrix of water actors in Northern Kuta Tourism Area.

**Tabel 2. Typology of water actors in Northern Kuta Tourism Area**

Actor	
Power/access to water	Status
Dominant	Internal
Subordinat	External

The composition of water actors, which in this study is termed "water stakeholder", to the extent that it can be identified consists of: (i) government; (ii) tourism entrepreneurs; (iii) subak/local communities; (iv) tourism workers; and (v) migrants.

Internal actors are local communities and Subak have relatively limited access to water in the context of its use for agricultural and household purposes, because water power is dominated by external actors (governments and tourism entrepreneurs). As an actor who has the role of regulation of water legally formal, the

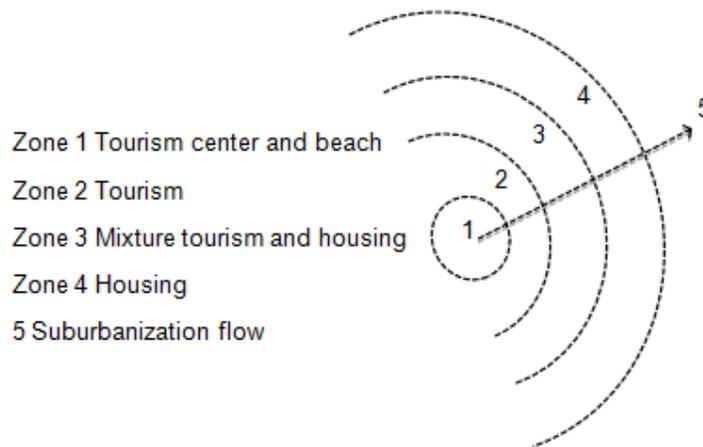
government has the strongest position. In addition, the other dominant actors are tourism entrepreneurs.

**Tabel 3. Composition of water stakeholders in Northern Kuta Tourism Area**

Actor	
Internal	External
Local communities	Government
Subak	Tourism Entrepreneurs
	Migrants
	Tourism workers

Contemporary Bali is which mainstreams the tourism as a leading sector. This is what encourages the government's policy to further emphasize investors as strategic partners in order to accumulate economic benefits from the tourism sector. This condition spawned another powerful actor in the context of power over water: a tourism entrepreneur. The government's collaboration with entrepreneurs makes the two actors the water elite. These elites make water management in Northern Kuta an exclusive area, which compresses the participation of other actors in water management in the region.

The position of the local community and subak is increasingly being pushed by other external actors, namely migrants and tourism workers. Migrants in this context are external actors who enter and live permanently (settled) into the Northern Kuta Area and live-in residential neighborhoods. This means that there is a



**Fig. 3. Spatial utilization patterns**

Source: [1]

contestation in water utilization when it should be distributed to residential environments. Not to mention other external actors, namely tourism workers who are also starting to enter and live into the area, albeit with a semi-settled lifestyle. This group is generally *indekost* or renting a house collectively. This certainly adds to the burden of water use, which has implications for the weaker local communities and subak access to water.

In each zoning as described in Fig. 3, it has an actor composition that appears based on its importance towards water utilization, as seen in Table 4.

It appears that subak's position in each zone is almost dominated by external actors. This should be a concern by all stakeholders, especially the government if it is still a concern for the existence of subak.

The implication of the dominance of external actors in the realm as a whole is the shift of space functions in the Northern Kuta Region from agricultural functions to cultural functions. This does not mean the entire Region has transformed, but there is minimal transposition of the role of actors in each zoning. As seen in Table 4 that almost every zoning subak position as a subordinate actor (except in Zone 2), it must also share dominance with tourism entrepreneur actors), this indicates the urgency of subak actors in the realm. The dominant discourse that builds is more skewed towards tourists, given the composition of the dominant actors who exist in the realm (government, tourism entrepreneurs, migrants, and tourism workers). Although not

necessarily these dominant actors have an intimate relationship, but all the differences that exist can be united in the name of touristic interests.

#### 4.4 Transformation of Northern Kuta Tourism Area Function

The transformation of space function from agrarian function to cultural function of service that occurs in Northern Kuta Tourism Area can be seen from 3 indicators, specifically: changes in road function, changes in irrigation function, and changes in actor behaviour. This study will focus on zones 1, 2, 3, and 4, with stressing mainly in Zone 2, with this consideration only on zoning that relative subak actors exist and become an ideal representation of their struggle in order to maintain their existence.

The change in road function in Zone 2 is seen with the rise of modern road construction. Here there are two types of roads, such as: traditional (agrarian) and modern (touristic) streets. Each has different characteristics reviewed from its shape, function, and meaning.

While the change in the function of subak irrigation is seen by the phenomenon of "subak's deirrigation", is the process of slowly shutting down agrarian practice by transfer of agricultural land functions and transfer of rice field irrigation function. It becomes a concern when this process is not fully performed by external actors only, but in some cases performed by internal actors, for some reason. There are several ways in the framework of subak's deirrigation, such as:

**Tabel 4. Composition of actors based on zoning in Northern Kuta Tourism Area**

Zone	Interests in water	
	Dominant actor	Subordinat actor
1	Government, tourism entrepreneurs	Subak
2	Tourism entrepreneurs, subak	Tourism workers
3	Tourism entrepreneurs, migrants	Subak
4	Migrants, tourism workers	Subak

**Tabel 5. Composition of actors based on zoning in Northern Kuta Tourism Area**

Zone	Transformation of space functions		
	Road function	Irrigation function	Actor's behaviour
1,2,3,4	The change of shape, function, and meaning from "agrarian road" to "touristic street"	Deirrigaziation of subak	Mimesis, hampered regeneration

**Tabel 6. Change of road function in Northern Kuta Tourism Area**

Type of road	Characteristics		
	Form	Function	Meaning
Traditional (agrarian)	<ol style="list-style-type: none"> <li>1. Main Street or Village Road; is an elongated field of land that is compacted, relatively wide, access for people from home to rice fields or other gathering places, as well as outside the village</li> <li>2. Pematang Road; is an elongated field of soil that borders one rice field to another.</li> <li>3. Telajakan; a piece or part of a highway or village road in front of or next to the yard of the house, including its own road, sewer and "senderan" and others</li> </ol>	Accessibility of agrarians for economic, social, cultural, and religious interests	Sacred, Non-Anthropocentric (shared space throughout the ecosystem), and Economically-Productive
Modern (Turistic)	<ol style="list-style-type: none"> <li>1. Public Roads: is a land transportation infrastructure built by the state as part of the national transportation system</li> <li>2. Exclusive Road: a piece of land intended for private accessibility, can be based on individuals or groups/communities</li> </ol>	Contestation space accession of actors based on their own interests	Secular and economical-turistic

**Tabel 7. Behaviour change of internal actor in Northern Kuta Tourism Area**

Actor	Behavioural practices		
	Permissive	Mimesis	Subak Degeneration
Farmer/ Subak	<ol style="list-style-type: none"> <li>1. The practice of breeding against the development of agricultural land transfer, economical transactional practice of agricultural land (trade/lease)</li> <li>2. Practice of neglect of the phenomenon of changes in irrigation and waste disposal function</li> </ol>	Non-agrarian activity impersonation practices: building tourism facilities on their farmland (self-managed or contracted); start engaging in service activities (guides, security, stalls, etc.)	The practice of freeing up professional choice to his family, something that seems democratic but is actually based on logic of submission to industrial pragmatism

#### 4.4.1 Change irrigation channels as sewers

This phenomenon generally occurs in places that are crowded tourism facilities. This change in irrigation function did not attract the attention of actors who practiced tourism. This can be understood because with their non-agrarian mindset, they tend to neglect and consider the phenomenon to be commonplace. In fact, they cannot tell which irrigation lines with sewers. This practice of neglect is compounded by the

permissiveness of subak, since the space is not part of their power.

#### 4.4.2 The practice of disposing of garbage on subak irrigation channel

One of the next modes in order to turn off subak is to practice dumping garbage on irrigation channels. The practice seems random. However, if reviewed more deeply it appears to be a patterned practice. Generally, this practice is the

initial phase of the next practice, namely the construction of tourism facilities. If the volume of garbage accumulates, and there is a remitting, then the waterway will be cut off, or at least turn in the direction. This becomes a kind of legitimacy for actors who are interested in building buildings according to their interests. However, any physical development (outside of buildings related to agricultural functions) is a counterproductive practice. This resulted in the onset of the practice of shutting down each other between systems, as it is not a unified ecosystem.



**Fig. 4. Irrigation turn in to drainage**



**Fig. 5. Garbage piled up on the irrigation channel**

#### 4.4.3 Cut off the waterway by construction of buildings

The second and third ways look interconnected. Although it is not always the practice of building tourism facilities along this path, it needs to be watched as a phenomenon that is not coincidental. This could be an early warning bell, and there needs to be further anticipation for subak actors and other actors interested in the existence of this traditional Balinese institution. Subak became scattered because of this practice of deirigation.



**Fig. 6. Construction process of tourism facilities blocked water flow**

Changes also occurred in the behaviour of agrarian actors in Northern Kuta Area. They are included in the "Tourism-Trap", becoming a dilemma in a restless situation of integer: between maintaining rice fields or selling them.

The compilation of road function changes, changes in irrigation function, and changes in the behaviour of subak actors led to a change in the function of the space in The Northern Kuta Area. The function of the originally agrarian road, wrapped in its sacredness, stripped down to secular when it was transformed into a more productive-turistic modern road. That is, the road becomes a space for pragmatic economic transactions of actors as well as ideological contests of actors. The path becomes anthropocentric, based only on the logic of human needs an-sich, thus fading the respect of belief in the times (physical and metaphysical). Animals that were previously free to cross their "natural routes", are now hampered and must adjust to their instincts to avoid being hit by motor vehicles, or even expelled by humans for being considered disruptive/dangerous. Luckily, the practice of glorifying the road as a "metaphysical route" is still sustainable today. That is, the village of the road does not entirely succeed, only appearing in the mindset of external actors, especially those who have no respect for the local culture.

Next to be aware is the phenomenon of subak deirigation. Some practices need to be observed, such as the rise of garbage disposal and the construction of tourism facilities. There is a pattern that related to the two practices, which led to a delay in the rate of water because it was inhibited by both practices. The implication is that subak land is increasingly scattered, with the growth of new ecosystems in their agrarian

realm. The emerging practice of tourism is not built on agrarian logic, so in many ways it creates a system that explores each other between agriculture and tourism.

Compounded by the emergence of the phenomenon of deregeneration of subak actors, if the final blow to the sustainability of subak in the future in Northern Kuta Area. Subak's senior generation seems less optimistic about his work as a farmer, and is less likely to transform agrarian knowledge into his younger generation. They practice permissiveness towards counter-agricultural activities, in fact doing mimesis (impersonation) practices of the economic rhythm of tourists. The younger generation of subak in Northern Kuta area experienced agrarian disorientation, did not have a strong figure to be modeled / idol. Make them celebrate more turistic euphoria, which if left behind will bring subak to the last breath of its existence.

The context of the transformation that took place in Northern Kuta area is more dimensional space. That is, empirically can be proven by the change in the function of the space that was originally agrarian slowly moving towards the function of the touristic service room. What is interesting is that this change still carries cultural variables, which means the space of Northern Kuta as a realm consists of three main variables: agrarian, cultural, and tourism. Between and the agricultural variables and tourism (service) are each tied to cultural variables (agricultural and cultural services), so it appears that the cultural aspect becomes melting-pot (meeting point) between the two aspects.

Theoretically, the cultural process in question is the process of adjustment in order to produce a new habitus between actors so as to become a collective habitus in the realm. Thus, in the realm of Northern Kuta Tourism Area, the change in the function of space is a representation of the structural process that is awakened among actors. These shared consciousness creations are not currently built collaboratively, based on mutual waiting and suspicion. It is feared that the failure to build this collective consciousness will create the phenomenon of "hysteresis"[14], the inability of actors to create suitable habitus in a new realm/ that has changed. Synergistic efforts are needed between the agricultural sector and the tourism sector so that there is a collective habitus of actors in the Northern Kuta Tourism Area, namely habitus based on the logic of agrarian-turistic duality. This habitus is an ideal

representation of the combination of the two cultures. Thus, the Northern Kuta Area is not a "competition space" for actors, but it is a "competence space", strengthening each other based on greater common interests.

## 5. CONCLUSION

The spatial transformation that occurred in the Tourism Area of Northern Kuta, Bali was triggered by the massif development of tourism product components, especially accommodation and restaurants. The change is related to the function from the agrarian cultural space to the service cultural space. There is penetration from the central area to the suburbs. The phenomenon of regional change from rural character with agrarian tradition base to urban character with tourism industry base has a negative impact on subak existence. Empirically, there appears to be a pattern of distribution of subak scattered. [15]. This is partly due to the actions of actors, both internal and external in the region termed deirrigation subak. As far as it can be identified, the deirrigation subak occurs in 3 ways, such as: make irrigation channels as sewers, practice of disposing of garbage on subak irrigation channels, and 3. Cut off the waterway by construction of buildings. Farmer Subak as an internal actor is relatively dominated by external actors. They experience what is termed a tourism trap, a condition that carries a dilemma regarding their ownership of agricultural land: whether to keep managing it or selling it. This condition is further exacerbated by the emergence of the practice of subak peasant actions, such as: permissiveness, mimesis, and subak degeneration.

If this phenomenon continues, it is feared that the existence of subak in Northern Kuta Tourism Area will continue to shrink, even become gone. Northern Kuta is an area where land use was originally for agricultural cultivation. In accordance with tradition, agriculture in Bali in general and included in this area is managed in subak institutions. Because subak is recognized as a world cultural heritage by UNESCO, the unique culture of Bali's agricultural management is growing as a base for tourism attractions, especially in the countryside. But different things seem to be in the development of tourism in urban areas and even the suburbs. The presence of subak in the area is increasingly threatened due to the development of tourism and supporting facilities. The same thing is also seen in Northern Kuta Tourism Area as a suburb.

The area of subak in the area, the longer the shrinkage means a lot.

Over the past five years, most of the agricultural space changes have been used for the development of tourism and residential products. The change is caused by the suburban process, namely the penetration of tourism industry development from the regional centers of Kuta and Legian to the suburbs. Suburbs where tourism products are growing tend to be closer to the centre of the region. While increasingly away from the center of the region, the changes that appear dominated by the use of housing. The tendency to change space forms a concentric pattern that follows the suburban process with the path of tourism movement as its medium. In addition, it was also found that the change of agriculture into the location of tourism and residential products creates scattered space formations. Scattered space shape can increase the acceleration of changes in the function of agricultural space. It can be stated that suburbs with tourism as its driving force result in the existence of subak weakened and more likely to disappear in the future.

In order to strengthen the existence of subak in the flow of suburbs, a strategy is needed that is able to match (synergy) between agriculture and tourism in the suburbs. There are recommendations that are able to build agricultural synergy with tourism, among others: maintaining the tradition and implementation of agricultural rituals in Subak Temple as a form of breeding of subak; creating agricultural-based recreational attractions to develop agricultural value chains; involve subak elements (with its management called "pekaseh") in the licensing of tourism and housing product development; limit visits by directing the development of small-scale tourism.

At this point, synergy of actors is needed, in this case water stakeholders in the Northern Kuta Tourism Area. Each party needs to build productive relationships to maintain subak's sustainability. Internal actors who are increasingly hegemonic by external actors in terms of access and utilization of water in addition to harming the continuity of the existence of Subak, is also feared to ward off hegemony with anarchist actions. It is necessary to create a water stakeholder forum that brings together the actors as a space for perception and production of agreements so that open conflicts will be relatively biased muted. To create the

effective water stakeholder forum requires further research. Separating local and subak communities with water will create cultural outing conditions because water for Balinese Hindus is not just a secular function but means sacred.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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