Planning of Agro-Tourism Development, Specific Location in Green Open Space Sarbagita Area, Bali Province

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Abstract. Tourism development has a negative impact on agricultural land in Bali, resulted in the transfer of rice field of 800 ha/year. Subak rice field area as a world cultural heritage, requires conservation strategy, increasing economic and environmental value, through integrated agriculture development with tourism. Tourism destination planning in the form of tourist destination (TD) and tourism object (TO) by raising local genius, at specific location, is expected to preserve nature and culture, as well as the economic value of the region. Research Methods: (1) identification of agrarian cultures, (2) field survey, (3) mapping of site specific TD/TO plans, and (4) compile documents of agro-tourism road map based on local genius. Seven subak areas in the green open space area have the potential to develop new TD/TO, namely: (1) Gedon2Subak in Tanah Lot area, is developed for the preservation of agriculture, the implementation of the zoning plan of the sacred, madya and nista areas, (2) the Kerdung and Penatih Subak areas, developed for urban farming in Denpasar City, (3) Cangi south Subak area, built for agro-tourism plasmanutfah banana and Cemagi Let Subak area developed agro-tourism food crops and horticulture, (4) Erjeruk Subak area, developed tourism plasmanutfah coconut.

Keywords: Tourist Destination, Tourism Object, Local Excellence, Agro-Tourism Zoning Plan

1. Introduction

Sarbagita area, covering the City of Denpasar and three districts, namely: Badung Gianyar, and Tabanan, designated as a national strategic area of tourism in Bali. These four areas are a very rapid area of tourism development and infrastructure of accommodation facilities. As a result, there was a change in the function of rice field in Bali Province 1000 ha year -1. The main cause of land supply for non-agricultural development in Bali Spatial Plans (SP), generally irrigated rice fields of Subak system [1].

The positive impacts of agro tourism are: conserving plasmanutfah, nature and agrarian culture, as well as increasing the value of regional ekonowi. Determination the strategy of determining and controlling the function of land to anticipate and mitigate the negative impact of tourism in Bali 2014-2015, produces Subak sustainable land zoning, buffer and converted, and draft of Local Regulation on Sustainable Land Agricultural Protection (SLAP) [1]. The results need to be continued with research
that can improve the economic value of SLAP area through integration of agriculture with tourism and able to control land conversion, such as building agro-based tourism based on specific locations.

There is a continuing conflict of interest in land use between agriculture and tourism. In Sarbagita area, there are center of natural and cultural tourisms, such as: agrowisata in Soka, Bedugul area, and Jatiluwih Tabanan regency. Badung Utara area. Kopi Luak and Sekar Bumi in Gianyar Regency. Agro tourism that developed only in Jatiluwih which is designated as world cultural heritage area (UNESCO, 2012) [2], Ceking Village in Gianyar and in Kertalangu Tourism Village in Denpasar. Agro tourism has been widely developed in other areas, such as in Malang, Bogor, North Sumatra and other areas of specific location with certain types of plants. The development is very rapid, considering the needs of people in downtown who need fresh oxygen. The results of field observations in Bali is indicating that the growth of integrated tourism activities with agriculture. Ceking tourist attraction that enjoys the natural beauty of terracing rice fields, coffee mongoose, sekar bumi in Gianyar regency. Kertalangu Tourism Village is in Denpasar City, Agro tourism in North Badung, and in Tabanan Agrowisata in Soka and Jati Luwih and Soka areas. The rice fields in Jatiluwih is unique with terrrace form, it combines with fresh air, are the DTW attraction set by UNESCO in 2011 as a cultural heritage. Nevertheless, the cultural attractions of agrarian and cultural attractions make the supporting material of traditional ceremony (banten) not yet developed in all agro tourism in Bali.

2. Material and Methods

Research location is in Sarbagita area (Denpasar City, Badung Regency, Gianyar Regency, and Tabanan Regency) Bali Province. Especially subak areas that has been designated as subak sustainable and potentially developed as a tourist attraction or tourist destination. Each municipal district was selected a subak region with high accessibility to be planned as agro-tourism (Figure 1). Materials and tools used include WorldView satellite imagery in 2015, a set of computers and software Arc-GIS 10.2.
3. Results and Discussion

3.1. Inventory of Agrarian Culture in Subak Rice Field as Tourism Cultural Attraction of Agriculture

Subak Institution in Bali has an organizational structure headed by a Pekaseh. Pekaseh's task is to regulate and supervise the distribution of irrigation water and to lead the religious ceremony (ritual) of subak. A pekaseh is assisted by a Petengen who acts to help Pekaseh perform daily duties related to farming activities.

Subak generally manage irrigation and subak land as the main producer of paddy rice. Subak in Bali also has an additional function as the executor of ritual activities (upakara). This activity makes the subak in Bali very distinctive and different compared to other agricultural organizations in other areas. The subak system in Bali is based on the *Tri Hita Karana* concept, which means harmony between human and God, with fellow human beings and the environment. The rituals performed in Subak are held in Pura Subak (Pura Bedugul), although some are carried out in the upper reaches of the canal and in each rice field. The existence of Pura Subak will always be related to one of the duties and functions of subak in Bali that is ritual (Upakara) which must be continuously done in Pura subak. Rice Subak in Bali generally grows rice with two harvest time, while for three times planting one with rice-rice-palawija pattern. Rice fields that have twice the harvest time of the year generally grow local rice or commonly called Balinese rice.

The result of inventory and description of subak in Sarbagita area is based on accessibility, integration with tourism object, and potential of possible location that can be developed. Subak Pekaseh response obtained seven Subak [2,3], namely: (1) Subak Kedung, Pedungan Village, (3) Subak Cangi Selatan, Sembung Village, Abiansemal Sub-district, Badung Regency, (4) Sebak Cemagi in Mengwi, Badung, (5) Subak Gadon 2, Beraban Village, Kediri Sub-district, Tabanan District, (6) Subak Erjeruk Pantai Lebih, More Villages, Sukawati Sub-district, and (7) Subak Abian Petak in the village of Payak, Payangan Gianyar Regency. The location and the seventh position of the subak are presented in Figure 1.

The process of conducting the farming business of rice field subak in Bali performs a series of activities by using ceremonial means (Upakara) which goes synergistically with the process of land preparation and planting rice / palawija activities. Pekaseh Interview conducted on July 2016, Documented, on July 2016, the procession of adat / religious (upakara) conducted within the Subak region there are 13 ceremonial processes, namely: (1) *Mapag Toya* (ritual petition for grace from irrigation water), (2) *Matekap* (plowing), (3) *Ngewiwit and nandur*, (4) *Ngewiwit* (ritual begins to plant rice), (5) *Nandur* (planting), (6) *Nyaab Toya* (ritual begging grace from irrigation water), (7) *Biukukung* (ritual when rice starts Contained / bunting), (8) *Mesaba Gede* (ritual at the time of harvest), (9) *Mesaba Alit* (ritual at the time of rice harvest in each field), (10) *Manyi* (harvest), (11) *Nini rice* (Ritual after harvest), (12) *Mebanten Rice* (ritual when inserting rice into barns), (13) Storing to barns.

Traditional post-harvest activities include: After harvest in paddy fields, rice is brought to their respective homes, The tool used is sanan, where the tool is made of coconut wood (seseh) and at the ends are made taper. The way to carry it is to be carried (negen) from rice fields to their homes. Further in the dry to dry milled, cleansed from straw and stored in the barn. Rice will be taken from the granary to taste for food for several days, followed by pounding rice (nebuk) to get rice. The traditional process of pounding rice by using "dimple" as the base of the collision made of stone or wood perforated and "lu" as a tool pounder made of wood, with the end duberi bracelets of iron. When it becomes rice will be cooked traditionally, using firewood in the traditional kitchen.
3.2. Subak Rice Field Zoning

Subak in Bali other than is as regulator of irrigation system and as preserver of agriculture culture in Bali, it also saves potency as agrotourism agri-tourism area) with its natural and cultural potency. The purpose of the existence of agrotourism in addition to supporting economic subak area, as well as a supporter of nature conservation and rice fields Subak.

It is said to be a supporter because nature is the power of tourism subot agrotourism. As the purpose of this research is to accelerate other than that. This research took four subak locations in Sarbagita area (Denpasar, Badung, Gianyar and Tabanan), namely:

1. Kerdung Subak, in Pedungan Village, District South Denpasar, Denpasar City.
2. Cangi Selatan Subak, in Sembung Village, Abiansemal Sub-district, Badung Regency.
3. Gadon 2 Subak, in Beraban Village, Kediri Sub-district, Tabanan District.
4. Erjeruk Subak, in District Sukawati, Gianyar Regency.

Subak alternatives considered for agro tourism are:

1. In Denpasar there are four subak, three in Penatih area (Anggabaya, Umalayu and Umadesa) East Denpasar subdistrict and one subak (Kerdung) in Pemogan Village, Denpasar Selatan District.
2. In Badung regency there are two Subak (Cemagi Let, in Munggu Village and Subak Cangi Selatan in Sembung Village of Mengwi Subdistrict.
3. In Tabanan district one subak (Subak Gedon 2) in Beraban village Kediri district.
4. In Gianyar Regency there are two subak (Petak, Petak Village, Gianyar Subdistrict, and Subak Erjeruk in Sukawati Village) Sukawati Subdistrict.

The agro-tourism zoning plan is presented in Figure 2 for urban agriculture agribusiness in Kerdung Subak, Denpasar City. Figure 3 for banana agro-tourism in Cangi Selatan Subak, Badung regency. Picture 4 for Figure 5 for agro-tourism of the sacred area in Gedon Subak2, in Tabanan District. These four subak have excellent accessibility to visit, because they are located in the tourist route: Kuta-Sanur-Gianyar, Kuta-Tanah Lot, Denpasar-Sangeh-Bedugul. Similarly, these locations are designated as green open spaces or areas of agricultural land. The development of agro ecotourism in subak will be able to preserve the nature and agrarian culture. It also triggers the development of an orange economy, which is a culture-based economy and local wisdom. The flowers in the main / sacred zone are indispensable for religious ceremonies, and coconut and banana are always needed for banten (traditional ceremonies and angama).

![Figure 2. Map Plan zonasi agro urban tourism agriculture agribusiness Kerdung Subak, Denpasar City](image)
Source: Data Analysis, 2016

**Figure 3.** Map of zonation plan of banana agro-tourism in Cangi Selatan Subak, Badung Regency

Source: Data Analysis, 2016

**Figure 4.** Map of Zoning Plan of Coconut Agro Tourism, Subak Erjeruk, Pantai Purnama, Sukawati, Gianyar regency
Figure 5. Map of Subak Gedon 2 zonation plan for the implementation of Tanah Lot Temple area: main zone, middle zone, and nista zone in Kecamatan Kediri, Tabanan District

Agro tourism for coconut and banana do not yet exist in Bali. Both of these plants are multi-purpose and multi-function tropical plants from all parts of the plant. The coconut ecosystem is growing very well by the beach. Therefore it is very suitable to be developed in Subak Erjeruk (Purnama Beach). Bananas also grow well at <500 m altitude from sea level, very suitable to be developed around Sangen tourism object. Unlike agro ecotourism in Denpasar City, it is necessary to diversify agriculture, in the form of urban agriculture that combines agriculture with hobby. Such as combination of rice field with jogging tract, fishing pond, rice mina, fish pond, flowers and horticultural crops supporting tourism.

Vision, Mission, Goals and General Goals

Agro tourism in the Sarbagita area in accordance with the results of the study [4,5] are presented below.

3.3. Vision, Mission, Goals and General Goals

Agro tourism in Sarbagita area

Vision:
"The creation of subak bali tourism object based on farming communities and WebGIS by raising local wisdom, superior, competitive, and increase the economic value of the region"

Mission:
1. Realizing land resource information system (SIDL) and supporting road supporting map of agro tourism in specific location.
2. Increasing the economic value of subak area through increasing production and quality of agro-tourism supporting products based on tri mandala (holy zone, madya, and nista).
3. Preservation of subak as a cultural heritage by increasing the value of environment, agrarian culture and orange economy.
4. Realizing new agro tourism object in Sarbagita area and information based on Web_GIS (www.wisatasubakbali.com) with mengangangkat local wisdom.
5. Interwoven helmet cooperation (subak community, government, academics, and tourism practitioners).

Aim:
1. Establish SIDL and agro-tourism support roadmap on GIS-based location-specific.
2. Increasing the economic value of subak area through increasing production and quality of agro-tourism supporting products based on tri mandala.
3. Preserving Subak as cultural heritage duania, environmental value, agrarian social culture, and orange economy.
4. Building a new agro tourism object in Sarbagita area and information based Web_GIS (www.wisatasubakbali.com) with raise local wisdom.
5. Interwoven helmet cooperation (subak community, government, academics, and tourism practitioners)

Target:
1. SDL documents and land use zoning plans in accordance with agriculture-based tourism potentials of GIS information.
2. Increased economic value of subak region through increased production, and quality of plant flowers (sacred zone), plasmanutpfah paddy rice (middle zone) and integrated agriculture: mixture of food crops with livestock (zone nista).
3. Lestariiinya subak as a natural conservation area, agrarian social culture, preservation of rice field plasmanutfah, banana and coconut, environmentally sustainable agriculture.
4. The realization of new tourism objects Dewi Sri, banana and coconut plantation, and urban agriculture based on Web_GIS, by raising the local wisdom of Bali (agrarian cultural attraction) with www.Pariwisatasubakbali.com.
5. Interwoven helmet cooperation (subak community, government, academia, and tourism practitioners).

4. Conclusion
Potential tourist destination (DTW) in four subak that can be developed in Sarbagita area (Denpasar, Badung, Gianyar and Tabanan) seven subak areas, namely:
a. City Dempasar two subak, namely: Subak Kerdung planned to be developed for Agroekowisatawisata Tanaman Pangan dan Hortikultura located in the route Kuta / Nusadua-Sanur / Denpasar).
b. Badung regency two subak, namely: Subak Cangi Selatan planned: Agrowisata Plasmanutfah Tropical Banana, Sangeh –Bedugul.
c. Tabanan District Subak, Subak Gadon 2, Tanah Lot Area Tabanan regency is planned to develop agriculture culture agriculture Subak system for Tourism Object Various Types of Local and Excellence of Rice to Add Tanah Lot attractions plus).
d. Gianyar Regency two subak, namely: Subak Erjeruk, Purnama beach planned to be developed for coconut plasmanutfah attractions.

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