

A SUSTAINABLE AGRICULTURE DEVELOPMENT IN KEDUNGU RESORT PROJECT, TABANAN BALI

Ngakan Ketut Acwin Dwijendra¹, I Wayan Yogik Adnyana Putra²

¹Department of Architecture, Udayana University, Jl. PB Sudirman, Denpasar, Indonesia

²Department of Interior Design, Sekolah Tinggi Desain Bali, Jl. Tukad Batanghari No. 29, Denpasar, Indonesia
acwin@unud.ac.id¹

ABSTRACT

Economic development of the community through the preservation of the agricultural sector began to decline, seen from the aspect of agricultural land availability and enthusiasm of people to go directly into farmers. What's more is happening in Tabanan regency, which is the icon of rice granary in Bali. Responding to that, the owner and the entire team of Kedungu Resort, designed the masterplan of Kedungu Area with one of its objectives to generate the idea of area design, which is based on the local culture wisdom, especially to maintain and care for the agriculture within the area planning Kedungu Resort. In addition, packaged the farm as a proud host of farmers and their sons and daughters. This paper describes the concept proposed by the author as a designer in the planning of Kedungu Resort area as an effort to develop sustainable agriculture sector in Tabanan regency. To produce the appropriate draft concept, Kedungu Resort is committed to a "triple bottom line" sustainable construction concept that confirms that sustainable and long term progress requires economic development, social progress and balanced environmental performance. As well as some concepts that must be implemented to create a harmonious relationship between humans, buildings and the environment that is maintained; 1) Tourist Engagement in Farming as Economy Sustainable Development; 2) Farmer (Community) Empowerment as Social Sustainable Development; 3) Local Irrigation System (Subak) and Natural Resources as System of Environment Sustainable Development. The work done is expected to be the solution to sustainable development in terms of meeting the need for community and respect for the environment.

Keywords: *sustainable, agriculture, development.*

A. INTRODUCTION

Kedungu Beach attractions are located in Banjar Kedungu, Belalang Village, Kediri District, Tabanan Regency. The beach is black sandy and has a beautiful panorama against the backdrop of a vast green rice field landscape. Kedungu Beach officially became a beach tourism object to support the tourism sector in Tabanan Regency in 1998 based on the Decree of the Regent of Tabanan. So preserving the green rice is very important not only for food security but also to support many things, including tourism. But on the other hand if every look at the green rice fields are only remembered poverty that still ensnare the farmers who plant and care for it so far from the word "prosper" for the farmers. Moreover the entry of investors who only prioritize the financial benefits by building commercial buildings such as; villas and housing on rice fields without regard to the surrounding environment. This in the future will certainly semakain reduced green land which is the agricultural sector, especially in Kedungu, Kediri-Tabanan. So there needs to be a balance between the demand for housing needs (investment) with the

need for food sources in sustainable development. In the concept of sustainable development, it is mentioned that possible policy collisions can occur between the need to explore natural resources to fight poverty and the need to prevent the occurrence of degradation (Sutamihardja, 2004).

Viewed from the tourism sector, sons and daughters of the existing tourist areas, they do not host because of tourism potential in the region more controlled by foreign investors and only a handful of local investors. They are paid only to serve servants, not to be paid because they are respected hosts. So the rice conservation program in Bali designed through Kedungu Resort with the aim of attracting the younger generation of Bali to return to know and love agriculture, even to return to become prosperous farmers. Coupled with the development of a sustainable development concept it is necessary to consider socially and culturally appropriate needs (Fauzi, 2004). Thus, it later became the basis for thinking and challenges for Mr. Effendi Tjoeng, Mr. Boedi Krisnawan as Owner and the entire team of Kedungu Resort to pack the existing agriculture in Kedungu planning area so as to be the proud host of the farmer and his sons and daughters. One of the efforts being

undertaken by Kedungu Resort today and which is becoming one of the answers to the problematic above is trying to conserve the fewer paddy fields and the lower productivity on the island of Bali.

Kedungu Resort design integrates with the three aspect of sustainable development; Environment, Social and Economy, and its relationship with each other. Kedungu Resort is the only Resort in Bali designed with 75% allocation of its owned land to a fully function rice field. This farm is not only a show case window like other resort, but real farm, where local farmers doing farming activities everyday within the resort. The resort designed and built with involvement of local material, people and culture. The agriculture is being conduct with Balinese traditional system. The harvest product will help the economy of the farmer as the resort will buy the rice from the farmer cooperative. Guests staying here will live among the rice field and be taken into the world of agriculture.

This paper describes a study on the impact of development that only prioritizes the benefits for investors in terms of building commercial buildings in rice fields regardless of the surrounding environment. Thus, the solution offered in the concept of designing Kedungu Resort area in Tabanan still retains and preserves local agriculture in Kedungu Resort planning area. The concept of sustainable development is also strengthening the character of Kedungu District Tabanan through local wisdom that is maintained within it. It is expected that the concept of the resulting design can be used as input and consideration for stakeholders in designing commercial area especially in Tabanan, a design that can synergize and reinforce the character of Tabanan as an icon of Lumbung Padi in Bali.

B. LITERATURE STUDY

In this research the problem that arises is the development of the development periodically to meet the needs of the community on land that is the agricultural sector. So that sustainable if this happens continuously will result in disintegration between development with the existing environment. The theoretical basis of why such research needs to be done in relation to the knowledge framework is outlined in indicators of sustainable development and the study of sustainable development innovations.

1. Sustainable Development Indicators

Sustainable development is defined as development that meets the needs of people today without harming the needs of future generations (Wced 1987). Sustainable development aims to improve the welfare of society, to meet human needs and aspirations. Sustainable development is essentially aimed at finding the equitable distribution of intergenerational development in the present and future (Emil, 1990). Development (basically more economic oriented) can be measured based on three sustainability criteria: (1) There is no waste of the use of natural resources or depletion of natural resources; (2) No pollution and other environmental impacts; (3) Its activities should be able to increase useable resources or replaceable resources (Redecon, 1990).

2. Sustainable Development Policy Innovation Review

Innovation is defined as an idea, product, information technology, institutional, behavior, values, and new practices or objects that can be perceived as something newly assessed by individuals or society (Taufik 2008). Innovation emerged as a form of intervention to the development problems that have occurred. More broadly, the failure is not only a mistake in the implementation of the policy, but also at the level of the policy process itself. In line with the above concept, sustainable development targets include efforts to realize the occurrence of: (1) Equity sharing of intergenerational development outcomes; (2) Safeguarding the sustainability of natural resources; (3) Utilization and management of natural resources; (4) Maintaining the sustainable welfare of the people; (5) Maintaining the benefits of development or management of natural resources and environment (Sutamihardja, 2004). Thus, the development and preservation of the cultural environment needs to be linked with the educational process for future generations. So that cultural change involves not only the normative system but also involving the cognitive system (Sutrisna, 1992).

C. METHODOLOGY

This paper is a part of the process of designing Kedungu Resort Area as a Sustainable Agricultural Sector Development Effort In Tabanan District, the method used is Design Method. The stages in which to discuss any issues concerning the design

of Kedungu Resort area can be described in three steps of the design process (Snyder, 1984: 225) as follows:

1. Phase Identification

In the early stages of this design process includes the identification and introduction of Kedungu Resort Area. In this paper the Initial Phase of the design identification of Kedungu Resort area is poured in the background of the project, the formulation of the problem, and the purpose in designing Kedungu Resort area is contained in the introduction.

2. Stage of Preparation

The second stage in the design process is preparation which includes data collection and analysis related to the design of Kedungu Resort area in Tabanan regency. Data collection techniques can be divided into two namely primary data and secondary data. Primary data are data obtained directly through observation, observation and interview. Secondary data is data obtained through literature studies, research results or data owned by others, as well as data obtained via the internet. Data analysis is done by finding the theoretical basis such as understanding the functions of buildings, forms, requirements and space requirements associated with the Planning Area Kedungu Resort. Thus, in this preparation phase, there are various bright spots for problems in the context of designing Kedungu Resort.

3. Synthesis

Synthesis is a series of design proposals that have taken into consideration various social, economic, physical, program, site, client, technology, aesthetic, and design contexts especially about Kedungu Resort in Tabanan. In this stage there are already concepts that become the solution for every problem related to build Resort in Kedungu Area. So at this stage schematic design can be done.

4. Evaluation

This stage is a stage that focuses on evaluating a design concept so that there are various possibilities of design alternatives.

5. Action

The stage of action in the design process involves activities in order to prepare and implement a project.

D. RESULTS AND DISCUSSION

Kedungu Resort is based on Sustainable Construction Committed with the concept of "triple bottom line," which confirms that sustainable and long term progress requires economic development, social progress and balanced environmental performance. The several concepts developed at Kedungu Resort in Agriculture Sustainable Development are:(1) Sustainable Resort Design in Agriculture Engagement; (2) Local Farmer Empowerment and Agriculture Cooperative; (3) Balinese Agricultural Method and Natural Resources Preservation on the Project Development. Based on this concept, sustainable development is established with five "problem targets" as the basis for sustainable development, which will be applied to the Kedungu Resort project. The resort designed and built with involvement of local material, people and culture. The agriculture is being conduct with Balinese traditional system. The harvest product will help the economy of the farmer as the resort will buy the rice from the farmer cooperative. Guests staying here will live among the rice field and be taken into the world of agriculture.

1. Sustainable Resort Design in Agriculture Engagement

The grand scheme of Kedungu Resort design is not only focusing on how guests can enjoy their stay in the resort, but also to provide a sanctuary for guests to join local farmers, to learn and live in sustainable agriculture environment at first hand. From nursery, cultivation, planting, maintenance, harvesting and post-harvest.



Figure 1. Concept Sustainable Agricultural
 (Source: Author, 2017).

The agriculture as the very soul and spirit of the resort project is proven by only using 25% of the total site area for design, which include all buildings, pedestrian, buggy roads, parking, reservoir and other hotel and farm requirement, and let the rest of 75% of the land utilized as fully functioned rice field. We use natural roads within

the site and integrate new path to the existing, to preserve the original condition of the environment as much as we could.



Figure 2. Concept of Resort Area Kedungu
 (Source: Author, 2017).

The resort is not only a place to rest but also provides a place for guests to join local farmers to learn about sustainable agriculture from nurseries, processing, planting, harvesting and harvesting after harvest. The project as a farming place is clearly visible from KDB 25%, only 25% of the area is wake up, while 75% is left to grow naturally as an agricultural area as a place of education, research and employment opportunities to farmers. Rice fields are preserved and preserved naturally and existing roads or circulation are allowed to fit the existing conditions so that agriculture becomes dominant and a very strong soul of the planning of this area that keeps the agricultural paddy field as vocal point.



Figure 3. Concept of preserving the building still preserve the rice fields
 (Source: Author, 2017).

2. Local Farmer Empowerment and Agriculture Cooperative

The core element of tourism in Bali is its Culture, Environment and People. They are one of the reason why tourism flourish in Bali, and also why more resort are being developed. Kedungu Resort ensure that we are not only respecting the culture and environment, we also make sure that we are doing more than just give back to the people, we cooperate together in developing the project. Kedungu Resort empowers local farmers and create Agriculture cooperative called BERSEMI (abbreviation of Besama Sembuhkan Bumi

"Together to Cure the Earth") they help the farming process in Kedungu Resort and the end product will be distributed by the BERSEMI cooperative. We hope this approach inspires the young generation to be aware of agriculture and consider farmer as their proud profession.



Figure 4. Concept of designing by providing a container for social activities
 (Source: Author, 2017).

The local problem faced is that already very rare Bali young people who want to be farmers. It can even be said that they no longer know the farm. The average Balinese farmer is over 50 years old, even 70 years old. They are not poor farmers like most farmers in Indonesia.



Figure 5. Involve surrounding communities in agricultural management
 (Source: Author, 2017).

Balinese farmers are quite capable and decent living, because they have odd jobs as tour guides or become photographers in Bali tourism sector. Even so far, some part of the farming process, they are giving to farm workers from Java island specifically imported to Bali, which of course it greatly reduces the total income of their farm. This is also the long-time concern and concern of Balinese farmers about who will inherit the farm later.



Figure 6. Community Activities From Nurseries, Maintenance to Harvest.
 (Source: Author, 2017).

Kedungu Resort Planning also provides a container for spiritual and wellness activities with yoga venues as well as social and cultural activities of the community. Such a container for offering at the edge of the rice field gives an idea of the hope of a concrete effort to harmonize with nature and blessed results.

3. Balinese Agricultural Method and Natural Resources Preservation on the Project Development

The vast growing development of tourism in Bali indicates there are more rice field being transform into accommodation facilities, such as resorts. The rice field existence will be the key factor in developing the resort. Located in Tabanan Region as the granary of Bali Island, the resort will be having its own miniature system of food security in agriculture.



Figure 7. Concept of designing while preserving the Subak system
 (Source: Author, 2017).

In Kedungu Resort, we rejuvenate land to enhance more harvest production as the food supply for the resort. "Subak", the traditional irrigation method of Balinese agriculture, declared by UNESCO, being preserved as a local wisdom. A Reservoir will be built to support the Agriculture irrigation during dry season, as well for the resort. Local people, nature, materials, culture and tradition are the project's building blocks.



Figure 8. Concept of the five "problem targets" as the basis for sustainable construction
 (Source: Author, 2017).

Kedungu Resort's Agricultural and Tourism Empowerment Program begins with a superior local breeding system, making Kedungu farmers as farmers of the entrepreneurs together with the method of Cooperative BERSEMI to preserve the irrigation irrigation system Subaknya so that the hope of harvest can penetrate two digits ton / Ha or more. Working with local farmers and Subak organizations, the program has been initiated from October last year.

E. CONCLUSION

The background of the planning of Kedungu Resort area is the lack of concern for the investors towards the existing condition and more pursuing financially, thus reducing productive agricultural land to keep producing. As the region with the most rice production in Bali, the design should still pay attention to the natural and artificial environment balance system with the main elements of human, building and environment. Humans as actors and users have a variety of socio-cultural to cultivate buildings and environment in harmony.



Figure 9. Concept Sustainable Agricultural Development Project
 (Source: Author, 2017).

Guided by Sustainable Construction Committed with the concept of "triple bottom line". It can be formulated that some concepts that must be implemented to create a harmonious relationship between people, buildings and the environment are maintained, among others: 1) Involving tourists to get involved in the agricultural sector, among others, learning from the process of nursery, processing, planting, maintenance and harvest post-harvest; 2) The empowerment of local farmers as sustainable development, among others, farmers and communities working together to learn directly by doing a new farming pattern; 3) Making local irrigation system (Subak) as sustainable development system. Kedungu Resort A Sustainable Agricultural Development Project Kedungu Resort design integrates with the three aspect of sustainable development; Environment, Social and

Economy, and its relationship with each other. Kedungu Resort is the only Resort in Bali designed with 75% allocation of its owned land to a fully function rice field.

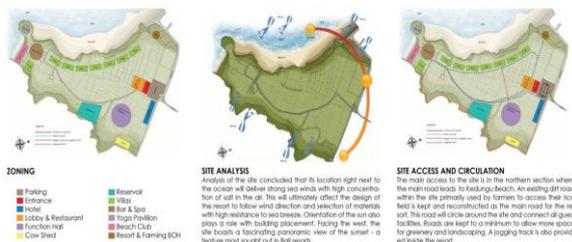


Figure 10. Concept of zoning, site analysis and site access at Kedungu Resort area (Source: author).

Kedungu Resort Planning also provides a container for spiritual and wellness activities with yoga venues as well as social and cultural activities of the community. Such a container for offering at the edge of the rice field provides an idea of the hope of a concrete effort to harmonize with nature and full results blessings. In more detail, the draft concept of Kedungu Resort can strengthen local character while maintaining the agricultural sector.



Figure 11. Concept Masterplan of Kedungu Resort Area (Source: Author, 2017).

Kedungu Resort Master Plan The proposed master plan uses 25% build up area and 75% preserved land as agriculture rice field As a resort, the facilities consist of Lobby, suite villas and suite rooms, restaurant, swimming pool, yoga pavilion and Back of House It also provide the agriculture and local support such as, reservoir as support for agriculture irrigation system, Function Hall for local art & culture space, cow shed, and store for local village Existing dirt road is kept and utilized

REFERENCES

Duerk, D. P. (1993). *Architectural Programming: Information Management For Design*. John Wiley and Sons, New York.

Emil, S. (2005). *The Politics and Economics of Indonesia's Natural Resource*, 1st edition. Budy P., Singapore.

Fauzi, A. (2004). *Ekonomi Sumber Daya Alam dan Lingkungan*. Gramedia Pustaka Utama, Jakarta.

Sutamihardja. (2004). *Perubahan Lingkungan Global; Program Studi Pengelolaan Sumber Daya Alam dan Lingkungan Sekolah Pascasarjana*, IPB.

Sutrisna, S. (1992). *Budaya Keilmuan dan Situasinya di Indonesia Dalam Tantangan Kemanusiaan Universal*. Kanisius, Yogyakarta.

Snyder, J. C. (1984). *Anthony Pengantar Kepada Arsitektur*. Erlangga, Jakarta.

Taufik, T. (2008). *Governance dan Pembangunan Daerah*. Gajah Mada University Press, Yogyakarta.

Patton, V. (1986). *Basic Methode of Policy Analysis and Planning*. New Jersey, Prentice Hall.

Wced. (1987). *Our Common Future*. Oxford University Press, Oxford.