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## Sustainable Heritage Area Management Model Study on Environmental Wisdom in Taman Ayun area, Badung Regency, Bali Province

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### ABSTRACT

Every city has its own unique character, historical and cultural value which is reflected by the existence of several areas within the city that has strong historic and social footprints. Those areas are known well as heritage areas. The main issue that will be focus of the study is the deterioration of heritage area from the aspect of economy, social, and environment. In long term, the degradation of this situation could lead heritage area into its destruction. In facts, not all heritage area is in poor condition. Taman Ayun area, which is located in Badung Regency-Bali, has successfully maintained its physics and social cultural value as a well manage of built environment. This study is using a qualitative approach with descriptive analysis method. The result and conclusion of this research shown that environmental wisdom that is affected by Hindu beliefs with its Tri Hita Karana concept, awig-awig from their traditional village effectively as a management instrument for heritage area in Taman Ayun.

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## INTRODUCTION

Each region has a unique character, history and cultural value that defined by the present of an area that own a strong social value and culture that can be called as heritage area. The issue of the study based on the condition of our heritage area which faced an environment, social, culture and economy degradation. However, not all of our heritage area in bad condition, Taman Ayun heritage area is located at Badung regency is a sample of heritage area that well managed.

Heritage area actually own a social culture value that is known as environment wisdom that is manage and given generation to generation by it's supporting community. Environment wisdom is a process of thought, act and set attitude wisely on observe, harnessing and work over nature as a living area and human life interrelationship. Environment wisdom that run well by society is use as reference for managing heritage area turn out effectively preserve the heritage area.

The people at Taman Ayun area own an environmental wisdom value that is based on religious Hindu belief with Tri Hita Karana philosophy and *awig-awig* (written traditional law) as an instrument to manage Taman Ayun area. This environment value is applied well by Taman Ayun area society. The society is also obidient to *awig-awig* as a managing instrument that effectively preserve Taman Ayun Area.

The purpose of this study is to build a model of heritage area management approach to environmental wisdom which is expected to become an alternative model of the heritage area management to be sustainable both environmentally, socially and economically.

## MATERIAL AND METHODS

This study took locus atTaman Ayun area, BadungRegency, Bali Provincewhich has approximately 64,5 (sixty four point five) hectare consisting of traditional village Mengwi and Gulingan and includes three banjar at Mengwi is banjar Gambang, banjar Pande and banjar Alangkajeng, and three banjar at Gulingan village is banjar Darmayasa, banjar Sedahan, and banjar Munggu. The study approach used in this study is qualitative approach, with descriptive analysis methods. The study population in this study is people in the region Taman

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Ayun, BadungRegency. Determination of the samples was done by purposive sampling method. Furthermore, to get a valid informant then the informant criteria is set as following :1) serve as the person in charge of the management of Taman Ayun area; 2) have experience in managing the area of Taman Ayun (elder / elders). Based on these criteria, set out a number of 16 (sixteen) with eight informants were informants in the village of Mengwi and eight informants were in the Gulingan village. The informant in Mengwi village namely : Mengwi village head officer (*perbekel* of Mengwi village), headman of Mengwi traditional village (*bendesa adat* Mengwi), *kelihan dinas* banjar Gambang, *kelihan adat* banjar Gambang, *kelihan dinas* banjar Pande, *kelihan adat* banjar Pande, *kelihan dinas* banjar Alangkajeng dan *kelihan adat* banjar Alangkajeng. As for the informant who was in the village of Gulingan is: head officer of Gulingan (*perbekel* desa Gulingan), headman of Gulingan traditional village (*bendesa adat* Gulingan), *kelihan dinas* banjar Darmayasa, *kelihan adat* banjar Darmayasa, *kelihan dinas* banjar Sedahan, *kelihan adat* banjar Sedahan, *kelihan dinas* banjar Munggu dan *kelihan adat* banjar Munggu.

## RESULT AND DISCUSSION

### 3.1 General Description of Study Area:

The study region is Taman Ayun area located at Mengwi village and Gulingan village, sub-district Mengwi, Badung regency and located approximately 12 (twelve) kilometers north west of Denpasar city. The existence of Taman Ayun area can not be separated by the presence of Pura Taman Ayun that was built in 1632 Masehi. According to AA.Ngr.A.Wira Bima Wikrama (2013), the eldest son of the 9th king of Denpasar, Taman Ayun temple is a kind of temple with a garden concept used as a place for the whole family ablutions purify the King and the Mengwi kingdom.



**Picture 1:** Taman Ayun study area.

### 3.2 Analysis on Environmental Wisdom:

People at Taman Ayun area have environment wisdom values based on the religious system of Hindu belief which based on the concept of Tri Hita Karana. The value of this environment wisdom is the norm, law, and knowledge formed by religion, communities faith and the experiences inherited by ancestors who eventually formed the local knowledge system that is used to solve everyday problems. Values of the environmental wisdom held firmly and consistently implemented by the people at Taman Ayun is a derived from the concept of Tri Hita Karana that is three causes of true happiness consists of *Parhyangan* (harmonious relationship between man and *Sang Hyang Widi*), *palemahan* (harmonious relationship between humans with the environment) and *pawongan* (harmonious relationship between human and human). This is in line with that expressed by Purba (2006) that human actively cultivate natural resources and manage the environment in accordance with the prescriptions set of cultural abstraction that is their experience in dealing with the challenge, that's what led to today's developing various kinds of patterns of human adaptation to the environment which is sometimes not easily to understand by a third party who has different social backgrounds and cultures.

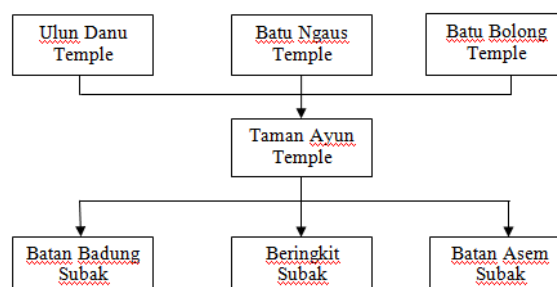
Description of the implementation of the concept of Tri Hita Karana in the Taman Ayun is as follows :

1. Relationship between humans and Sang Hyang Widi (Parhyangan) reflected in religious activities conducted by Taman Ayun area communities through various activities of religious ceremonies, among others: the ceremony *mendak tirtha*, *piodalan* ceremony *anggara kasihmedangsia*, *kapat* full moon ceremony, ritual ceremony *nampeh rare*, ritual ceremony *nampeh nyungsung* and *nangkluk meranaritual* ceremony. Implementation of the religious ceremony is intended as a form of application to *Sang Hyang Widi* so that their crops free from pests and given fertility so that agricultural products productivity increased as well as an expression of gratitude for the gift of prosperity and well-being granted by *Sang Hyang Widi* for Taman Ayun people. Moreover, in the area of Taman Ayun area there is a Taman Ayun temple which is a shrine as a place of worship for Hindus to pleaded to their ancestors in order to obtain welfare and happiness of life.

2. Human relationship with the environment (*palemahan*) reflected the attitude of respect for the natural life. This is reflected in the physical condition of the area of Taman Ayun which is well maintained. Land use or layout used in accordance for its utilization both protected areas for protection functions such as: rice, green lanes, green spaces, river banks, plantations and cultivation area for the function of the area to be developed utilization for cultivation activities such as: building settlements and shrine / pura. Sustainability of Taman Ayun area is closely associated with the interaction between the Taman Ayun temple with subak. Taman Ayun temple is surrounded by water pool and Taman Ayun has a function as a regulator of water for subak Batan Badung, subak Beringkit and subak Batan Asem. Water source for the pond that surrounds the Taman Ayun temple comes from the flow of the river. Taman Ayun people held *mendak Tirtha* ceremony that is a ceremony to invoke rain, resist pests, fertility and abundant agricultural production. To invoke rain, water is taken from Ulun Danu / Batu Bratan while to resist pests water is taken from the Batu Ngaus temple and the Batu Bolong temple, then the water taken from these three temple consecrated for three days at Taman Ayun temple. Water that has been purified is believed to be holy water and then through the ceremony *mendak Tirtha* holy water is distributed to three subak that is subak Batan Badung, subak Beringkit and subak Batan Asem. People at Taman Ayun believe that by doing the ceremony, they will get fertility, abundance and productivity of rice farms exempt from nuisance pests. These trust and believe is makes the people at Taman Ayun area maintain the Taman Ayun temple and Subak and environment area at Taman Ayun. This is in line with stated by Lansing (1993) that the network structure of the temple and Subak has evolved from a process of spontaneous self-organization rather than planning done by expert planners. Further Lansing stated that the emergence of subak network provide increased productivity / yields and increased durability: the ability to face ecological disturbance efficiently. There is a very close relationship between the water temple / subak temple with increasing agricultural productivity where it is a form of complex adaptive systems. It is also in line with stated by Rappaport (1971) that ritual often play an important role in a system of traditional water resources.

3. Human's relationship with other human (*pawongan*) indicated by the presence of Taman Ayun temple used as a gathering place between society and interact with each other for making the offering and held a ceremony that is held periodically and is also used to hold art events. The mutual aid activities (*ngayah*) in conducting the ceremony and manage the environment is a form of the *pawongan*.

The description above is in line with the theory developed by Julian H. Steward (1993) on cultural ecology as a study of the relationship between a particular culture with its environment. The essence of the theory is the result of environmental and cultural mix that proceeds through dialectic, whereby the culture and environment has a major role and influence each other.



**Picture 2:** Interaction between Taman Ayun temple and subak.

In managing and preserving the area of Taman Ayun, the Taman Ayun society using the management tools that is called *awig-awig*. *Awig-awig* is a written traditional law in Bali which contains three main points namely: *Parhyangan*, *palemahan* and *pawongan*. People at Taman Ayun area is hold firmly and perform consistently the rules stated in *awig-awig*. This *awig-awig* is effective in preserving the environment area of Taman Ayun, Badung Regency, Bali Province.

Furthermore, to assess the heritage area management instruments based on the value of environmental wisdom and *awig-awig* need to be consider multiple indicators. According to Dunn (1994) indicators or evaluation criteria consists of five indicators , namely : 1) effectiveness , 2) adequacy ; 3) equity ; 4) responsiveness , and 5) accuracy. The purpose of the assessment against each of the indicators are as follows : 1) Indicators of effectiveness : to determine whether desired outcomes of the implementation of the value of environmental wisdom *awig-awig* instruments in the area of Taman Ayun reach it's purpose. 2) adequacy Indicator : to determine how far results that have been achieved to solve the problem ; 3) Equity Indicator : to determine whether the costs and benefits are distributed evenly among different groups ; 4) Responsiveness indicators is to determine whether the results of the value of environmental wisdom with instruments *awig-awig* have loaded preference / value community groups that can satisfy the people at Taman Ayun area ; 5) Accuracy indicators : to determine whether the results of the implementation of environmental wisdom with *awig-awig* instruments achieved usefully.

Based on an evaluation of the value of environmental wisdom and *awig-awig* instruments through in-depth interviews with informants in the area of Taman Ayun which is associated with the theory of William Dunn (1994), obtained the following results:

1. Effectiveness indicator: based on evaluation of the effectiveness indicators result that the implementation of the value obtained by using the environmental wisdom *awig-awig* instruments have achieved this goal with the statements of the informants indicated as follows: that the spatial structure is important to ensure environmental sustainability, *awig-awig* presence known to the community of Taman Ayun area, the community of Taman Ayun area know the content of *awig-awig* such as *parhyangan*, *palemahan* and *pawongan*, community in Taman Ayun area has been getting the socialization about *awig-awig* content, *awig-awig* very effective as an instrument in preserving the area of Taman Ayun, the existing rules in *awig-awig* executed properly, there are no obstacles in the implementation *awig-awig* because *awig-awig* very obeyed by the people of the Taman Ayun area, *awig-awig* used by the Taman Ayun area when people want to build where construction permits obtained through *bendesa adat* and *kelihan adat*, sanctions applied based on *awig-awig* form: not allowed to pray to the temple, a fine of up to excluded from the traditional village members.
2. Adequacy indicators: based on an evaluation of the adequacy indicators result that the value obtained with the environmental wisdom *awig-awig* instrument capable of being used in solving problem. This is indicated by the statement of the informant as follows: the value of environmental wisdom and *awig-awig* very effectively used as a reference for the resolution of environmental problems, *awig-awig* very helpful in the management of environmental, *awig-awig* can be used in solving social, cultural and economic issues, *awig-awig* is an effective instrument in resolving violation of spatial layout.
3. Equalization Indicators : based on an evaluation of the equalization indicator result that the environment wisdom value with *awig-awig* instrument cost and benefit can be distributed equitably to people in the village of Mengwi and Gulingan. This is indicated by the statement of the informant as follows: although the *awig-awig* not regulated specifically related aspects of funding, however, the principle of solidarity and mutual assistance put forward in the implementation of an activity in villages, including the renovation of the temple and incentives can be foodstuffs comes from the village of *ayahan* land or customary land from the village residents managed by village board.
4. Responsiveness indicators: an evaluation based on indicators of responsiveness obtained results that the value of environmental wisdom through instruments of *awig-awig* have a preference / group value which can satisfy the Taman Ayun area. This is indicated by the statement of the informant as follows: *awig-awig* very effective as a customary rule, *awig-awig* implementation in everyday life reflect the performance of the traditional village board, *awig-awig* have reflected the characteristics of the existing conservation area Taman Ayun, In the *awig-awig* of traditional village Mengwi and Gulingan containing *Palemahan*, *Pawongan* and *Parhyangan*. *Awig-awig* capable of protecting the environment, *awig-awig* able to preserve the social and cultural life, *awig-awig* able to improve economic productivity, *awig-awig* able to guide and control the development in the area of Taman Ayun.
5. Indicators of accuracy: based evaluation of the accuracy indicators obtained results that implementation of moral values environment is beneficial. This is indicated by the statement of the informant as follows: *awig-awig* able to provide benefits to the Taman Ayun area of environmental sustainability, community participation in implementing *awig-awig* in everyday life help to increase the positive image, *awig-awig* provide environmental benefits for the community and environment in Taman Ayun area, *awig-awig* able to provide economic benefits to the community, *awig-awig* also provide socio-cultural benefits for the community.

Based on the above description, it can be concluded that the villagers with environment wisdom values and the use *awig-awig* as a management instrument has committed environmental preservation acts at Taman Ayun area and the resources contained therein. Though they still rely on traditional thinking patterns, but they are very respectful to nature through environmental wisdoms conducted as part of everyday life on think, act and behave. Environment values with *awig-awig* as management instruments of Taman Ayun area is very effective in conserving Taman Ayun area.

### **3.3 Preparation of the Sustainable Heritage Area Management Model with Environmental Wisdom Approach:**

#### **3.3.1 Problem Identification:**

Based on the results of the study, there is result that environmental wisdom is a very effective instrument in protecting and preserving the Taman Ayun area both environmentally, socially and economically. Taman Ayun area communities who live with their traditional village structure has systems, mechanisms and procedures in organizing and managing their communal villages contained in traditional villages *awig-awig*. Traditional villages *awig-awig* are compiled by involving the entire community and greatly obeyed by the entire community. *Awig-awig* is used as an effective instrument in managing the heritage area. The problems that have the potential to threaten the sustainability of these environmental wisdom is globalization and pressure or development intervention.

#### **3.3.2. Modeling:**

Based on a formulation of the problem obtained few thing to be input in the making of sustainable heritage area management models, as follows: 1) the value of the environmental wisdom Taman Ayun community which is based on religion and philosophy of Tri Hita Karana with instruments *awig-awig* which capable to maintain environmentally sustainable region at Taman Ayun area, 2) the purpose of the heritage area management, namely: improving the quality of the environment, protect, develop and utilize the heritage area in order to provide maximum benefit for: improving the quality of the environment, preservation of cultural and social aspects of sustainability welfare / community economy.

Based on the foregoing, it can be compiled model of sustainable heritage area management with environmental wisdom approach as follows:

1. *Awig-awig* is used as an instrument in the Taman Ayun heritage area management is equipped with the detailed spatial layout. This can be explained as follows: 1) Indigeneous people in the area of Taman Ayun with values-based environmental wisdom based on Hindu religion and philosophy of Tri Hita Karana with *awig-awig* instrument as a written rule in the socio-cultural life capable of preserving the heritage of the region and the sustainability of Taman Ayun; 2) in detail, the values of the environmental wisdom embodied in everyday life are in principle based on the philosophy of Tri Hita Karana which is the harmonious relationship between human and God (Sang Hyang Widi), human with nature (the environment) and human with human; 3) the community at Taman Ayun area implement and obey *awig-awig* consistently; 4) completing the *awig-awig* content with matters related to the spatial arrangement, this is possible because *awig-awig* may be revised or updated for the addition of the content as long the content hold to the concept of Tri Hita Karana and is intended to maintain the sustainability of Taman Ayun area both environmentally, socially and economically; 5) *awig-awig* is an instrument to control land use management in the Taman Ayun heritage area which function: space utilization control instrument, maintain the correspondence between the space utilization with the space regulation contained in the *awig-awig* content, prevent adverse impacts of development and the preservation of the Taman Ayun area.
2. The main consideration is used as a basis for developing the model in this study is based on the existence of Taman Ayun area as an area that has a strong socio-cultural values and not as a tourist attraction. This consideration is intended that this model creation is actually in order to maintain the sustainability of Taman Ayun area both environmentally, socially and economically.
3. This model includes the giving of incentives and disincentives in the management of Taman Ayun area. Incentives contained in the charge of this model can be: compensation, provision of facilities and infrastructure, reward, reward. While disincentives in this model may be restrictions on the provision of infrastructure, provision of special requirements in the permitting process.
4. This model accommodates the concept of preservation namely adaptation. Adaptation is to maintain the socio-cultural values inherent in the heritage area, conducted additional facilities as needed, maintaining the architectural style, the aesthetic harmony of the surrounding environment.
5. Models in this study is a model of sustainable heritage area management with spatial planning policy approach and environmentwisdom can be generalized or used for heritage area management elsewhere. However, with the requisite that the region that use this model should have more or less similar characteristics with the characteristics of Taman Ayun area, namely: 1) area has a strong socio-cultural values, 2) have a homogeneous society (customs, beliefs, religion) and firmly and consistently held cultural values and wisdom of the environment and indigeneous rule that are written or unwritten 3) cultural values and environmental wisdom still well preserved.

#### **3.3.3. Model validation:**

The model built in this study in order to obtain validated models that can be used as a valid instrument in the management of heritage areas. Validation is done by giving an explanation to the informant experts and the

informant in the area of Taman Ayun concerning the model that has been developed. ~~kerifan analysis environment by conducting interviews with source and informants in the area of Taman Ayun.~~

Based on interviews with experts and informants in the area of Taman Ayun that the results obtained from the experts and informants in the area of Taman Ayun expressly agrees and believes that: 1) *awig-awig* used as an instrument in the Taman Ayun heritage area management, 2) the content in *awig-awig* added or equipped with a content-related with spatial planning, and 3) management of the Taman Ayun area need support, commitment, responsibility and the role of all stakeholders government, local government and the community work together; 4) these heritage area management models that are prepared to accommodate the concept and aspects of conservation incentives and disincentives; 5) model developed in this study will be able to survive in the next few years.

Based on these results it can be concluded that the experts and informants coming from community of Taman Ayun area can agree on a model that was built and is believed to be able to realize the sustainability of Taman Ayun area both environmentally, socially and economically, and this model is believed to be able to survive in the next few years.

#### 4. Conclusion:

Based on the results of the discussion can be summed up some of the following:

1. Values and environmental wisdom held firmly and consistently implemented by community-based area of Taman Ayun based on Hindu religion and philosophy of Tri Hita Karana with *awig-awig* instrument as a written rules in the socio-cultural life effectively able to preserve the Taman Ayun area.
2. Heritage area management models that are built with environmental wisdom value approach can be used on heritage areas in other places that have the following characteristics: 1) the region has a strong socio-cultural values, 2) have a homogeneous society (customs, beliefs, religion) and hold it firm and consistent cultural values and wisdom environment and customs rule that are written or unwritten 3) cultural values and environmental wisdom still well preserved.

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