



Landscape Plant Management in Pinge Tourism Village

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ARTICLE INFO

Article History:

Received: 12 April 2022

Final Revision: 30 May 2022

Accepted: 12 June 2022

Online Publication: 27 June 2022

KEYWORDS

Pinge Village Tourism, Tri Hita Karana, Landscape Plant Planning, Community Service.

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ABSTRACT

Tourist villages will need infrastructure that supports tourism activities such as places to eat, places to stay, rest areas, galleries, and so on, one of whose goals is to improve the living standards of local people. This causes the number of plant species to decrease. Plant conservation by utilizing local wisdom is one of the efforts to reduce the decline in the number of plant species. Balinese people need many types of plants to support their ceremonial activities. The application of *Tri Hita Karana* and *Tri Mandala* in the daily life of the Balinese people is expected to support plant conservation activities and support tourism activities and provide economic benefits in the Pinge traditional village. The concept of *Triri Hita Karana* derives from the concept of *Tri Mandala* which consists of the main mandala as a parayangan or holy place, *Madya Mandala* in the form of a yard which includes residential buildings and natah, while nista mandala yard in the form of the back house (*teba*) and the yard of the front house (*telajakan*). Traditional Balinese gardening uses the concept of *Tri Mandala*. The problems raised in this "community service program" are still unorganized placement of plants in the *Tri Mandala* area and the lack of availability of plants for landscape management following the *Tri Hita Karana* concept. To support the management of landscape plants following the *Tri Hita Karana* concept, Warmadewa University in collaboration with the Unda Anyar Seedling Nursery Center, Ministry of Environment and Forestry (KLHK) assisted plant seeds in the form of Cempaka seeds, avocados, sandalwood, majegau, jackfruit, rejaso, sawo, and soursop. Conducting webinars on the topic of landscape plant management following the *Tri Hita Karana* concept. Inviting the people of Pinge Village to actively participate in planting *Tri Mandala* following the concept of *Tri Hita Karana*.

1. INTRODUCTION

1.1. Research Background

Pinge is one of the *official banjars* in Baru Village, Marga District, Tabanan Regency. The area of the New Village is 400 Ha. Administratively, Desa Baru is divided into 4 (Four) Banjar Dinas /Dusun which includes: Banjar Dinas Baru., Banjar Dinas Raden, Banjar Dinas Pinge, Banjar Dinas Susut, which is located in the Marga District of Tabanan Regency which is famous for having ancient relics. One of the potential heirlooms is located at *Natar Jemeng* Temple. Penge Pakraman Village is a traditional village that still relies on Balinese traditional conceptions, especially in the design of gardens and houses. The village has

the potential to become ecotourism [1]. The emergence of new tourist attractions has an impact on land changes to support tourism activities [2]. This causes the number of plant species to decrease. Plant conservation by utilizing local wisdom is one of the efforts to reduce the decline in the number of plant species [3]. Balinese people need many types of plants to support their ceremonial activities. The application of *Tri Hita Karana* and *Tri Mandala* in the daily life of the Balinese people is expected to support plant conservation activities and provide economic benefits in *Penge Pakraman* village. The landscape arrangement strategy to increase the attractiveness of tourists, efforts are needed to preserve the culture of the people of Pinge Village, with the management of landscape plants according to the *Tri Hita Karana* concept. The concept of *Tri Hita Karana* will reduce the concept of *Tri Mandala* in the pattern of spatial division, namely

the main *mandala*, *Madya mandala*, and *Nista mandala*. Bali *Traditional Landscape* uses the *Tri Mandala* concept, with the division of space distinguished based on the function of each of these spaces. The division of space is also related to the type of plant planted according to its philosophy, function, and value [4]. The plant is one of the supporting elements of the beauty of the garden and as a filler for the empty area of the yard. Aesthetics or beauty is influenced by the physical factors of the plant according to the planting function such as fencing, shading, protection, road direction, and so on [5]. The problem in Pinge tourist village is that there is no arrangement of landscapes in each *Tri Mandala* and the community has not mastered the arrangement of plants and the lack of available plants to support the arrangement of landscapes following the *Trihita Karana* concept. Landscape management is indispensable to add to the attraction tourists develop in the tourist village of Pinge. With the arrangement of landscape plants in Pinge Village, it is hoped that they will feel comfortable and at home for traveling and with the hope that they will always miss returning to travel to Pinge Village [6]. The planned spatial pattern as stated in the Bali Provincial RTRW, Pinge Tourism Village is designated as a Tourist Allocation Area as part of the Tourist Attraction (DTW) in Tabanan Regency with the main attraction of agricultural activities. Following the direction of the RTRW of Tabanan Regency in 2012-2032 Number 11 of 2012, Pinge Tourism Village is also mentioned in the Tourism Allocation Area which functions as a Tourist Attraction Area which is a center that has a tourist attraction as a tourist village [7].

1.2. *Literatur Review*

Bali Province is a tourism development area in Indonesia, one of the regencies in Bali that began to actively develop the tourism sector is Tabanan Regency [8]. Tabanan Regency is one of the nine regencies/cities in Bali, apart from being an agricultural area, it also has considerable agro-tourism potential to be developed, both in terms of its natural beauty and in terms of its cultural arts that are rooted in the community based on the Hindu philosophy [8], [9].

The development of agricultural-based tourism villages will provide many benefits for both tourism and the people and culture of Bali. Village development realizes equitable distribution of tourism development and its benefits, as envisioned by Law Number 10 of 2009 and Bali Regional Regulation Number 3 of 2001 concerning Pakraman Village. Tourist villages are also one way to reduce the "leakage" of profits outside the area so that the benefits can be enjoyed by the surrounding community more directly or through a higher multiplication effect [10]. The development of agricultural-based tourism villages is also expected to stimulate development in rural areas, as well as excavation of various potentials that have been lacking or have not received attention [11].

According to Maulia [12], the development of agricultural-based tourism will directly touch and involve the community, thus bringing various impacts to the local community, both positive and negative. In terms of tourism development itself, tourism is one way to develop tourism villages which is one of the efforts to open up market share which has not been netted so far [13]. In addition, tourist villages are also one of the attractions of tourists who have reached a saturation point for various forms of conventional tourism and are starting to be more oriented toward 'alternative tourism [10]. One alternative to tourism is to

develop tourism objects based on local wisdom. Tourism villages in Bali are traditional villages that are optimally developed so that they attract tourists to visit and can improve the living standards of their people. Cultural activities carried out by the Balinese people are centered on traditional villages (pakraman villages) with the basic concept of *Tri Hita Karana*, namely three harmonious relationships between humans and God, humans with humans, and humans with the environment which are described by the presence of *parahyangan*, *pawongan*, and *palemahan* [14]. One of the potentials of Pinge Village which is an attraction for tourists to come to travel is the green *telajakan* view stretching along the road from the village entrance to the corridor of Pinge Tourism Village looks cool and comfortable to look at. Considering that there are several types of *telajakan* such as *telajakan pura*, *telajakan merajan*, *telajakan kantor*, *telajakan sekolah*, *telajakan telabah* (waterways), *telajakan subak* and others [15].

1.3. *Objective of study*

The purpose of this community service is to transfer knowledge of landscape plant arrangements to *Tri Mandalan* according to the *Tri Hita Karana* concept, encourage the active role of the pinge tourism village management community to plant plants that are characteristic of Pinge Village, and preserve plants that become local wisdom.

Telajakan Pinge Tourism Village is fully regulated by the village through *awig-awig desa* published in 1994. The *management of telajakan* carried out by the entire Pinge community is very good because it is in accordance with *the awig-awig* and is regulated by the village.

The residents of *Pinge Traditional Tourism Village* have a special team that moves to deal with *telajakan*. Put it in such a way that it remains sustainable, beautiful and clean. In addition to the existence of an environmental team, the entire community participates and has a high determination in its management. The public knows the importance of *the telajakan* in terms of its function and benefits both in the economic, social, religious, and tourism sectors [16].

From the results of the research conducted, it is known that all residents stated that there was a positive influence of *telajakan* on social life. *Telajakan* has a positive effect on the lives of the residents of *Pinge Traditional Tourism Village*, namely in addition to providing a cool and green atmosphere, as well as increasing the standard of living of the community-sourced from the tourism sector. The entire Pinge village community preserves *telajakan* intending to attract tourists to visit their village. In this way, people benefit in the economic and tourism fields. The tourists see firsthand the beauty of *telajakan* which is the heritage of traditional Balinese ancestors in a traditional Balinese garden. At the entrance to the village, there is a guard post to collect donations from tourists who enter the village. Tourists are charged as sincerely as possible with the intention and purpose of being able to help the management and preservation of *the telajakan* located in the *Pinge Village* environment. The fund is managed by the village to support the activities of the environmental team and the maintenance of road facilities [17].

2. *Methods*

This International Community Partnership Program (PKM) of the Faculty of Agriculture, Warmadewa University with the Faculty

of Agriculture and Agrotechnology of UiTM Malaysia, Melaka Branch, Jasin Campus. Located in Pinge village, New Village, Marga District, Tabanan Regency, Bali in November 2021.

The target of the Community Partnership Program (PKM) Activities is the Banjar Pinge community who are members of the Pinge Tourism Village Management Group which consists of fruit and flower farmer groups, village tourism activist groups, and cadet coral groups. The activity that will be given is a Webinar on the topic of Landscape Plant Management in Pinge Tourism Village. Conducting training / direct practice on the identification of plants that are following the design of the tourist village landscape with the *Tri Hita Karana* concept with the direct participation of the target group.

3. Results and Discussion

3.1. The concept of *Tri Hita Karana* Landscape Management in Tourism Villages

Before conducting the plot for landscape management, a handover of plant seeds and a webinar were carried out which was attended by the pinge tourism village management group, with material on Landscape Management in Tourism Villages (Figure 1). The landscape arrangement in Pinge Tourism Village is adapted to the concept of *Tri Hita Karana*. The landscape arrangement of Pinge tourist village is adjusted to the cultural activities carried out by the Balinese people centered on *pakraman* village with the basic concept of *Tri Hita Karana*, namely three harmonious relationships between humans and God, humans with humans, and humans with the environment which are described by the presence of *parahyangan*, *pawongan*, and *palemahan*. *Pakraman* village consists of three elements, including *parahyangan* elements, namely Hindu temples or holy places, *pawongan* elements, namely local *Pakraman* villagers, *Palemahan* elements, namely village areas in the form of Karang Ayah Desa and *Karang Guna Kaya* [14].

The concept of *Tri Hita Karana* will reduce the concept of *Tri Mandala* in the pattern of spatial division, namely the main *mandala*, *madya mandala*, and *nista mandala*. Traditional Balinese gardening uses the concept of *Tri Mandala*, with the division of space distinguished based on the function of each of these spaces. The division of space is also related to the type of plant planted according to its philosophy, function, and value [4]. The plant is one of the supporting elements of the beauty of the garden and as a filler for the empty area of the yard. Aesthetics or beauty is influenced by the physical factors of the plant according to the planting function such as fencing, shading, protection, road direction, and so on [5]. Community participation in the webinar activity was 90% with an understanding of the topics given by 80%. This shows the magnitude of the community's desire to increase the attractiveness of tourists to Pinge Tourism Village.

3.1.1. *Parahyangan* elements

The *parahyangan* element is related to man's relationship with God or *Ida Sang Hyang Widi Wasa* (Figure 2). Warmadewa University in a community service activity in collaboration with the *Unda Anyar* Seedling Nursery Center, KLHK provided plant seeds in the form of cempaka seeds as many as 150 seedlings, 75 sandalwood seedlings, 100 majegau seeds, and 75 rijasa seedlings and planted in the temple area. This plant is very suitable to be planted in sacred areas which include the *Parahyangan* area. The

word "Pinge" according to local stories means "White". Once in Natar Jemeng temple, there was a very large white cempaka tree. That's what makes the banjar located at the location of *Natar Jemeng* Temple named "Banjar Pinge". At Pura Natar Jemeng, Pura Puseh, Pura Desa and Pura Beji, planting white cempaka flower seedlings as the mascot of Banjar Pinge was carried out. Also, this white Cempaka flower smells good, to add a magical impression.



Figure 1. Webinar and Handover of Plant Seeds

The construction and reinterpretation may have caused a commodification, that is, an object that was not previously a commodity, and then converted into a tourist attraction so that it could make money [18]. The scientific name of the *Majegau* Tree or *Cempaga* is *Dysoxylum densiflorum*. It belongs to the family *Meliaceae* which is related to mahogany plants. This tree grows to a height of up to 45 meters, with an average trunk diameter of 65 cm. The bark of this tree is gray-green. Fruits of gray-green color that are pear-shaped, have a length of up to 4 cm. In Bali, *majegau* plants have good wood quality so they are widely used as building materials, especially in sacred buildings. As a material for carving crafts and also used as ceremonial firewood (*pasepan*) because it has a good smell. "In the treasure of sacred trees in Bali, *Majegau* is believed to be a symbol of Bhatara Sadasiwa. Lontar Usana Bali mentioned that fragrant asep majegau is a means of *Nedungang Hyang Sada Siwa*," said Sugi Lanus. *Cempaga* or *Majegau* is also used specifically in *Manusa Yadnya* ceremonies. *Majegau* wood is burned in the implementation of *upakara* as *padupan-padipan*. The fragrant smoke of This *Majegau* is known as steamed-fragrant. Leaves and flowers for *canang*. His bark graters can be used instead of lime to make *porosan* [19].

Sandalwood is used in the manufacture of enhancers because it produces a very fragrant aroma, so this wood is good for use in sacred places. According to Janantaka lontar sandalwood

includes *Klas Prabu*, which is the wood used to make roof construction on a rise.



Figure 2. Parahyangan elements in Pinge village

Based on observations, sandalwood is used only as a *simbul*, so that the alternative wood used for roof construction (ribs, apit-apit, list plank, petaka) on the pelinggih are cempaka wood and camphor wood. For the construction of the space (saka, emblem, sunduk, door and petitis) using cempaka wood and jackfruit wood. Certain changes in the use of wood for Parahyangan between the Prabu class, Patihdan Arya, were not in accordance with its function. In parahyangan, what dominates is the function

of the aryan class (cempaka wood) both as a roof construction and as a space construction [20].

Rejasa, Anyang-anyang [21] is a beautifully flowering annual tree that is suitable for growing in Pinge village, with a growing location that has an altitude of between 519 meters above sea level to 691 meters above sea level. This tree needs to be preserved, as it belongs to rare plants. The smell of rejasa flowers is fragrant, so it is suitable for planting in pahyangan areas (Figure 2).

Warmadewa University collaborates with the Unda Anyar Seedling Nursery Center, KLHK provided plant seeds in the form of cempaka seeds as many as 150 seedlings, 100 avocado seeds, 75 sandalwood seeds, 100 majegau seedlings, 200 jackfruit seedlings, 75 rijasa seedlings, 100 sawo seedlings, 100 soursop seeds, 100 kg of biological fertilizer and Trichoderma culture.

3.1.2. Pawongan Element

Several studies on the application of *Tri Mandala* and the use of home gardens in Bali have been carried out [22] studying the suitability of plant placement based on the *Tri Mandala* concept in temples, [23] studying the use of medicinal plants in home yards, [24] studying about the placement of plants based on the *Tri Mandala* concept in Bangli's yard, and [25] learn about the ethnic plants in traditional Balinese yards. The concept of pakraman village is related to a garden space planted with various types of plants. One part of the *Tri Hita Karana* concept is a harmonious relationship between humans and the environment which makes the garden design concept have various types of plants that have a special value for the surrounding community [26]. Balinese garden has a high cultural touch and this plant has a function as a complement to *upakara* (ceremonial plants), the philosophy of placing *usada* (medicinal plants), and improving the aesthetics of the garden. Therefore, the predominance of determining the type of plant is influenced by culture [27]. The Pinge village community house is located at the bottom (*teben*), in the house of the Pinge traditional village community following the Balinese garden concept, planting medicinal plants such as betel, flower plants such as: jepun, gumitir, pucuk, cempaka, as a complement to ceremonial plants such as croton, ivory coconut. (Figure 3.).

3.1.3. Palemahan Element

Palemahan is the last part of *Tri Hita Karana*. It forms a harmonious relationship between and man with the environment and includes our responsibility to nature and teaches compassion towards the lesser beings (Figure 4). This is a reminder that we are not alone on this planet. Trees provide oxygen for us to breathe, rivers and lakes provide water, and plants and livestock provide food. For the Balinese, nature is not just physical and real. The Balinese believe that there are two realms: natural and supernatural. *Palemahan* also includes maintaining relationships with lower beings, which in this sense means supernatural. The Balinese believe that aspects of nature are guarded by lower protective spirits that need to be appreciated regularly so as not to break down and disturb the balance of nature. Now, *palemahan* can be seen in a ritualistic and practical sense. In a ritualistic sense, *palemahan* includes ceremonies related to nature. These ceremonies fall into the category of Bhuta Yadnya, or ceremonies performed in relation to the lesser beings. This is to maintain good relations with the supernatural so as not to interfere with human life and invite disasters.



Figure 3. Pinge traditional village house



Figure 4. *Palemahan* Element Practices

3.2. *Telajakan*

Physically, there are three main functions of *telajakan*, namely greening, protecting the environment, and maintaining building boundaries for the safety and comfort of the building and its environment [4]. [15] that says the plow should be planted with aesthetic plants, rituals, and medicines. The sustainability of *telajakan* turned out to be a special attraction for tourism. The identification of *telajakan* in this village needs to be done to study its function, development, and management mechanism, so that one of Bali's traditional spatial heritage remains sustainable [28]. There are several types of *telajakan* in Pinge Tourism Village, namely *telajakan pura*, *telajakan* along residential corridors, *telajakan subak* (rice fields) and *telajakan sungai* (Figure 5).

The existence of *telajakan* has been appointed in Bali Regulation No. 10/1999 concerning Denpasar City Spatial Planning. The width of the *telajakan* can be determined by the minimum width of the road, from 0.5 meters on the path (6 meters) to 2.0 meters on the main road (18 meters). However, *telajakan* in the residential corridor of Pinge Village has a uniqueness because its width reaches 2-5 meters. Universitas Warmadewa with a community partnership program invites all members of the Pinge Village management group to plant *Telajakan* in planting various types of plants including bananas (*Musa paradisiaca*), croton (*Codiaeum variegatum*) and several ornamental plants such as Cambodia (*Plumeria* sp.) paper flower (*Bougainvillea spectabilis*), etc. Croton plants dominate the harvest, the Academic Community of the Faculty of Agriculture, Warmadewa University invites pinge tourism village managers to plant various types of croton plants (Figure 5)

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Figure 5. Different types of croton plants

Telajakan began to be arranged in such a way and was supported by innovations and variations that occurred in each *telajakan* according to the tastes of the owner. The *model* in Pinge is from flat to terrazzly based on the state of the tread.

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The place to plant plants (*Landscape*) is *telajakan* is functioned as greenery. As a space or distance between the wall of the house and the highway (*Space*). The place of the statue (*Sculpture*) is to place the statue between the *angkul-angkul* of the homeowner. A place to stick penjor during the *galungan* and

Kuningan holidays and or at the time of *the masterpiece*. Adding to the beauty of the front of the yard



Figure 6. *Telajakan* in Pinge Village in 2022

3.3. Rest Area

The entrance of Pinge Village is made in the tebe section to the south of the village. The entrance corridor is made 5 meters wide with a typical rice granary design of Tabanan Regency. An elephant statue is placed around the entrance as a welcome for tourist arrivals, as well as a resting place for tourists coupled with the planting of *Bougainville* flowers (Figure 7).

In the middle of the corridor, there is a main road with pedestrian paths on the left and right sides. Along the way, soursop, avocados, jackfruit, and sawo trees are planted so that they will give a cool impression to pedestrians. Bricks became the main material in the construction of this corridor. The roof in the form of a rice barn is made of teak wood with a typical Tabanan pattern. The pedestrian paths and main roads are designed using paving blocks, where the use of red for pedestrian paths and white for the main roadways of the village (Figure 8).



Figure 7. Rest area



Figure 8. The walkway in the rest area

3.4. Tebe

Space utilization is based on the designation for the type of activity which is the same as the concept of Tri Mandala value [29]. *Nista mandala* in the form of *tebe* is an area that functions as a place to raise and grow plants that have a large tree habitus. Based on the Tri Mandala concept in the *tebe* / plantation area of the Pinge traditional village, plants such as sawo, soursop, durian, and avocados are planted which function as family economic plants. However, the emergence of new tourist attractions has an impact on land changes to support tourism activities [2]. Plantations, *Tebe* switched functions for flower planting, tourist tracking activities on rice terraces, and their laying are no longer in the back of the *Tebe* but in the front to attract tourists (Figure 9)



Figure 9. Pinge village gardens/rice fields

4. CONCLUSION

The application of the basic concept of local wisdom of *Tri Hita Karana* in Landscape Plant Management in Tourism Village has succeeded in increasing the number of plants and increasing the attractiveness of tourists. *Tri Hita Karana* consists of three elements consisting of harmonious relationships between humans and God (*parahyangan*), humans with humans (*pawongan*), and humans with the environment (*palemahan*).

Acknowledgments

Authors would like to thank the Rector of Warmadewa University for providing funds, to the Dean of the Faculty of Agriculture and Agrotechnology, Universiti Teknologi MARA (UiTM) Melaka Branch Campus, Jasin, who has been willing to hold a Community Service join and members of the Pinge indigenous village management group who helped the Community Partnership Program, as well as the Unda Anyar Seedling Nursery Hall who had made donations seed.

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