



Optimization of Preservation and Utilization of Local Plants from Environmental Law Perspective in Badung Regency Government

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This study examines the optimization of the preservation and utilization of local Balinese plants in Badung Regency. Balinese Local Plants which are diverse and important needs such as for usdha, ceremonial facilities, and also greening have not been optimally empowered. There are still many plants that do not come from local Bali that are actually widely used in Bali, especially Badung. The research uses empirical legal research, with observations in the field, especially in the Badung area, in Badung uatra, especially in the evening and the area of local plant cultivation in Bali. Then it is supported by secondary data, in the form of research results and journal journals related to the

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issues discussed. The research examined and analyzed the policies that will be made in protecting and utilizing local Balinese plants to be optimized in the Balinese community, especially in Badung. In relation to the protection and management of the environment in local Balinese plants which are used for the benefit of daily needs and the needs of ceremonial facilities both on a small and medium scale, the preservation of local Balinese plants is included in the principles of environmental management, namely the protection of biodiversity. In order to provide protection for existing local wisdom such as the increasingly scarce Balinese lkal plant, the people's economic policy, by making customary law communities the main driver of the regional economy and expanding their access to existing financial institutions with services based on the existing legal system in the community. Policies made in the formation of regulations by changing the perspective of anthropocentric ways with an *eco-culture* perspective that sees indigenous communities as ecological socio-economic communities, which are more oriented towards preservation and utilization of local plants with maintenance of the environment are important.

Keywords: Local plants preservation; eco-culture; utilization.

1. INTRODUCTION

The culture of the Balinese Hindu community has various kinds of local wisdom with various contributions and potentials that need to be maintained and preserved. Advances in science and technology have brought extraordinary changes in the fields of health, food and the environment (Ketut, 2015). Bali, which has religious characteristics and various kinds of religious and traditional ceremonies, will need a lot of facilities and infrastructure, one of which is those derived from plants, flowers and fruits for the purposes of religious ceremonies and other events. In addition, the island of Bali as a world tourist destination, has received recognition from various countries in the world. Its fame has given it an identity, one of which is as the island of a thousand temples. This identity is inseparable from the establishment of a place of worship in the form of a *temple* for Hindu believers.

Traditional communities actually have local wisdom that functions to preserve the environment. However, modernization has eroded this local wisdom. The modernization process causes traditional societies to be uprooted from their cultural roots. The religiosity and spirituality of indigenous peoples centered on nature has been replaced by modernity as a new religion and spirituality (Januariawan, 2021). Bali's development, especially in Badung Regency, is not entirely based on tourism, but is also oriented to in the agricultural sector. For development as an agricultural area in a broad sense, the development of the area is in the northern region, namely; Mengwi District, Petang District, and Abien Semal District. Meanwhile, the southern part of Badung Regency rests as an area in the tourism sector, namely; Kuta, South

Kuta, and North Kuta Districts. The 3 (three) sub-districts in the Kuta area mentioned above, by relying on the development in the tourism sector because the land area is dry land of rocks and is a coastal area. For the northern part of Badung Regency, with the topography of the mountainous plain area, it is very suitable for development development that relies on the agricultural sector. With this land plain, the area borders Bangli Regency as a Regency which is positioned as a nature conservation with the existence of Lake Batur and also borders Tabanan Regency with the existence of Lake Beratan as a supporter of agricultural areas (Januariawan, 2021).

The sustainability of Balinese tourism by being supported through the implementation of ceremonies, further strengthens the need for the availability of facilities in the form of plants that can live in certain areas due to their natural conditions. So that synergy between natural characteristics and tourism development is realized. In the development and development of Balinese tourism, it always relies on and is based on documents (inscriptions and books) listed in the distribution of books or religious books that are used as the basis for religious ceremonies (Parwata, 2018).

Starting through a mantra verse quote in Manawa Dharmasastra; Osadhyah pasavo uriksaastir Yancah paksinasttshaa Yajnyartham nidhanam praaptaah Praapnu vantyutsritih punah (Manawa Dharmasastra V.40)

Artinya: (Shrubs, cattle trees, other birds, which have been used for ceremonial means will be present to a higher level at the coming birth).

In relation to the protection and management of the environment in local Balinese plants which are used for the benefit of daily needs and the needs of ceremonial facilities both on a small and medium scale, the preservation of local Balinese plants is included in the principles of environmental management, namely the protection of biodiversity.

Biodiversity or biological diversity is a term used to describe the richness of various forms of life on this earth ranging from single-celled organisms to higher-level organisms (Siboro, 2019). Biodiversity includes habitat diversity, species diversity (types) and genetic diversity (variation of traits within species).

Communities everywhere are inseparable from various other organisms that exist in the habitat and form an ecological system with the characteristics of interdependence on each other (Djafaruddin, 1996). Thus, it is necessary to protect and manage and utilize Bali's local plants as an effort to preserve biodiversity in Bali in addition to economic benefits as well as ecological benefits.

From the description that has been stated earlier, the following problems can be formulated: How is the optimization policy model in the protection and management of local Balinese plants used for the needs of the Balinese people, especially in Badung Regency?

2. METHODS

This research has been carried out for 1 year, using a type of normative empirical law research (mix methods). Empirical legal research is used because it is alleged that there is a gap in the protection and preservation of local Balinese plants. Where in the laws and regulations there is a principle of protection for biodiversity, but in reality many plants are almost extinct and there is no development and cultivation. Empirical legal research is oriented towards harmonizing the gap between legal substance and community legal culture. The approaches used are: the conceptual, legal approach and the application approach. The data used is in the form of primary data collected by freely guided interview techniques to stakeholders.

3. LITERATURE REVIEW

Related to the Bali Local Park, there are several concepts that must be understood, including the

concept of preservation, cultivation, protection, and the concept of Balinese Local plants.

Conservation is defined as activities that are carried out continuously, directionally, and in an integrated manner in order to realize certain goals that reflect the existence of something fixed and eternal, dynamic, flexible, and selective. Cultural preservation is an effort to maintain cultural arts values, traditional values by developing realizations that are dynamic, flexible, and selective, and adapt to situations and conditions that are always changing and evolving (Januariawan, 2021).

Article 1 number 6 of Law No. 32 of 2009: The preservation of environmental functions is a series of efforts to maintain the continuity of the carrying capacity and tamping capacity of the environment. Article 2 letter b of Law No. 32 of 2009; The principle sustainability is that everyone bears obligations and responsibilities to future generations and to others in one generation by making efforts to preserve the carrying capacity of the ecosystem and improve the quality of the environment.

The existence of local plants in Bali is currently increasingly rare and even almost extinct, therefore conservation efforts are needed. Conservation in Balinese Local Plants contains 2 conservation concepts, namely cultural preservation and environmental function preservation. The preservation of Balinese Local Plants is carried out through cultivation and protection.

Conservation is an effort to maintain the sustainability of the existence and function of Balinese Local Plants which is carried out through cultivation and protection. The Concept of Cultivation in Government Regulation Number. 18 year 2010, was stated that Cultivation is an activity that develops and utilizes plant resources and is carried out by humans by utilizing capital, technology, or other resources in order to produce products that are able to better meet human needs.

The purpose of cultivation, among others, is to improve the protection of plant cultivation consistently and consequentially by paying attention to aspects of natural resource conservation and environmental functions. Cultivation related to Balinese Local Plants is a series of activities or efforts to maintain, develop and utilize Balinese Local Plants with capital,

technology, and other resources to produce goods to better meet human needs.

Plant Protection has a very important meaning in determining the success of plant cultivation goals. Thus, Plant Protection is an effort to protect plants from threats or disturbances that can damage, harm, or interfere with the normal life process, from pre-planting to post-planting (Budiasih, 2019). Related to Banten Gumi Park, Protection is an effort to protect against extinction, preserve germplasm and plant functions.

Culture in the form of values, reason, and ideas is a form of local wisdom, and is universally seen as a gift for human life. The universality of local wisdom is part of the truth about the existence of God so that it must be preserved (Sustainable Agricultural Cultivation Systems, 2019). The wisdom of agriculture with the conventional system makes farmers sometimes force plants to grow in various verbal and nonverbal languages to obtain abundant crops. On the one hand, the agricultural system that has been practiced by our ancestors has led to the harmony of natural conditions in order to achieve sustainable agriculture and based on local wisdom. On the other hand, the existence of a conventional agricultural system that develops based on trust through respect for a belief in the power of nature guardians, is often seen as less effective in overcoming the problem of environmental conservation.

In the management and protection of the environment related to the sustainable agricultural cultural system, there is a thought or mindset that is applied, namely in Law Number 22 of 2019 concerning the Sustainable Agricultural Cultivation System, in principle, it is an agricultural management paradigm that integrates four elements, namely environmental, social, cultural, and economic aspects so that the benefits of agriculture can be enjoyed for a long time. The Sustainable Agricultural Cultivation System is carried out by paying attention to the carrying capacity of the ecosystem, mitigation, and adaptation to climate change, as well as environmental sustainability to realize an advanced, efficient, resilient, and sustainable agricultural system (Wijaya, 2023). This is in accordance with the principles in the implementation of environmental management that accommodates related to biodiversity protection, one of which is local plants in Bali.

4. RESULTS AND DISCUSSION

The development of Bali, especially in Badung Regency, does not as a whole rest on the tourism sector, but is also oriented towards the agricultural sector. For development as an agricultural area in a broad sense, the development of the area is in the northern region, namely; Mengwi District, Petang District, and Abien Semal District (Januariawan, 2021). The existence of Gumi Banten today is increasingly rare and even almost extinct, therefore conservation efforts are needed. Preservation in Taman Gumi Banten contains 2 conservation concepts, namely cultural preservation and preservation of environmental functions. The preservation of Banten Gumi Park is carried out through cultivation and protection. Conservation is an effort to maintain the sustainability of the existence and function of Balinese Local Plants which is carried out through cultivation and protection (Sri YAAK, 2023). Currently, many ceremonial plants are increasingly rare and even about to become extinct. For example, the *parijata* plant (*Nictantes arbor-tristis* L.), is now increasingly difficult to obtain. The *nagasari* plant (*Mesua ferrea* L.) is really rare, in a village there is only one at most. The *pangi* plant (*Pangium edule* Reinwe) and *tingkih/candlenut* (*Aleurites mollucana* Willd.) are unknown to the younger generation. Similarly, many *people do not know about* nyuh bejulis, nyuh rangda, nyuh bongol, nyuh shrimp or *nyuh sudamala*. Likewise with various types of bananas, now it is difficult to find Balinese banana seeds that used to exist in Bali (Nyoman, 2022). Preserving ceremonial plants as local wisdom with noble value is the obligation of all of us. One of the local wisdom that needs to be preserved is community knowledge related to the ethnobotany of Hindu ceremonial plants. Local knowledge of plant management related to ethnobotanical aspects, namely the study of knowledge systems that function to document and explain the complex relationship between culture and plant use with the main focus on how plants are used, managed, and perceived in various community environments, for example as food, medicine, religious practices, cosmetics, dyes, textiles, clothing, construction, tools, currency, literature, rituals, etc. and social life (Ketut, 2015). Based on the inventory of 132 types of local Balinese plants, the Banten Gumi Plant group carried out observations or field visits to the North Badung area located in the area of Pura Luhur Dang Kahyangan Pucak Tedung, Petang Village/Sulangai Village, Petang District, Badung Regency, which is a pilot area for

ceremonial plants. Next, an interview was conducted with the Banten Gumi Plant Manager. From the results of observations or field reviews and interviews, it can be stated that:

1. The ceremonial plant pilot area is an idea of the Badung Regency Government which was realized around 2020, which began with the construction of environmental roads. Furthermore, plant seedlings were planted for donation ceremonies from the Badung Regency Government, ABRI, students who carried out community service activities and assistance from other agencies. In addition to being designated as a pilot area for Banten Gumi Park, this area is also designed as a natural tourism and spiritual tourism area with a total area of \pm 12 hectares.
2. Most of the ceremonial plants already exist in the area. Some ceremonial plants that do not yet exist, including: Sugarcane Sala, Bunut Bulu, Pulasa, Don Medori Putih, Don Ginten, Mesuwi Plant, Menuh Plant, Rijasa, Bila Plant, Parijata, Kasna, Tuwung Bulu, Pudak, Entikan Pepe, Landep, Dadag Beetle, Tulak Wood, Kayu Sisih, Kayu Mas, Dapdap, Intaran, Don Ancak, Nagasari, Kemerakan Kuning, all types of coconut, red and white ratna flowers, Types of Temu-temu, Sweet Potatoes, Jail-Jali, Don Soren, Don Pelas, Blego, Paye Puwuh, Don Waru, Don Kikian, Gegirang, Pandan, Pandan Meduwi, Purnajiwa Samiroto, Don Delem, Miana, Temen, Sudamala, Cotton, Red and White Pomegranate, and Banana sane meadan.
3. Ceremonial plants in the form of flowers are more suitable to be planted in the Pelaga area, while all types of coconuts are more suitable to be planted in the Sangeh area.
4. The management of the ceremonial plant pilot area is carried out by the Pengempon of Pura Luhur Dang Kahyangan Pucak Tedung, Petang Village/Sulangai Village, Petang District, Badung Regency (Yeny, 2016).

From the results of observations and interviews, it can also be seen that since the planting of the ceremonial plants, further arrangement, coaching and cultivation have not been carried out. In addition, it is necessary to add assistance for types of ceremonial plants that do not yet exist in the area. In order to improve the welfare of the

people of Badung Regency, it is also necessary to make efforts to distribute continuously through a certain unit and to ensure price stability in the market.

The direction and policy pattern of Strengthening and Advancing Balinese Culture have been outlined in Regional Regulations and Regulations of the Governor of Bali, and have been implemented in a real and sustainable manner in various programs including the Preservation of Balinese Endemic Plants as a Banten Gumi Park, Puspa Dewata, Usada, and Greening through Bali Governor Regulation Number 29 of 2020. The purpose of the development of the Banten gumi park is to preserve various local Balinese plants which are very useful as a means of ceremony. With the development of Taman Gumi Banten, it is hoped that the community will no longer have difficulty obtaining the plants they need, the existence of which is increasingly rare (Yeny, 2016). Gumi Banten plants are local types of plants in Bali that have a *social-religious* function. The preservation of plants included in the Gumi Banten plant is one of the efforts to realize the *genius of the loci owned* by Balinese culture, in life and functionality of the present and the future. Cultural preservation is an effort to maintain cultural arts values, traditional values by developing realizations that are dynamic, flexible, and selective, and adapt to situations and conditions that are always changing and evolving.

5. CONCLUSION

The Balinese Indigenous Peoples developed into themselves, both individually and in groups, in bonds and relationships with the universe as a whole, the philosophy of natural balance known as Tri Hita Karana.

In order to develop the socio-economic environment, Balinese indigenous peoples must be able to change the capitalistic anthropocentric perspective to the Eco-cultural perspective by paying attention to the rights of indigenous peoples, both individually and in groups, which is the minimum standard for the socio-economic survival of the environment and respect for the dignity of indigenous peoples. Thus, policies made in the context of protecting and preserving local Balinese plants to maintain the balance of nature, can also provide economic benefits for the indigenous community and Bali as a whole.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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