

## INTEGRATING CULTURAL HERITAGE AND MODERN URBAN PLANNING: TRANSFORMING KARANG BENGANG IN TEGALLALANG

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### ABSTRACT

Karang bengang, a traditional green space in Tegallalang, Gianyar, represents a significant element of Bali's cultural heritage and environmental sustainability. This study explores integrating karang bengang's cultural and ecological values with modern urban planning strategies to create sustainable urban designs that honor traditional practices. A lot of karang bengang has been lost due to development, thereby changing the heritage site. The research employs a qualitative approach, including grounded theory and hermeneutic analysis, to understand the historical significance, current transformation, and future potential of karang bengang. Findings reveal that karang bengang serves not only as a green belt and community space but also as a vital component of Bali's cultural identity, offering ecological benefits and promoting social cohesion. However, rapid urbanization and tourism development threaten its existence and functionality. This study proposes a model that balances development needs with preserving traditional landscapes. This model emphasizes community engagement, digital mapping technologies, and policy recommendations that reinforce the importance of cultural landscapes in urban environments. The proposed framework aims to guide policymakers, urban planners, and local communities in preserving karang bengang while accommodating growth and modernization. Ultimately, this research contributes to the broader discourse on sustainable urban development, highlighting the need to respect and incorporate cultural heritage in the planning process to achieve resilient and culturally enriched urban spaces.

**Keywords:** Community Engagement, Cultural Heritage, Karang Bengang, Tegallalang, Urban Planning.

## INTRODUCTION

Bali is famous for its Balinese Hindu culture and religion, which are the basis of its traditional spatial. This feature gives Bali's spatial layout unique characteristics that differentiate it from other regions. Rules that only apply in local areas or what we know as local wisdom also enrich the uniqueness of each region.

Several elements of Balinese landscaping characterize Balinese spatial planning, including *natah*, *telajakan*, *lebuh*, boundaries of Hindu holy places, *melasti* places, *alun-alun* (open city spaces), cemeteries (*setra*), *karang bengang*, *karang embang*, and *karang tuang*. Yudiantini (2015) emphasized that *karang tuang* is found in every corner of *pempatan agung*, *karang embang* is in every *banjar*, and *karang bengang* is a relatively large open space located in an area or city that has a function as a green belt or green open space. *Karang bengang* is a transitional space that enters the traditional village area. This becomes a clear spatial identity.

Traditional green open spaces in settlements balance built and non-built spaces. However, development often sacrifices spaces that should be maintained by the community and government, which are considered undeveloped. Bali tourism, which uses Balinese nature as one of its attractions, has become one of the factors that drive the most significant land conversion, as happened in Tegallalang District, Gianyar Regency, in 2021 (Wirnaya, 2021).

*Karang bengang* has become a built-up space with various residential and trade uses, whereas various tourism services dominate Tegallalang District. This utilization involves multiple parties in Tegallalang District. Different economic and socio-cultural conditions provide the background for using *karang bengang*.

The spatial use of *karang bengang* makes open spaces in traditional villages challenging to recognize, as is the case with *karang bengang*, which is located at the main access area, namely along the Tegallalang highway, which consists of *karang bengang* Tegallalang Traditional Village with *karang bengang* Sapat Traditional Villages. *Karang bengang* Sapat Traditional Village, Gentong Traditional Village, and Tegallalang Traditional Village are located along the area's main road, which differs from *karang bengang* between Kelabang Moding Traditional Village and Abangan Traditional Village. The loss of *karang bengang* reduces green open spaces that function ecologically and diminishes the identity of traditional Balinese spaces. Preserving *karang bengang* requires participation from traditional villages, the government, and the wider community.

## THEORY / RESEARCH METHODS

### The Materials

#### Karang Bengang

There are several public perceptions about *karang bengang* (Karma, 2018), such as from Gelebet, which states that *karang bengang* is a collectively owned green open space (green belt) that functions as the boundary of traditional villages in Bali. *Karang bengang* located along the river cannot be utilized. The shape of

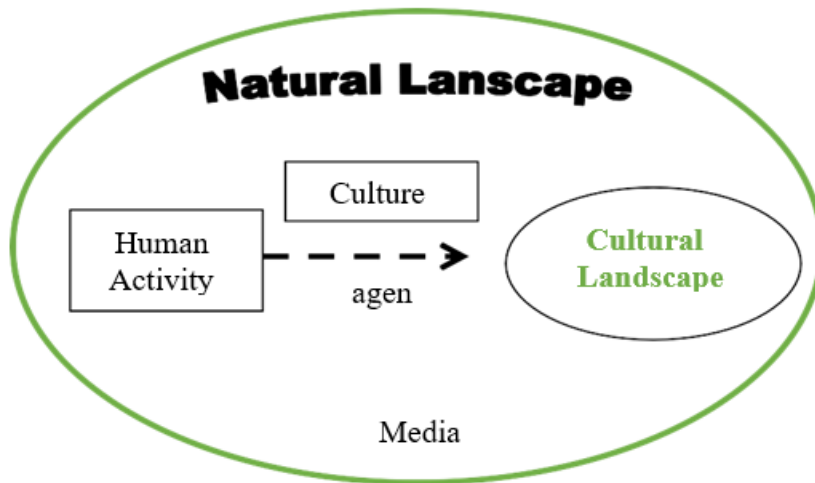
*karang bengang* is a forest with an area of *a linggah tukad, a tegeh jurang, a bahan kayu* (as wide as the river, as high as the ravine, as long as the fallen trees). Paturusi & Diartika (2010) stated that *karang bengang* is an empty area between two villages that function as a separation and green open space that cannot be built on. Windia states that *karang bengang* is empty land, long and wide; its form can be agricultural land, plantations, or forests (Karma, 2018). Meanwhile, Putra emphasizes *karang bengang* in its quiet land activities, because *karang bengang* is used as agricultural land and plantations, making human activity in this area scarce (Karma, 2018).

Based on the understanding above, it can be seen that the common opinion is that *karang bengang* is the boundary of the two traditional villages and is a green open space that cannot be built on. The shape of *karang bengang* can be rice fields, forests or moors. Because *karang bengang* is used as agricultural land, moors, and forests, human activity in this area is infrequent (*bengang*).

### **Cultural Landscape**

Landscape can also be seen as the result of a process; in this case, human interaction in processing nature can produce an object called a landscape (Izzati & Ikaputra, 2022). Landscape, as a process and product of human interaction, is closely related to the culture inherent in humans themselves. The landscape is associated with landscape aesthetics and generally accepted environmental and behavioral values in the humanities (Tuan et al. in Izzati & Ikaputra, 2022). These generally accepted environmental behavioral values can be summarized as culture or culture. Basic knowledge of landscapes provides information on how people from different cultures value different areas and environments. Deng in Izzati & Ikaputra (2022) suggests how the process of cultural hybridization (crossing) can be included in the landscape, that the landscape is related to territory, including its connection to the land and intangible culture that influences artifacts (landscape). Image representation is achieved through people's environments, which are ultimately structured and symbolized (Daniels and Cosgrove in Izzati & Ikaputra, 2022). Ratzel in Izzati & Ikaputra (2022) states that culture landscape is part of natural landscape, which changes due to human activities. A cultural landscape is created from a natural landscape by a cultural group, where culture is the agent, nature is the medium/container, and the result is a cultural landscape (Sauer in Izzati & Ikaputra, 2022).

UNESCO includes cultural landscape as a new category in the World Heritage Convention and describes cultural landscape as a work that combines nature and humans. Kuehne in Bruns et al., (2015) states that cultural landscape as home and landscape as an ecosystem, while Rudolf in Izzati & Ikaputra (2022) suggests that there is a close relationship between nature and culture in a cultural landscape (Figure 1).



**Figure 1.** Position of Cultural Landscape  
Source: Re-draw from Izzati & Ikaputra, 2022

### Green Open Space

Gelebet in Karma (2018) states that *karang bengang* is a collectively owned green open space (green belt) that functions as the boundary of traditional villages in Bali. Based on the Regulation of the Minister of Public Works Number: 05/PRT/M/2008, a green belt or green belt is a green open space that functions as a buffer area and limits the development of land use (city boundaries, area separation, etc.) or limit one activity to another. Other activities so as not to interfere with each other and safeguard from surrounding environmental factors. The green belt functions as a buffer or border area between two cities so that the green belt can become green open space for two or more cities. The green belt is intended as a protected area with limited use, with its primary use being as a natural air filter for the cities that border it.

### Traditional Village (*Desa Adat*)

Based on Bali Provincial Regulation Number 4 of 2019 concerning traditional villages in Bali, the definition of a *traditional village* is a customary law community unit in Bali that has territory, position, original structure, traditional rights, assets, traditions, and social etiquette. For generations, the community has been bound by sacred places (*kahyangan tiga* and *kahyangan desa*). Traditional village government is the administration of social life in traditional villages relating to *parahyangan*, *pawongan*, and *palemahan*, which is recognized and respected in the government system of the Unitary State of the Republic of Indonesia.

There are three types of membership in traditional villages: *krama desa adat*, a member of the balinese hindu community, and *mipil* (customary village *krama* membership registration system). *Krama tamiu* are members of the Balinese Hindu community who are not *mipil* but are registered in the local traditional village, and the third is *tamiu*, who are people other than *krama* traditional village and *krama tamiu* who are in *wewidangan* temporarily or reside and are registered in the local

traditional village. *Wewidangan* or *wawengkon*, or *wewidangan* traditional village, is a traditional village area with specific boundaries (*Peraturan Daerah Provinsi Bali Nomor 4 Tahun 2019 Tentang Desa Adat di Bali*, 2019).

*Bendesa adat* or *kubayan*, or by other names, is the top administrator of a traditional village. There are rules made by the traditional village and/or traditional *banjar* that apply to *krama desa adat*, *krama tamiu*, and *tamiu*. *Awig-awig* is a rule by the traditional village, *krama tamiu* and *tamiu*. *Pararem* is the rules/decisions of the *paruman* traditional village, such as implementing *awig-awig* or regulating new things and/or resolving customary cases/discussions in the traditional village.

## Research Methods

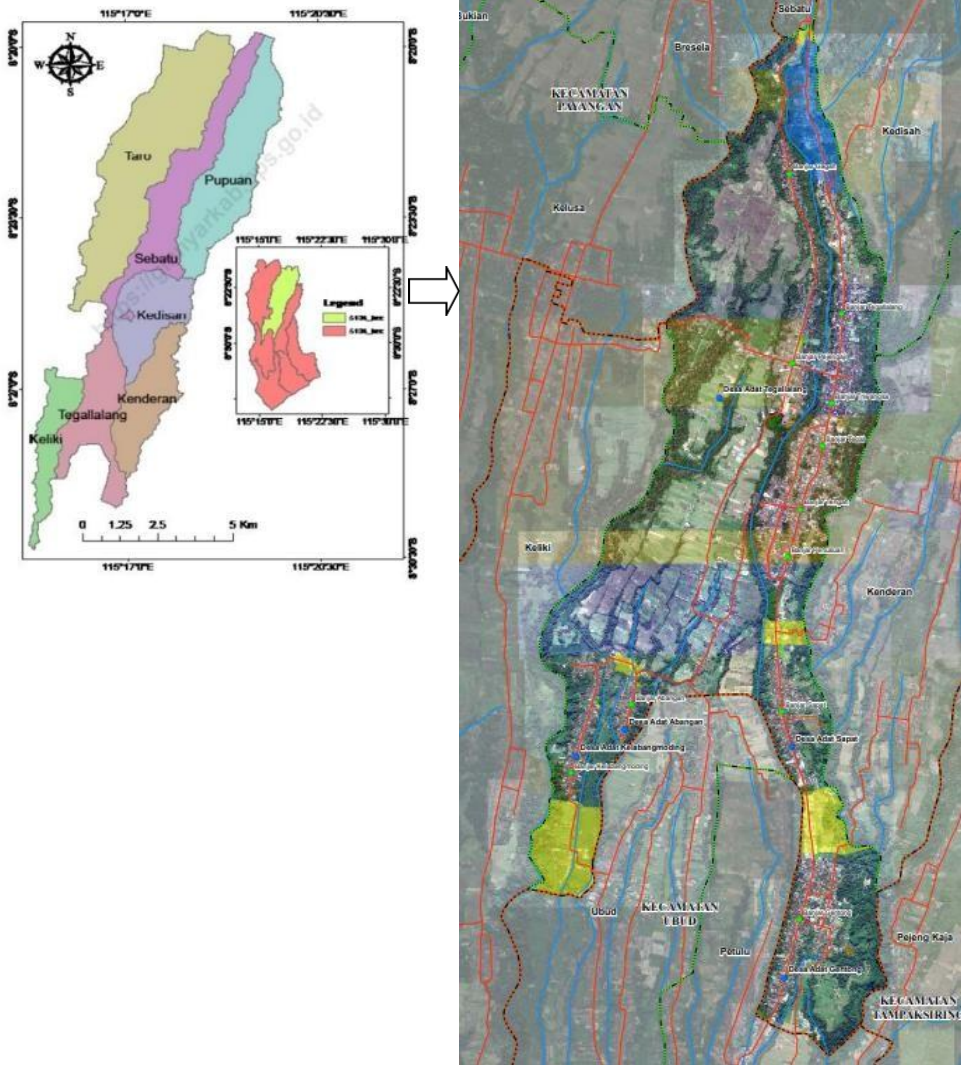
This research was conducted using qualitative methods. Qualitative research uses narratives or words to explain and describe the meaning of certain phenomena, symptoms, and social situations. In qualitative research, the researcher is crucial for understanding and interpreting each phenomenon, symptom, and particular social situation. Therefore, researchers must master theory to analyze the gaps between theoretical concepts and the occurring facts (Waruwu, 2023).

The qualitative was chosen because more information about *karang bengang* was needed. Information about *karang bengang* was obtained through interviews with informants who knew about *karang bengang* in Tegallalang, namely the head of *Majelis Desa Adat* Tegallalang Regency and the Tegallalang Traditional Village *Bendesa*. Observations regarding the activities and use of *karang bengang* were carried out from June-December 2023 in traditional villages in the Tegallalang Village, Tegallalang District, Gianyar Regency.

## RESULTS AND DISCUSSION

In the view of the Balinese people, the concept of territory has two meanings, namely: first, territory as a unified territory where its citizens jointly carry out ceremonies and various social activities organized by a cultural system called a traditional village, and second, the village as a unified administrative area with the name of service or provision village (Kumurur & Damayanti, 2009), so that the preservation of *karang bengang* itself can be carried out through traditional villages and service (government) villages.

Tegallalang Village in Tegallalang District, Gianyar Regency, has five traditional villages: Tegallalang Traditional Village, Sapat Traditional Village, Gentong Traditional Village, Kelabang Moding Traditional Village, and Abangan Traditional Village (Figure 2). All traditional villages still have *karang bengang*, but in different conditions and no longer intact.

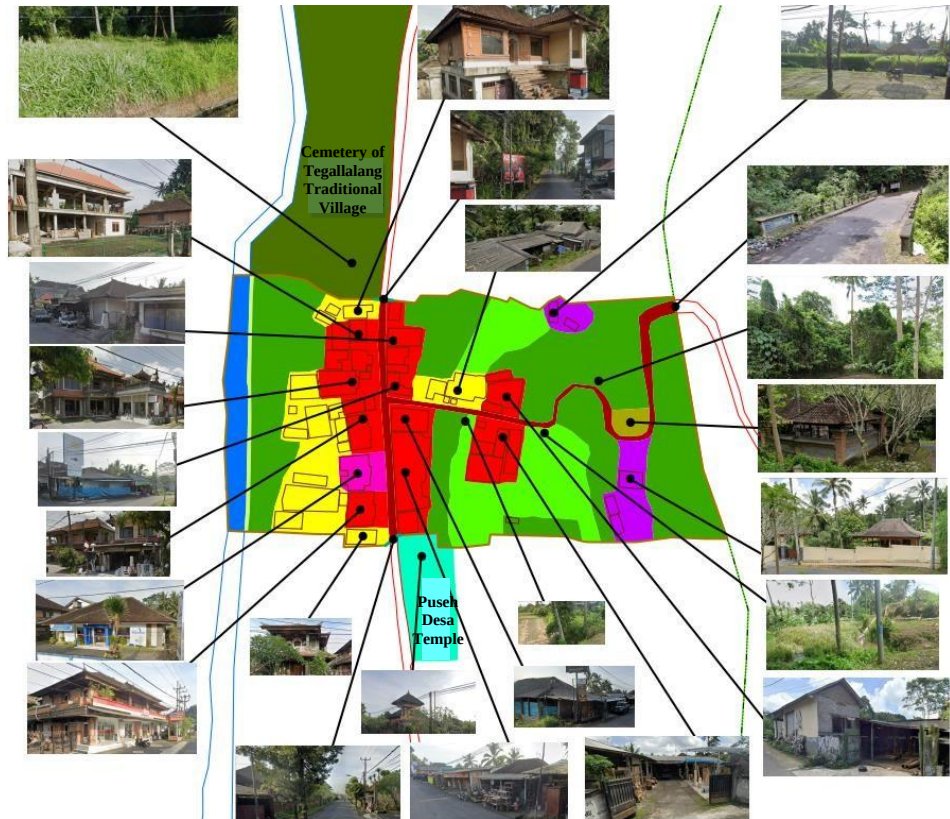


**Figure 2.** Position of Tegallalang Village and Distribution of *Karang Bengang* (Yellow Color) in Tegallalang Village

*Karang bengang* Tegallalang Traditional Village, Sapat Traditional Village, and Gentong Traditional Village are located on the primary village access, namely the Tegallalang Road. *Karang bengang* in the three traditional villages has predominantly changed from agricultural activities to trade and service activities such as banking and handicraft activities. Meanwhile, *karang bengang* in the Kelabang Moding and Abangan Traditional Villages has transformed from agriculture into tourism facilities such as villas and hotels.



Since the 1990s, Tegallalang has been known as one of the export-oriented handicraft centers in Bali Province. *Karang bengang*, located at the primary village access, has experienced rapid transformation since then. The transformation differs from the transformation *karang bengang* experienced in the Abangan and Kelabang Moding Traditional Villages, where land transformation is slower than in the main access areas (Figure 3).



**Figure 3.** Transformation of *Karang Bengang* in Tegallalang-Sapat Traditional Village

### ***Karang Bengang* as Part of the Cultural Landscape**

*Karang bengang*, as a traditional Balinese spatial layout, is, in this case, a traditional green open space, which has been introduced previously. This is a thought from Balinese ancestors who organized Balinese settlements, which has been carried out for a long time. People use *karang bengang* for agricultural activities because rice fields are one form of *karang bengang*. Rice fields are a part of *subak* where ritual activities in *subak* are carried out at the farmer level (on their respective rice fields), at the *subak* level (at the *subak* temple), and at other temples that are considered related to the *subak* water irrigation source. The ritual's purpose

is to ask God so that the farming business can succeed well (Mulyati, 2019). *Subak* itself has been designated as a world cultural heritage.

The *subak* ritual activity in *karang bengang*, which also marks the existence of the *karang bengang* boundary, is the *Nangluk Merana* ceremony. The *Nangluk Mrana* (*Merana*) ceremony is a *yadnya* ceremony that is carried out as a request to *Ida Sang Hyang Widhi*, God Almighty, to be willing to ward off or control disturbances that can bring destruction or disease to plants, such as rice in rice fields, animals and humans so that they do not dangerous again. "*Nangluk Mrana*" comes from Balinese words, which may also have Sanskrit influence, namely "*Nangluk*" which means dam, embankment, fence, or barrier, and "*Mrana*" means pests or disease. *Mrana* is a term commonly used to refer to types of diseases that damage plants. The form can be insects or animals or cosmic balance disturbances that have a detrimental impact on plants. So "*Nangluk Mrana*" means preventing or deterring pests (disease) or a ritual to repel evil (Ardiyasa, 2019).

In the Tegallalang Traditional Village, the *Nangluk Mrana* ceremony is held on *tilem kanem*. In traditional villages, the existence of *karang bengang* is marked by the presence of *tangluk* or the outermost boundary of the village, which is physically marked in the form of a *pemangkalan* (bamboo gate), which is closed by *kelangsah* (coconut leaf weaving) (Figure 4). Trees are often planted around *pemangkalan* to highlight the existence of *tangluk*.



**Figure 4.** The *Karang Bengang Tangluk* Shaped Like a *Pemangkalan* in the Kelabang Moding Traditional Village (left), and The Bamboo *Tangluk* Closed by a *Kelangsah* in the Tegallalang Traditional Village (left)

*Krama desa* carries out the *Nangluk Mrana* ceremony by bringing *pretima* belonging to the traditional village to the boundaries (*tangluk*) of the traditional village, *pura puseh*, *pura desa*, *pura dalem*, *pempatan agung* in the traditional village area by walking with *krama adat* (Figure 5). The *Nangluk Mrana* ceremony procession clearly shows the boundaries of the traditional settlement area tied to the Tri Kahyangan Temple and Kahyangan Village. Outside the boundaries of *tangluk* is what is known as *bengang* (empty) *karang bengang*.





**Figure 5.** *Nangluk Mrana Ceremony Procession*

### **Conservation *Karang Bengang* from the Role of Traditional Villages**

Traditional villages can play a role in conservation of *karang bengang*. Traditional villages have the authority and right to regulate and manage their households. Regulations in the form of *awig-awig* and *perarem* agreed upon by all village manners must be obeyed.

In Tegallalang Village, *awig-awig*'s traditional village, *karang bengang*, still needs to be regulated. However, there is an example of protection for *karang bengang* in *awig-awig* Buahhan Village in Tabanan District, Tabanan Regency. *Karang bengang* in Buahhan Village is divided into areas of rice fields, moors, and forests located between two rivers, namely Yeh Tabah River to the west and the Yeh Pembungan River to the north the east *Karang Bengang*, Buahhan Village. The *Karang bengang* area in Buahhan Village is protected by regulations at the traditional village level in the form of *perarem*, where every development carried out in the *Karang bengang* area in Buahhan Village by landowners from outside Buahhan Village will be charged 40 million rupiah which is paid to the Buahhan Traditional Village, done as a land conservation effort from land conversion (Wijaya et al., 2020).

## **Local Protection Areas and Zones as an Integration of *Karang Bengang* in Modern Spatial Planning**

One of the physical forms of *karang bengang* is rice fields. The government realizes that it is essential to control the conversion of rice fields into non-rice fields. For this reason, the government issued Law Number 41 of 2009 concerning protecting Sustainable Food Farming Land. Sustainable Food Agricultural Land is an area of agricultural land that is designated to be protected and developed consistently to produce staple food for national food independence, resilience, and sovereignty (*Undang-Undang Republik Indonesia Nomor 41 Tahun 2009 tentang Perlindungan Lahan Pertanian Pangan Berkelanjutan*, 2009).

Apart from that, the government also issued *Peraturan Presiden Nomor 59 Tahun 2019 tentang Pengendalian Alih Fungsi Lahan Sawah* (2019). Article 6 states that protected rice fields are determined in the map of protected rice fields, including irrigated rice fields and non-irrigated rice fields. Article 7 states that the rice fields specified in the rice field map are in protected areas or cultivation areas *Peraturan Presiden Nomor 59 Tahun 2019 tentang Pengendalian Alih Fungsi Lahan Sawah* (2019).

In the Bali Province Regional Regulation Number 2 of 2023 concerning the Bali Province Regional Spatial Plan for 2023-2043/(*Peraturan Daerah Provinsi Bali Nomor 2 Tahun 2023 tentang Rencana Tata Ruang Wilayah Provinsi Bali Tahun 2023-2043*), local wisdom owned by Bali is included in the local protection area. A local protected area is designated for land use activities that uphold noble values in community life to protect and manage the environment sustainably and maintain the quantity and quality of water supply, fluency, orderly regulation, and water use. from water sources, including local wisdom areas and borders that function as protected areas, including sacred areas, sacred place areas, beach borders, rivers, springs, lakes, reservoirs, reservoirs and ravines, as well as other areas that have local protection function (Chapter I General Provisions, Article 1, No. 44).

*Karang bengang*, as local wisdom, is more specifically contained in article 76, which outlines the zoning directions for the central settlement system. In article 76, point 2, the indication of the zoning direction for the central settlement system is structured as forming a settlement system with Balinese cultural identity. Point 2, letter d explains that the application of the *karang bengang* and LP2B concepts as buffer zones for urban settlements. Point 2, letter d equates the shape of *karang bengang* as being limited to rice fields (sustainable food agricultural land), even though the shape of *karang bengang* is not only rice fields. The provincial spatial plan still needs to accommodate the *karang bengang* concept fully.

Gianyar Regency Regional Regulation Number 2 of 2023 concerning Gianyar Regency Spatial Planning for 2023-2043/(*Peraturan Daerah Kabupaten Gianyar Nomor 2 Tahun 2023 tentang Rencana Tata Ruang Wilayah Kabupaten Gianyar Tahun 2023-2043*), Article 56 states, "the application of the *karang bengang* concept or elongated open space in the form of agricultural land managed on a Subak basis as a buffer for rural settlements." *Karang bengang* is recognized as an open space, and its form is *subak*-based agricultural land.

In Gianyar Regent Regional Regulation Number 1 of 2024 concerning Detailed Spatial Plan for Tegallalang District for 2024-2044/*Peraturan Daerah Bupati Gianyar Nomor 1 Tahun 2024 Tentang Rencana Detail Tata Ruang Kecamatan Tegallalang Tahun 2024-2044* does not mention *karang bengang*, but in Chapter I Concerning General Provisions Number 72, which reads "Local Protection Zone hereinafter referred to as Local Protection Zone is an area designated for land use activities that uphold noble values in community life to protect and manage the environment sustainably, and can maintain the quantity, quality of water supply, fluency, orderly regulation and use of water. from water sources, including local wisdom areas, sacred areas, sacred areas, and borders that function as protected areas, including coastal borders, rivers, and other areas with a local protection function". *Karang bengang*, as a local wisdom, should be contained in chapter 1.

Local Protection Areas and Zones should be an opportunity to integrate traditional spatial planning because the existing *karang bengang* is a space with noble values and is part of the regional spatial planning. More effort is needed for traditional villages to identify their traditional spatial layout and map it so that it becomes input in preparing regional spatial planning for the government. The government is also active in bridging the inclusion of traditional spatial planning into modern spatial planning.

## CONCLUSIONS

*Karang bengang* is a legacy of traditional Balinese spatial planning wisdom, especially as a traditional green open space. Its presence gives Bali's green space a distinctive characteristic that differentiates it from other areas. It is a green open space, and *karang bengang* accommodates ritual activities from traditional villages. Traditional villages play a role in protecting *karang bengang* through their *awig-awig*, which binds all manners. Meanwhile, the government can integrate the protection of *karang bengang* through protected rice fields (LSD), sustainable agricultural food lands (LP2B), and protection through local protection areas or zones in regional spatial planning (RTRW) at the provincial and regency levels as well as in detailed governance spatial plans (RDTR) so that *karang bengang* can become a sustainable green open space.

Currently, this integration is not running optimally. However, it has been an effort to integrate traditional spatial layouts into modern ones. It is necessary to supply data from traditional villagers regarding traditional spatial planning included in the local area or protection zone so that the government can accommodate it in regional spatial planning regulations.

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