

MODEL OF TRADITIONAL SETTLEMENT LANDSCAPE OF LAKKANG ISLAND BASED ON LOCAL CULTURE

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Abstract

Lakkang Island is one of the districts that still maintains cultural and traditional values and it is located within the provincial capital. Lakkang Island is also used as a cultural tourism destination by the Makassar City government. The impact of urban development affects all areas of the city with the modern style and culture of the city. The effort to mapping the landscape model of Lakkang Island is one of the cultural landscape preservation efforts that still maintained for the purpose of cultural tourism destinations. This research aims to identify the character of the traditional settlement landscape, analyze traditional landscape forming elements, and develop a landscape model for the traditional settlements of Lakkang Island. The method used in this research is descriptive method, through literature studies, interviews, and field observations. The analysis was carried out descriptively and spatially. The landscape character of Lakkang Island shows a flat landform with landscape features that shape it. The landscape character forming elements of Lakkang Island are formed by natural landscape features and man-made landscape features. The traditional settlement landscape model of Lakkang Island is in the form of a nucleated cluster pattern with a unique spatial pattern. The center of the model is bamboo forests in the form of conservation green open spaces. The core zone consists of settlements flanked by conservation zones in the form of mangrove forests, nipa forests, and bamboo forests, surrounded by utilization zones in the form of gardens, rice fields and fishponds and protected by buffer zones in the form of Tallo River. The traditional activities of the Lakkang Island people do not leave their territory, except for the laying offerings ceremony.

Keywords: Bugis-Makassar; Landscape character; Landscape design; Local wisdom;
Vernacular landscape

Introduction

Landscape character is a pattern of elements that occur consistently in a particular landscape. A landscape character is formed as a result of the interaction between nature and human actions. A landscape that has a strong character can be caused by the interaction between major landscape features and minor landscape features. Landscape characters are formed by landscape elements such as landscapes, land cover, hydrology, settlements, and also historical and cultural artifacts [1-3]. Cultural identity is closely related to the way how humans interact with their landscapes. The spatial association of these elements forms a very strong character. The existence of traditional communities reflects the character of certain cultural landscapes that are used to support their life [4-5]. One of the ethnic or tribal groups in Indonesia that has a distinctive culture is the Bugis-Makassar in Makassar City.

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There are social values in Bugis-Makassar people's life that form local wisdom and have been embraced and become a part of their daily life. Along with rapid development and social change, various Bugis-Makassar traditions and cultures have shifted old cultural values and presented new cultural values that will affect their individual and community lives, social environments and traditional environments [6]. One of the cultural landscape ethnics of Bugis-Makassar that is still preserved in the form of traditional settlements is Lakkang Island. This island is surrounded by mangrove and nipa forests and there are also traditional houses. The indigenous people of this island are still strong in maintaining their customs, so that they become a reference for the Bugis-Makassar indigenous people who still survive in the middle of the flow of change in Makassar City. Lakkang Island is included in the list of Regional Strategic Tourism Areas IV that listed in the strategic implementation program carried out by the Historical and Ecotourism Creativity Centre and Strategic Area of the City with the Interests of Environmental Functions and Powers [7-9].

Low public knowledge about cultural values in architecture and traditions can caused the heritage of cultural traditions become vanish or slowly disappear [5]. To avoid the extinction of these cultural artefacts and traditions, it is necessary to conduct research, particularly related to the traditional landscape model of the Bugis-Makassar indigenous people. The landscape model provides an overview of the pattern and layout of landscape elements and spaces, as well as the daily activities of indigenous peoples based on local culture [10-14].

Today, attention is paid to current norms in the field of scientific conservation of crops and natural goods [15-17]. Many schools in the field of architecture and land planning, for the valorization of these assets, pays special attention in all teaching and research activities, a special place is occupied by the training of young specialists and modern policies conservation and restoration [18-21]. Local wisdom related to the settlement landscape is also an important component in describing the model [9].

The purpose of this study was to identify the character of the landscape, analyze the the traditional landscape building elements and spaces of Lakkang Island, and develop a landscape model for the traditional settlements of Lakkang Island based on local culture.

Materials and Method

This research was conducted on Lakkang Island, Tallo District, Makassar City, South Sulawesi. The location of the research can be seen in figure 1.

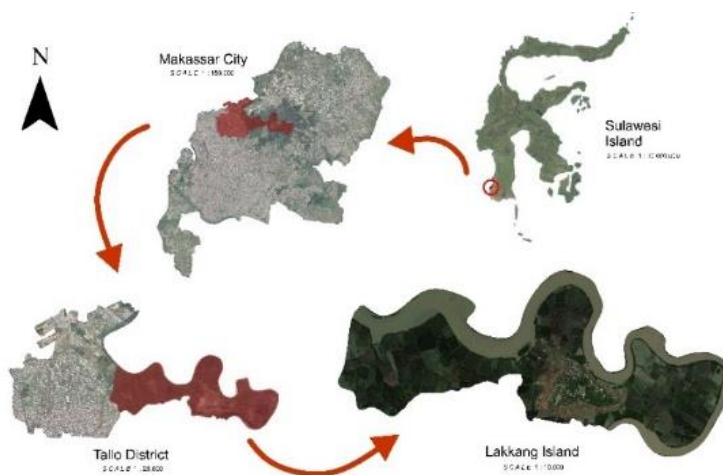


Fig. 1. Research Site (Source: Google Earth)

Lakkang Island is an urban village area that physically mostly surrounded by rivers. The research was conducted using a descriptive approach through literature research, interviews with traditional figures and field observations [4-5, 10-14].

Literature Study

A literature study was conducted to obtain informations related to the landscape character of the research location, especially Lakkang Island. This literature study includes seeking for traditional texts and other documents/references. An initial search of the traditional texts was carried out to find out the existence and types of traditional scripts [22] that still exist in the middle of indigenous peoples of Lakkang Island. Existing manuscripts are needed to obtain information and customary provisions related to the landscape building elements. The next step is seeking the existing documents or references related to the Bugis-Makassar community. These documents or references can be in the form of reference books (printed or electronic), scientific research articles published in national and international journals, local government monographs, and so on [5, 10, 23]. These search of document or reference are carried out more in-depth if traditional texts are not available. Both searches were carried out to produce landscape character forming features of Lakkang Island’s settlement landscape (Table 1).

Table 1. The character-forming features of the Lakkang Island landscape

No	Landscape Features	Landscape Elements	Description
1	Natural Features	Vegetation	Mangrove Forest Nipa Forest Bamboo Forest
		Hydrology	River
2	Man-made Features	Building	Traditional House Modern House Bugis’s Traditional House (Baruga)
		Plants	Rice field Garden
		Pavement	Street
		Water	Fishpond
3	Intangible Features	Traditional Events	Individual traditional ceremony Community traditional ceremony

Sources: [4, 5, 10]

Interviews

Interviews with traditional figures of the Lakkang Island community were carried out based on the results of the study literature stage as presented in Table 1. The interviewees were determined by considering the background of the respondents such as traditional leaders or traditional leaders of the Lakkang Island community, and/or Bugis-Makassar cultural experts (purposive sampling) [10-14]. Interviews were conducted through the in-depth interview method. Respondents must meet criteria such as traditional leaders, mastering customary rules, implementing customary provisions/rules in their daily lives, and willing to be interviewed.

Field Observation

The field observation stage was carried out to verify the results of interviews with traditional figures. This is intended to find out further whether the data/information that collected at the previous stage is still exist in the community of Lakkang Island [10-14].

The analysis was carried out spatially and descriptively [10, 13]. Spatial analysis is used to determine the relationship between biophysical and cultural aspects of the data so that it can be identified as the order of landscape character building elements and the factors that influence the landscape character elements [4]. Descriptive analysis is used to explain the data/information that has been collected, either in the form of the results of literature studies, interviews, and field observations. The final result of the data/information is compiled in the form of a cultural-based spatial model and the descriptions of the traditional settlement landscape of Lakkang Island.

Results and discussion

Landscape Character

Geographically, Lakkang Island is in Lakkang Urban Village, which is under the government of Tallo District, which is located in Makassar City, South Sulawesi Province with total area of 1.65km² and a population of 1,075 inhabitants. Lakkang Island is located at an altitude of 0-25 meters above sea level with a low or flat slope of <8%. The type of soil on Lakkang Island is *Tropaquepts* soil which is a great group of the Inceptisol order. Lakkang Island has an average annual temperature of 26.4°C with an average annual relative humidity (RH) of 67.25% [23].

The landscape character of Lakkang Island shows a flat landform with natural and man-made features that form a unique landscape. The natural features that make Lakkang Island unique are the land cover elements of rivers and forests that surround most of the area's boundaries. The man-made features that show the culture of the local community are settlements, agricultural land, and fishponds. The interaction of these features forms a special landscape character [3, 4], namely the cultural landscape of Lakkang Island (Fig. 2).

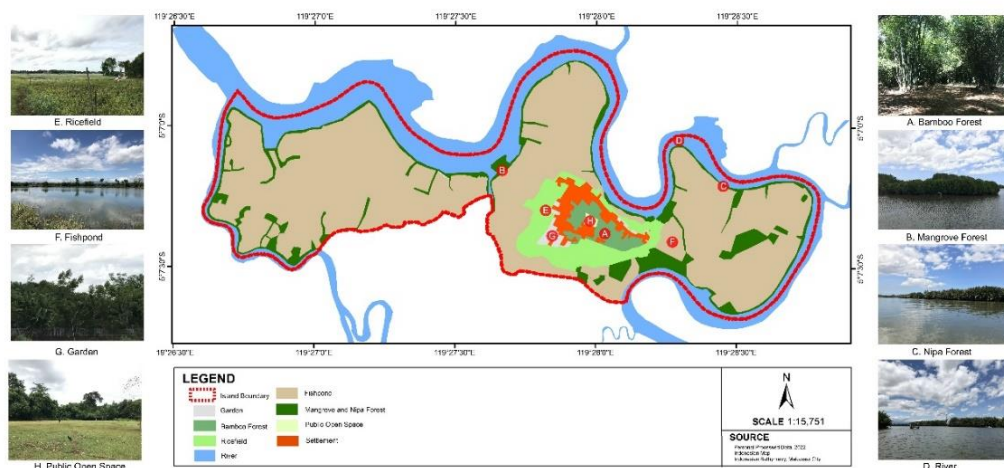


Fig. 2. Land Cover Map of Lakkang Island

Landscape Character-Forming Elements

Based on the literature study, the Bugis-Makassar community on Lakkang Island does not have a traditional script. Therefore, information about the landscape building elements can be seen from the results of reference documents, interviews and field observations as presented in Table 2.

The landscape of Lakkang Island has landscape elements that form natural landscape features and man-made landscape features. These elements form the character of Lakkang Island which is the cultural landscape of the Bugis-Makassar indigenous people. The natural features forming elements of Lakkang Island area include rivers, mangrove forests, nipa forests, and bamboo forests. The mangrove forest and nipa forest grow along the river. These forests ecologically help in maintaining river aberrations on the mainland shores of Lakkang Island [24]. In addition, these forests are also economic resources for the people of the island [9]. Bamboo forests are able to prevent soil erosion and are able to store runoff water [24].

Table 2. The layout of the landscape character-forming elements of the Lakkang Island

No	Types of Landscape Elements	Landscape Elements	Layout	Roles in Daily and Traditional Activities
1	Natural Landscape Features	Forest	Center and Scattered (West, North, East)	Utilization of forest resources, sources of income are from fisheries in mangrove areas
		River	Scattered (West, North, East)	As a crossing transportation vehicle, sources of income are from fisheries, <i>Appanaung Rije'ne</i>
2	Man-made Landscape Features	Rice Field	Around (West, North, East, South)	As food needs, <i>Dengka Ase Lolo</i>
		Fishpond	Around (West, North, East, South)	As food needs, sources of income are from fisheries
		Garden	Scattered (West, North, South)	As additional food needs
		<i>Baruga</i>	Center	Meeting hall for gathering of the local community
		Traditional House	Center	Residence, <i>Appa' Bunting/Botting, Ammateang, Anggakka/Mappalette Bola</i>
		Cemetery	Center	The burial place of traditional and public figures
		Public Open Space	Center	A place for various activities such as sports, exhibition events, religious events, <i>Pamanca</i>

Natural landscape features are major features whose elements are naturally formed and cannot or difficult to change [3, 4]. Natural landscapes have a harmony and balance between the various natural constituent elements such as land surface, mountains, vegetation and animals that will form the character of the landscape naturally [3]. The character-forming elements of the landscape as natural landscape features on Lakkang Island, consist of rivers and forests (Fig. 2).

The river is a natural landscape feature that has a strong character so that it becomes a tourist attraction and a source of life for the people in Lakkang Island [9]. In addition, the river is also the main access to come and go from the traditional settlements of Lakkang Island. The existence of the river is very important in the daily lives of the people in Lakkang Island which becomes one of the dominant livelihoods in fulfilling their daily lives. This is a hereditary legacy of Lakkang Island's people that still exists [6].

The forest in Lakkang Island includes several types of forest, including bamboo forest, mangrove forest and nipa forest. Some communities manage and utilize bamboo forests as one of the necessities of life for the community. However, some people still maintain the preservation of bamboo forests as an ecological function. Nipa and mangrove forests decrease in population every year and government policies in the efforts of conservation have minimized the negative impacts, but the enhancement is still not maximum because there are some people use them as ponds that will produce fish and shrimp to meet their daily needs. This is caused by the lack of public knowledge of the importance in maintaining nipa and mangrove forests as natural and socio-economic disaster mitigation [24]. However, the mangrove and nipa forests in Lakkang Island are well maintained and covering almost the entire riverside. Bamboo forests are the result of local community activities, and placing the bamboo plants in the middle of their settlements is done to facilitate the utilization of these bamboo forests.

The man-made features in Lakkang Island include elements such as traditional houses, fishponds, rice fields, cemeteries, public open spaces and gardens. From the point of view of the space requirements of a settlement, this man-made feature has fulfilled the daily needs of the local community such as food and house needs. The clothing needs still have to be met from the outside of this settlement landscape.

Building Elements

The forming elements of traditional settlements are buildings that consist of traditional houses, modern houses, *baruga*, mosques, urban village head offices, auxiliary health centers,

schools, and docks. The traditional houses of the people in Lakkang Island are a representation of the traditional Bugis-Makassar houses which generally have three parts (Fig. 3). The three parts are the upper, middle, and lower. The upper part or the upper realm has a traditional philosophy of being a supernatural space inhabited by gods, the unseen world, etc. The top or roof of the house (*Rakkeang/Pamakkang*) is the upper realm which is closely related to worship of God Almighty. The middle part or the middle realm is the natural world, the human realm, the place of residence (*Ale bola/Kale balla*). This section is closely related to human relations activities. The lower part (*Awa bola/Passiringang*) is the underworld which is the realm of spirits such as jinn. Currently, the upper space is used for storage of agricultural products such as rice and other supplies as well as heirlooms; the middle part is used as a residential room and a place to live for the house's owner and his family as well as a place to receive guests other than his family; and the lower part is used as a place of business, warehouse, and cattle pen [25].



Fig. 3. Traditional house of Lakkang Island

The horizontal spatial pattern of this traditional house can be seen in figure 4. The layout of the traditional house of the indigenous people in Lakkang Island has a general pattern like other indigenous peoples such as Minangkabau [11] and Sundanese [26] which consists of public space, family room (private) and service room. Public spaces in this traditional house on Lakkang Island include the front yard, terrace (*Lego-lego*), and side entrance (*Jambang*). The family room in this house includes a family sitting room (*Lontang risaliweng*), bedroom (*Lontang retengngah*), and a dining room (*Tamping*). The service room includes a kitchen room (*Dapureng*) and a backyard garden.

Other building elements in the form of modern residences, community meeting halls (*Baruga*), mosques, urban village head offices, auxiliary health centers, and docks have changes, especially from building materials to brick walls and so on. However, the architecture still follows the traditional Bugis-Makassar architectural pattern and it is no longer a house on stilts. Some of these buildings can be seen in figure 5. There are many buildings that still maintain the traditional architecture and original materials, which is around 70 percent. Even though the change in the utilization of modern materials and the location at the bottom or the underworld (*Awa bola*), not a house on stilts, the philosophy of the lower realm is still avoided to become a residential space, by raising the floor of the entire living space in the house higher than the outside space. This means eliminating the function of the lower space or the underworld in the traditional residential concept, even though physically the space still exists in the form of elevated land.

Baruga functioned as a gathering place or meeting of the leaders, intellectuals and artists to discuss something about the kingdom as well as a place to receive and resolve conflicts that occurred in the community as well as a place to receive guest visits. Currently the new building is placed next to Urban Village Head's office. This is intended so the building has a function as a community meeting hall and other socio-cultural activities. The placement of the *baruga* building is still in line with the traditional concept, which is the *baruga* placed next to the traditional leader's house. This is to make it easier for traditional leaders to organize and attend traditional activities.

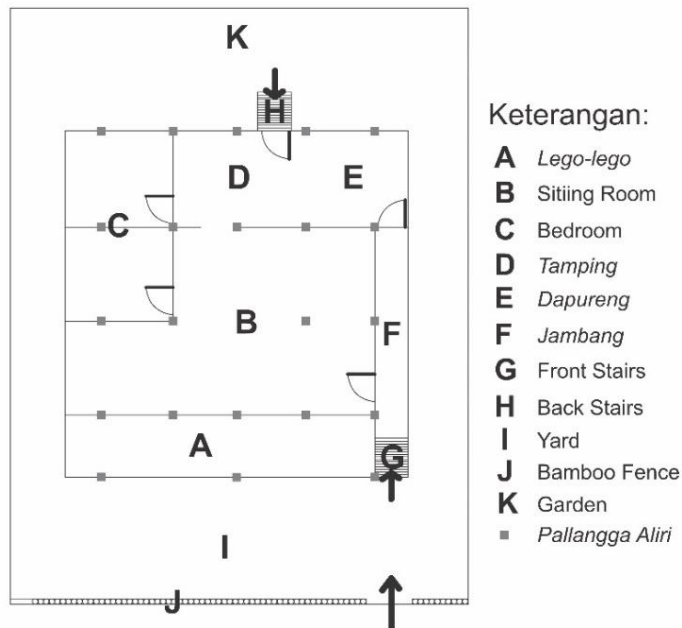


Fig. 4. Traditional house plan pattern of Lakkang Island



Modern House



Urban Village Head Office



Baruga

Fig. 5. Buildings other than traditional houses

Cemeteries and Public Open Spaces

Cemeteries and public open spaces are elements located in the middle of settlements with the consideration that they are easily accessible by the community and located at highlands to anticipate the rising water level of the river and avoid the flood (Fig. 6). The cemetery is a public space that has a high sacred value. The cemetery was originally a burial place for the founder of the traditional figure of Lakkang Island, namely Daeng Ri Lakkang, but it is develop become a public cemetery that can be used as a burial place for family members of the Lakkang Island community. Public open space is a shared space used by the community to held various daily and incidental activities such as sports, traditional and religious events, exhibition events, and others.



Fig. 6. Cemeteries and Public Open Spaces

Cultural Character

The cultural character in Lakkang Island is characterized by cultural-based community activities that affect the spatial landscape of the local settlement. Cultural activities are traditional activities, both in the form of daily activities and traditional ceremonial activities. Cultural activities in Lakkang Island include *Appanaung Rije'ne* (Laying offerings ceremony), *Dengka Ase Lolo* (post-harvest celebration event), *Appa' Bunting/Botting* (Wedding ceremony), *Ammateang* (Death event), and *Anggakka/Mappalette Bola* (Tradition of moving house), and *Pamanca* (Traditional Martial Arts). A brief description of customary activities is as follows:

1. *Appanaung Rije'ne* (Laying offerings ceremony). This tradition is carried out by the community when they want to go to sea with the aim of obtaining a lot of fortune and being safe on their journey.
2. *Dengka Ase Lolo* (Post-harvest celebration event). The *dengka ase lolo* tradition is a tradition in agriculture that is carried out once in a rice harvest season by carrying out a rice pounding ceremony as a form of gratitude to Allah SWT for abundant harvests.
3. *Appa' Bunting/Botting* (Wedding ceremony). The traditional wedding ceremony of the Bugis-Makassar is one of the complex wedding cultures and involves a lot of emotions, from the proposal ritual to the completion of the wedding reception. The wedding is held in the front yard of the bride's house.
4. *Ammateang* (Death event). *Ammateang* is a death ceremony with acculturation of Islamic guidance carried out by the Bugis-Makassar tribal community. This ctivity carried out starting from the house to the cemetery.
5. *Anggakka/Mappalette Bola* (Tradition of moving house). The tradition of moving house is a tradition by moving or lifting the old traditional house on stilts to a new place in mutual cooperation led by a traditional leader or local traditional figure. Usually, this tradition is carried out when people who want to move and sell their houses or their lands are sold.
6. *Pamanca* (Traditional martial arts). *Pamanca* is one of the traditional forms of martial arts performances in Makassar, which is sporting and accompanied by traditional musical instruments such as drums, flutes and gongs. Usually, *Pamanca* is performed as a cultural attraction that aims to entertain in an event held by an agency or presented in a community activity in the community such as traditional events, weddings and other celebrations.

Traditional Settlement Landscape Model

The landscape character of the traditional settlements of Lakkang Island is influenced by the natural and man-made features that shape the character. These natural features are formed by natural elements in the form of landform levels (flat landforms), rivers, and forests. Man-made features that support it are fishponds, rice fields, gardens, and settlements. The uniqueness of this character is that Lakkang Island is surrounded by very wide rivers, forests, fishponds, and rice fields. This pattern is rarely found in other traditional settlements in Indonesia.

In general, the settlement patterns of the Bugis-Makassar communities are settlements that are close to their livelihoods or their work places. Patterns of settlements that close to rivers or waterfronts and fishing settlements are generally linear or elongated on riverside or waterfronts, however, Lakkang Island traditional settlements are centralized or nucleated (Fig. 7), according to the category [27]. The Lakkang Island settlement is square with the overall pattern of the road network is rectangular. Settlements are clustered following the circulation of roads, both main roads and neighbourhood roads and the location of community livelihoods. The clustering pattern is composed of houses located in the middle of a settlement neighbourhood which are formed opposite and back-to-back patterns [28].

Cultural influences are still very visible in the process of forming Bugis-Makassar settlements. The orientation of the Bugis-Makassar houses is generally oriented to all cardinal directions based on the consideration of public trust, but the best and the most recommended orientation are west and east. Besides being oriented to the four cardinal directions, it is also topography oriented [29]. The existence of the river is considered a low topography, so the traditional Bugis-Makassar houses are placed back to the river and higher ground oriented, which is hilly and flat land (rice fields and roads) around the settlements. In Bugis-Makassar’s cosmology, hills are considered the upper world or the head (a good and holy place) so that they can provide a better life, besides those around flat settlements can be processed into gardens or rice fields which are sources of community income [30]. The influence of culture and belief shows the arrangement and pattern of space, utilization of natural resources, building architecture and historical heritage.

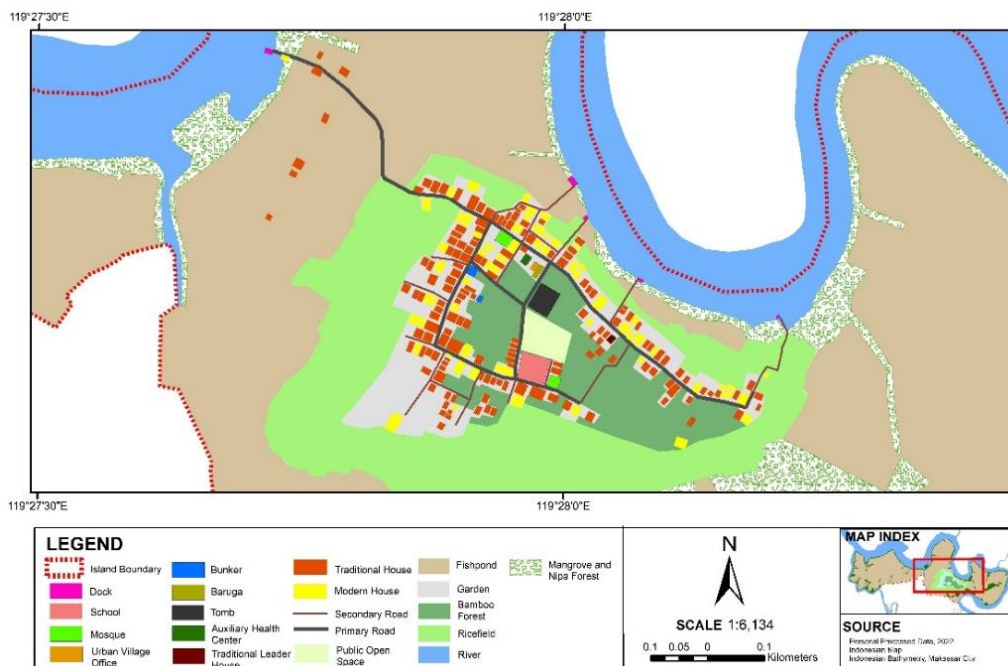


Fig. 7. Landscape Layout of Traditional Settlements of Lakkang Island

The characteristics of the traditional settlement orientation of Lakkang Island generally consider the best orientation direction, which is the west direction, facing a higher topography and the orientation towards the road. Socio-cultural aspects (livelihoods, traditions, culture, kinship) and physical environmental aspects (natural resources, topography) cause the Lakkang Island settlements to form clustered patterns [5, 10], with agglomerated rural settlements in the

form of villages [5, 10, 29] and the form of cluster village settlement which means the form of settlement in a centralized place surrounded by rice fields of the land it cultivates [27]. The location of the traditional leader's house is in the north and is in the middle of the centre of settlement facilities that can facilitate incidental activities. However, the orientation of traditional leader's house only follows the Bugis-Makassar residence orientation, which is oriented to all cardinal directions and there are no special rules regarding the location of the traditional leader's house. The traditional leader will be replaced if he passes away and the position of the traditional leader will be replaced based on his descendants.

Based on its nature and function, the Lakkang Island area is included in the category of conservation area, which is divided into four zones, there are the core zone, conservation zone, utilization zone and buffer zone. The core zone is a settlement area for the traditional community of Lakkang Island. In this zone there is a concept of the traditional settlement area of Lakkang Island, which is divided into three spaces, that are: (1) private space is a space that is only accessed by the space's owner or occupant, including traditional houses and modern houses and the surrounding space. Private space accommodates the need for housing and personal activities, (2) public space is a space that can be accessed by everyone, includes elements in the public space social facilities such as docks, schools, mosques, village head offices, sub-health centres, baruga, fields, bunkers and roads. Open space accommodates people's daily needs, (3) semi-public space is a space that cannot be used under certain conditions, such as a cemetery. The conservation zone is an area that is absolutely protected on Lakkang Island to protect and preserve habitat and population of resources such as bamboo, nipah and mangrove forest areas. Utilization zone is an area that is used for the purposes of supporting cultivation activities such as small community gardens, rice fields, and fishponds. The buffer zone is an area to support the main zone, prevent damage or protect from various kinds of disturbances. The landscape of traditional settlements of the Bugis-Makassar cultural community on Lakkang Island is the main area that must be maintained as a cultural tourism destination. Therefore, the Tallo River is one of the important buffer zones, in addition to the mangrove forest and nipa forest.

The concept of vegetation in the Lakkang Island area is generally based on its functions and benefits for the community. Vegetation is divided into two, which are production vegetation and conservation vegetation. Production vegetation is vegetation that serves as community needs, including rice fields such as rice (*Oryza sativa L.*) and small community gardens such as bananas (*Musa paradisiaca*), cassava (*Manihot utilissima*), mango (*Mangifera indica*), guava (*Psidium guajava*), papaya (*Artocarpus heterophyllum*), dragon fruit (*Hylocereus polyrhizus*) and others. Conservation vegetation is vegetation that protect the environment, including forests (bamboo, nipa and mangrove). Nipa and mangrove forests located along embankments of fishponds and riverside that provide several specific functions, especially environmental protection, such as controlling seawater intrusion, preventing abrasion, cleaning water from pollutants, reducing environmental temperature, reducing the height and speed of wave currents and increasing fishery income or economic profit [24].

The concept of circulation in the Lakkang Island area is divided into main roads and environmental roads. The main road is the primary circulation that connects settlements with other landscape elements and settlements facilities. Environmental road is a secondary circulation that connects cluster to cluster in settlements. Traditional settlement landscape elements are a reflection of community activities in the area which consist of daily and incidental activities [10]. The relationship between traditional community activities and elements of the traditional settlement landscape of Lakkang Island can be presented in Table 3. There are six main traditional activities that become the traditions of the people of Lakkang Island, and two of them make use of the elements/space of the settlement landscape, namely the activity of laying offerings (*Appanaung rije'ne*). and post-harvest thanksgiving (*Dengka ase lolo*). The two activities indeed go through an implementation process that starts from the house of each resident and involves the customary leader, and simultaneously follows the main road to the place of the traditional

event. Traditional activities that are relatively implemented in only one place are traditional martial arts (*Pamanca*), it is enough to gather in an open field and carry out activities in that place. Spatially, the relationship between elements/spaces of the settlement landscape and activities can be seen in the Lakkang Island settlement landscape model in figure 8.

Table 3. Relationship of community activities with elements of the settlement landscape

No	Activities	Elements of the Settlement Landscape												
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Laying offerings ceremony (<i>Appanaung ri je'ne</i>)	•	•	•	•	•	•	•			•			
2	Post-harvest celebration ceremony (<i>Dengka ase lolo</i>)	•		•	•	•						•		•
3	Wedding ceremony (<i>Appa' bunting</i>)	•			•					•				
4	Death ceremony (<i>Ammateang</i>)	•			•				•	•				
5	Tradition of moving house (<i>Anggakka</i>)	•			•									
6	Tradisional Martial Arts (<i>Pamanca</i>)							•						

Description: (1) Traditional house; (2) Modern house; (3) Traditional leader's house; (4) the main road ends at the dock; (5) *Baruga*; (6) Dock; (7) Public Open Space; (8) Cemetery; (9) Mosque; (10) River; (11) Fishpond; (12) Forest; (13) Rice field

The traditional settlement landscape model of Lakkang Island shows a distinctive character, namely the cluster settlement pattern with a green open space called the nucleated cluster pattern in the centre. This model is different from the previous studies model on the Minangkabau indigenous peoples [10], Lampung Pepadun [13], Sasak Limbungan [5] which formed cluster patterns and linear patterns. The green open space is a bamboo forest underneath can be used for children's play activities or other activities. The movement of community activities as listed in Table 3 can be seen spatially in figure 8.

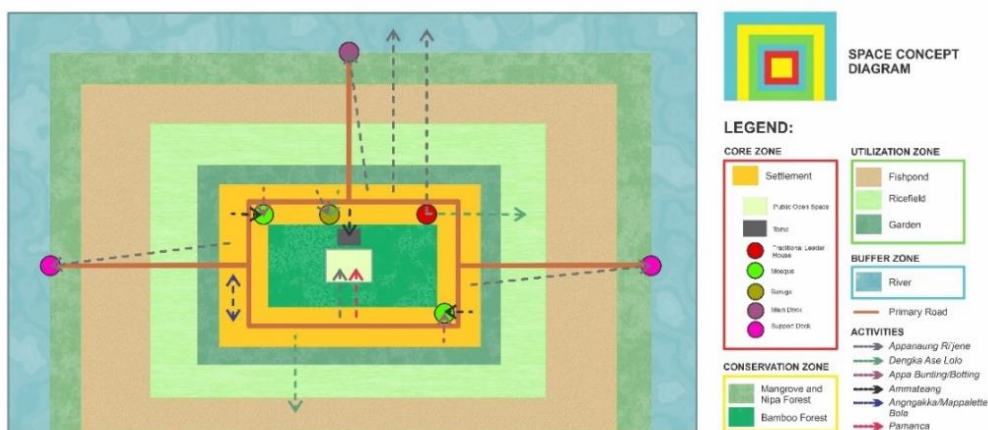


Fig. 8. Spatial Model of Lakkang Island Traditional Settlement Landscape

The relationship between elements/spaces vertically can be seen in figure 9.

The settlement landscape of Lakkang Island is surrounded by rivers and flanked by conservation areas of mangrove forests and nipa palm forests, and bamboo forests as the center. This model is ideal for maintaining the sustainable development of the area that maintains local cultural traditions.

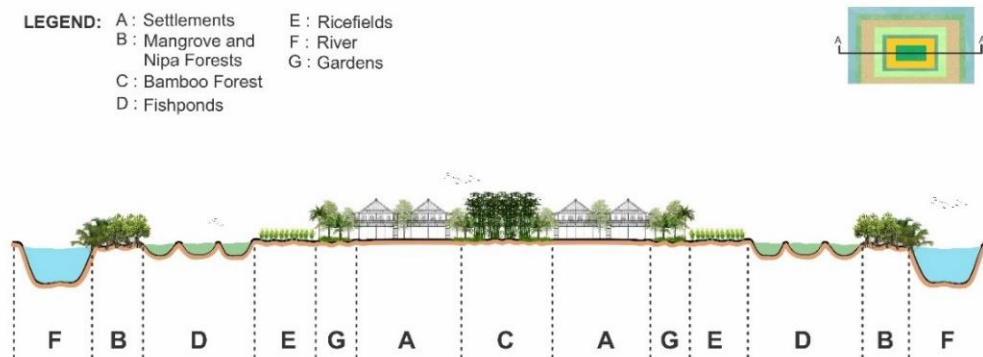


Fig. 9. Vertical Space Model

Conclusions

Lakkang Island is one of the urban villages in a sub-district in Makassar City, the capital city South Sulawesi. The landscape character of Lakkang Island which is relatively flat is formed by natural and man-made features, as well as intangible features. The natural features that support it are the Tallo River and forest (bamboo, mangrove, and nipa). The man-made features that support it consist of elements of rice fields, gardens, fishponds, and settlements. Important intangible features are *Appanaung Rije'ne* (Laying offerings), *Dengka Ase Lolo* (Post-harvest celebration event), *Appa' Bunting* (Wedding ceremony), *Ammateang* (Death ceremony), *Angkakka Bola* (tradition of house-moving), *Pamanca* (traditional martial arts).

The traditional settlement landscape model of Lakkang Island is in the form of a nucleated cluster pattern with a unique spatial pattern. The center of the model is a bamboo forest in the form of a conservation green open space. Settlements which are the core zone are flanked by conservation areas in the form of mangrove forests, nipa forests, and bamboo forests. Rice fields and fishponds surround the settlement. The traditional activities of the people of Lakkang Island do not leave their territory, except for the activity of laying offerings ceremony.

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Received: April 30, 2022

Accepted: November 12, 2022