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Spatial Historical Evolution of Urban Tosora Cultural Heritage

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Abstract: Between the 15th and the 20th centuries, Tosora was a small city in the Wajo Kingdom. During its development, Tosora became the centre of global trade of the Bugis civilisation and produced several artefacts of potential cultural heritage value which were damaged during the war with the Dutch in the 20th century. These artefacts, which include Islamic architecture, urban infrastructure, and graves of important personages of the Wayo Kingdom, risk disappearing if they are not properly managed. This study aims to map both the physical and non-physical historical products of Tosora for their spatial realisation to aid the effort to promote tourism. We mapped the physical development of the area, especially elements of its cultural heritage and activities, to reveal historical facts about the Wajo Kingdom. We used a qualitative approach based on several methods, from GIS-based spatial analysis for connecting activities to synchronic and diachronic reading techniques for analysing elements of urban morphology to study Tosora's development. The study found that the spatial evolution of urban Tosora was related to its historical process since the 15th century and was based on non-physical forces that influenced the physical urban form of the city. The shift of the government centre from Wajo-Wajo to Tosora in the 17th century and later to Sengkang in the 20th century was dominated by social, economic, political and cultural factors. The Wajo Kingdom's end is reflected in the decline in Tosora's functions and roles.

1. INTRODUCTION

Tosora is located along the Cenrana River near the Tempe Lake in Wajo Regency, South Sulawesi Province, Indonesia. It was a capital of the Wajo Kingdom which was a destination for local, regional and international traders from the 14th century onwards. This territory evolved from a settlement to one of the major kingdoms in South Sulawesi. Tosora assumed a strategic position when the river became a primary means of transport. It is also accessible from Bone via the Cenrana River. Being the capital of the Wajo Kingdom, it developed as a trading centre for many outside traders. Although Islam was first taught by an Arab missionary, Sheik Jamaluddin Al Akbar Al Husaini, in



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the 14th century, it was officially adopted by the people of Tosora only in 1610, and as a result, a permanent mosque was established in 1621 (Duli, 2012). Tosora is in a fertile region and has several small lakes, rice fields, and plantations, making it a place where people were interested in living and working. In addition, the people of Tosora lost a war with the Dutch East India Company (*Vereenigde Oostindische Compagnie*, VOC) and its allies (the kingdoms of Bone and Soppeng) in the 17th century. Tosora gained independence in the 18th century through a struggle led by Arung Matoa La Maddukkelleng (Duli, 2012).

The physical development of Tosora since the 15th century is closely related to non-physical aspects and can be identified through its history. Fadillah, Mahmud et al. (2020) and Duli (2010, 2012) have explained it based on the Bugis manuscript and using the connectedness hypothesis. The key points of the hypothesis cover four aspects. The first, the formation of the Wajo Kingdom, was influenced by spiritual figures who embraced the community, from the *bataru* (ruler) era to the *arung matowa* (senior lord) period. The second, economic development, was supported by the development of agricultural technology and local and international trade. The third, the development of Islam since 1610, had a strong influence on the terrain of Tosora. The fourth, political developments, were motivated by territorial control through wars between the Wajo Kingdom and the VOC and its colonies.

Urban Tosora is formed centrally with a grid road pattern. Topographically, it is located on a plain bordering a lowland area (along the riverbank) and some rice fields. The settlements of Tosora are divided into three typologies or three *limpo*: urban areas around the forest (*talo'tenreng*); those around rice fields (*bettempola*); and fishing settlements (*tuwa*), as shown in Figure 1. This demarcation is thus based on typological or regional characteristics, such as mountains, plains and coastal areas, and the type of work of the community. The *talo'tenreng* area is so defined because the population mainly works in the forest to extract palm tree sap, the *bettempola* area because the population is predominantly engaged in farming, and the *tuwa* area because the primary occupation of the population is fishing (Fadillah, 2004).

The Bugis community's knowledge of agricultural technology in the 16th century influenced the expansion of agricultural land and its production, and subsequently influenced the occupations, as well as the growth, of the settlement hierarchy (Mansyur, Fadillah et al., 2022). Technical expertise in wet rice cultivation enabled the creation of an agriculture-based economic space to meet the basic needs of the community (Fadillah, Mahmud et al., 2020; Macknight, 1983).

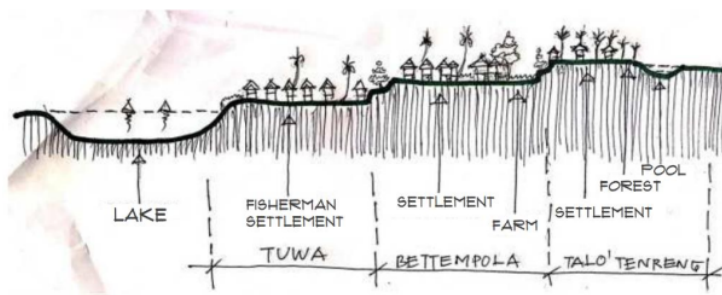


Figure 1. Tosora's settlement typologies.

The preservation of Tosora's heritage has become an urgent policy objective of the Indonesian government, including implementation of plans and conservation programmes for the heritage city (Ciptakarya DPU, 2015), in line with UU (Act) No. 11/2010 on Cultural Heritage. These programmes are strongly focused on preserving local wisdom through spatial planning. The results of preservation efforts have an impact on the development of the creative economy. Behind that, the short attention paid to the preservation of traditional culture is symptomatic of the erosion of cultural understanding. This leads to the lack of preservation activity by the government and the people to preserve heritage artefacts. The government does not allocate sufficient funding to restore, clean and protect heritage buildings or artefacts, for example by building fences around them or annual preservation activities such as removal of moss and restoration of parts of heritage buildings. Such heritage buildings include old mosques, old prayer rooms, storage buildings, tombs of kings, fortifications, ports and traditional houses.

The growth in the construction of modern buildings tends to change the functions of land and lead to the loss of evidence of artefacts, while climate change can cause physical changes to land, all of which can have an impact on historical objects. The complexity of the Tosora people's activities, which are increasingly influenced by advances in information technology, will gradually affect the pattern of life to orient it towards the economy rather than to cultural aspects, which may lead to the loss of cultural and urban heritage. According to (Ziari, 2013), urban space depends on different forces and city factors and the reciprocal relationships between them. These factors can include all activities in urban areas that have always had complex and reciprocal relationships. The evolution in change processes is related to economic factors, including structural demographic changes (Ambinakudige, Parisi et al., 2017). Urban Tosora's non-physical evolution has been influenced by demographic and kingdom-religious changes and colonisation by the Dutch. These non-physical aspects of evolution have had an impact on elements of the urban landscape, such as buildings and the fort. The evolution of Tosora's spatial structure has also been affected by land use patterns and changes in farming and residential areas.

To optimally increase the tourism potential of an area, for example to become a site of cultural tourism, efforts are needed to organise the historical information about the area and map the elements of cultural heritage according to their historical footprint. However, Tosora does not yet have a map of historical traces; it only has a series of historical descriptions. Tosora's importance as a cultural heritage site has not yet been realised in the mapping of areas related to community activities from the 15th century to the present. On the other hand, a historical map is needed as a basis for determining the contribution of a site to the cultural heritage of the country. The spatial evolution of Tosora can be demonstrated through maps of the stages of its development from the 15th century to the present to show the connection between historical facts and community activities as factors of influence.

Therefore, the historical reconstruction of Tosora's civilisation needs to be completed before the evidence and sources are lost. Changes in spatial planning, the loss of heritage buildings, and new roads are all interesting developments to study. Our analysis of Tosora's heritage has goals similar to those of Indonesia's planning and conservation efforts (Ciptakarya DPU, 2015). Therefore, this study aims to analyze and map the physical development of Tosora, especially elements of its cultural heritage and activities as aspects of influence, in order to reveal historical facts – both non-physical and physical aspects of space and artefacts – of the Wajo Kingdom.

This is intended to protect and develop Tosora's historic area. The [main research focus of this study is the creation of a method for mapping and analysis of the heritage of urban areas to preserve their cultural heritage and develop them as sites for tourism.](#) This study considered the following: (1) the cultural aspects; (2) spatial development, the traditional area and urban morphology of Tosora, including its artefacts; and (3) the relationship between sociocultural aspects and spatial and morphological aspects of the city.

2. LITERATURE REVIEW

2.1 Urban Tosora as a Tourism Area

The heritage assets of Tosora are evidence of the history of its people. Heritage includes various assets that have the potential to become cultural tourism resources. This is in line with [Lincoln and Madgin \(2018\)](#) that cultural heritage should be widely reconceptualised in order to acquire ecological and economic value to increase income from tourism. Such assets are worth preserving or revitalising. Unique urban areas should be preserved to become tourism products to maximise regional revenue and meet the community's needs for tourism activities ([Ciptakarya DPU, 2015](#)). According to ([Landoala, 2013](#)), some assets of tourist interest include (1) natural attributes such as climate, soil, scenery, and flora and fauna; (2) handmade artefacts such as historical, cultural, and religious objects; (3) ways of life such as traditions, habits, and customs; and (4) culture, i.e., ideas, customs and achievements of the people in the tourism area. This is related to [Goeldner and Ritchie's \(2009\)](#) basic components of the tourism sector: (1) nature and environmental resources (nature and forms of landscape, climate, and humanity); (2) the built environment; (3) technology and information; and (4) government policies. In summary, tourism objects and attractions can be in the form of natural assets, culture, habits and customs, the built environment, and facilities. These attract tourists to visit and enjoy a place. The management of tourism objects can help preserve national culture and assets and make them available to tourists ([Landoala, 2013](#)).

Topography, slope, availability of water resources, and economic and strategic aspects have influenced the settlement of Tosora since the 15th century. Liveable land includes green open space for water infiltration and home building. [Urban ecosystems and green spaces have multiple benefits for urban health, quality of life and human well-being in the face of urbanisation, spatial planning, and the climate change crisis](#) ([Gómez, Jabaloyes et al., 2011](#); [Han, Kang et al., 2018](#)). According to [Dayaratne \(2018\)](#), in general, traditional settlements in Sri Lanka were built on the principles of interdependence between species, geological systems, and the availability of residential space.

The uniqueness of the Tosora community, which has both advantages and disadvantages, is still evident today. The community needs to develop while maintaining traditional aspects of the settlement which have potential value as tourist attractions. In the effort to explore and evaluate current communities and to study sustainable settlements or cities, it is necessary to review and analyse their historic development ([Tang, Nikolopoulou et al., 2012](#); [Zhang, Baimu et al., 2018](#)).

Their current conditions will influence their future preservation. According to [Dayaratne, \(2018\)](#) and [Mathur \(2009\)](#), the values, attitudes, beliefs, and collective cultural patterns of the community can make for

harmonious relationships founded on respect for one another and the environment which help to maintain ecological sustainability.

The programme to preserve Tosora as a heritage city, in line with the Indonesian government's policy according to Act No. 11/2010 on Cultural Heritage, is an opportunity which has now been grasped by the local government of the Wajo Regency to establish the area as a site of cultural heritage. However, the policy to develop Tosora as a site of cultural heritage is still at the local level; therefore, the development programme has not been maximised relative to what can be accomplished for Tosora if policy is set at the provincial, national, or global level. The traditional cultural beliefs of the community still exist, as seen in the still strong social networks between communities and the collective understanding of culture related to the legendary history of Tosora through information passed down from generation to generation. However, it is likely that the dynamics of technological development and modernisation of people's lives and changes in the local climate, as a whole, tend to affect the cultural pattern of the community which can ultimately have an impact on the preservation of cultural heritage. In the effort to introduce and elevate the image of Tosora as a heritage city, the unique cultural background of the local community as its identity should be strengthened. Therefore, it is necessary to perform a synergistic analysis of the civilisational and cultural evolution of the community by clarifying the development of the area by mapping its artefacts, especially its heritage assets.

2.2 The Spatial Development of Traditional Tosora

The traditional space of a community is a manifestation of its sociocultural values which form the basic norms of tradition (Rapoport, 2005). The traditional spatial setting is often represented as places that still hold customary and cultural values that are related to a community's beliefs or religion. Wikantiyoso (2000) stated that traditional areas are regional assets that can confer character or identity to a region. The identity of the area is formed by its environmental patterns, the built environment and distinctive sociocultural and economic activities. The traditional area's pattern can be classified into its spread pattern and group pattern. The patterns of Tosora's traditional area are highly varied. The group pattern of the general area includes its social facilities, roads, and location near the lake. In addition, its spread pattern, at a regional level, includes its spread around the road behind which the agricultural land is located. This is due to the topographic and eco-hydrological conditions of the area which tend to create tiered features in the form of water bodies, plains, and hills. The pattern of the traditional city is an arrangement consisting of several determinants of distribution; the city's characteristics tend to extend along the river, road, and lake.

2.3 Urban Morphology

Morphology is an approach to the examination of the products of the physical forms of the city/region and to the understanding of the logical form of the city/region as a product of socio-spatial change (Hillier and Hanson, 1984). Morphological approaches are useful to explain changes in the city, expressions of space or urban spatial patterns and the presence of urban spaces perceived through observation of their physical attributes. Morphological analysis also examines the history of formation of spatial patterns by studying the development of a region. Morphological approaches can also be used both

synchronically and diachronically (Kuntowijoyo, 2003) to evaluate and resolve spatial problems. The elements that form the basis for observing the morphology of the city are emphasized in several aspects (summarized by Weishaguna and Saodih, 2007): (1) city shape – the forms of cities or regions; (2) land use, which is the arrangement of land or open space; (3) linkages – connecting lines between urban areas; and (4) buildings, including building types, architectural styles, and functions. Functionally and economically, the growth of urban areas is influenced by land use, buildings, and the form of region, road, and open space. The morphological development of the city is influenced by many factors: (1) the factors that affect the cityscape over a long time; (2) the complexity of the cityscape that is influenced by building style, regulations, road structure, technology, regional development, and astronomy; and (3) the city's continuing development over time (Nasrullah, 2013).

2.4 Culture and Preservation of Urban Heritage

Culture is certain patterns of thought and action revealed in activities that ultimately have an impact on human work, including the physical form of buildings, settlements, and cities (Poerwanto, 2008; Rapoport, 1983). According to Altman and Chemers (1984), culture appears in objects and elements of the built environment, such as housing and building design. Consideration of only the physical manifestation of the built environment without regard to the culture of the community can produce a design that does not meet expectations. According to Kumar, Santara et al. (2020), within the institutional framework, the cultural framework will operate in parallel with the social, economic, and environmental frameworks. The study of local culture, which has implications for the built environment, needs to be the basis of the knowledge necessary for the strengthening of the national character.

Preservation activities generally aim to improve the quality of the living space and the economy. This can only be successful if the community actively participates in reviving cultural assets. According to Pacifico and Vogel (2012), historical (archaeological) tourism involves the exploitation of the cultural richness of a region's history in order to gain financial benefits for its people. One of the efforts in developing cultural tourism is the preservation of heritage cities which involves all cultural assets, including the historical area. Cultural assets that have historical value, such as Tosora, need to be preserved and promoted. The development of this cultural asset requires the creation of space as a forum for cultural activities that have the power to improve the people's quality of life (Tajuddin, 2003).

2.5 Cultural Mapping

Cultural heritage plays an important role in social and economic life, although the role is generally informal and without specific protection and management by the community or government. Cultural heritage is a key element that defines the context of culture and social life by connecting history, region and society (Barrère, 2016). Heritage can be tangible (buildings, structures, and cultural artefacts) or intangible (ideas, practices, beliefs, values, traditions, and literary and musical arts). Informal cultural heritage becomes formal when defined, delimited and given institutional legitimacy (Barrère, 2016). Cultural mapping is a tool used to systematically search for, collect and compile information on cultural expressions in a certain region for wider dissemination. It is an instrument used to identify change or

adjustments observed in the field. According to Pillai (2013), cultural mapping is a systematic approach to recording and presenting an integrated picture of cultural characteristics and how they can contribute to sustainable planning. Cultural mapping can explain how the sense of place arises from a long symbiotic relationship between place or physical space and people as actors and their activities. Freitas (2016) argues that the cultural mapping approach highlights differences between instrumental utilitarian approaches, which are in line with the implementation of cultural intelligence, and integrated humanistic approaches according to conceptual development and implementation in the field. This knowledge has significant additional value when the mapping objectives focus on exploration, management and promotion of local specifications, such as cultural artefacts, to develop cultural tourism attractions (Freitas, 2016).

3. METHODS

This exploratory study was conducted by collecting information about the history of the development of urban Tosora (see *Figure 2*) from the 14th century to the present and the factors that influenced it. Tosora's development could be understood by observing historical artefacts (heritage) and the activities of actors – local communities, visitors and the government. The analysis focused on several indicators such as the characteristics of urban Tosora and its spatial planning (covering space/place, buildings, and artefacts); the period of development of urban Tosora (covering the time spans of the 15th–16th centuries, 17th–18th centuries, 19th–20th centuries, and the 21st century); and factors influencing the development of urban heritage (covering sociopolitical, religious–cultural, and technological–economic aspects). From this analysis, the mapping pattern for the urban heritage of Tosora was finally found. The analysis involved primary and secondary data obtained through field observations and interviews with informants and respondents.

This study, with its focus on application of the cultural mapping method, has similarities to Aliyah, Setioko et al., (2017) study on the spatial flexibility of traditional market areas in Indonesia, which was carried out with a qualitative–inductive approach. Aliyah, Setioko et al., (2017) also considered the characteristics of activity, space, and time, but their scope was limited to market activities and did not encompass the city. Their application of the cultural mapping method is similar to that adopted in this study, but is different in the analytical technique chosen and the analytical categories based on activities and hours of operation. In contrast, this study evaluated a broader category of factors based on activity and urban space and time, and their influences.

Data were collected via field observations and in-depth interviews and from previous studies. In-depth interviews included both face-to-face interviews and focus group discussion. The selected resource persons, among others, were from the Wajo Regency government: up to three people from the Education and Culture Office, up to four people from the Tourism Office, and one person from Tosora village. The following were some of the criteria used for selecting key interviewees: individuals were from the Wajo Regency, the Tosora community in particular, and preferably those domiciled in Tosora for at least 50 years; had the capacity to know and understand the information needed; understood the history of the development of the Tosora area; could communicate easily; and could spare enough time to be interviewed. Secondary data were obtained from articles on history and original

manuscripts on the Bugis, including La Galigo and Lontara. Observations were made on spatial planning, land use, building functions, and various artefacts, and then added to Geographic Information System (GIS) maps.

The analytical activities were carried out in several stages as follows. In the early stage, historical tracing was carried out using techniques of spatial and place analysis to determine the existing historical spatial characteristics and artefacts of Tosora. According to Lombard (2014), in the geographical approach, the place influences human activities which in turn can affect the place.

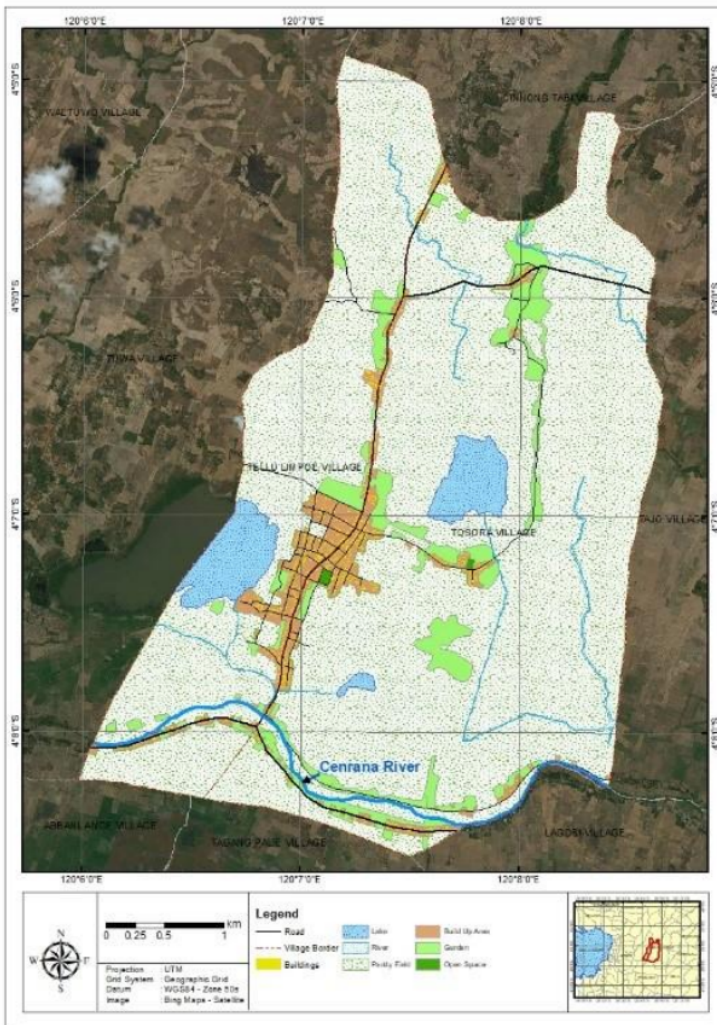


Figure 2. Delineation of the research area and the built environment of urban Tosora

In the second stage, an analysis was carried out to determine the spatial development and artefacts of Tosora. (1) The Tosora area was mapped based on a specific period followed by spatial analysis using mapping techniques and overlaying on GIS-based thematic maps. The time frame analysed was the

period of development of the Wajo Kingdom from the early formation of the urban centre in Wajo-Wajo in the 15th century to the era of the Kingdom centred on Tosora in the 17th century. The end of the reign of the Wajo Kingdom occurred from the late 19th - mid 20th centuries, with its capital city no longer urban Tosora at that time. (2) Spatial development was analysed using techniques of urban morphology by reviewing the conditions of the area based on several indicators – patterns of land use and roads, layout of buildings, and open space (Simon Eisner, Gallion et al., 1992; Ministry for the Environment, 2006; Moughtin, 1992; Weishaguna and Saodih, 2007). The third stage involved an analysis of the factors that influenced the development of the Tosora area and used a combination of diachronic and synchronic reading techniques (Darjosanjoto, 2006; Kuntowijoyo, 2003). While synchronous analysis considers the factors that influence the development of the city, diachronic analysis examines the origin of its history and the process of formation of space and artefacts, identifying characteristics of the actors, their activities, and places. The determination of actors and their activities involved understanding the historical development of Tosora, not only from the aspect of physical artefacts, but also from the perspectives of the social, economic, religious, and cultural conditions of the time. The final stage was an analysis of the combined synchronic and diachronic readings and morphological analysis to determine the concordance between physical form and urban environmental structure according to the indicators above. The spatial analysis was carried out using the overlay analysis technique. The results were used as the basis for interpreting both the narrative and the mapping. The stages in the analysis of spatial development and artefacts are shown in the schematic diagram in [Figure 3](#).

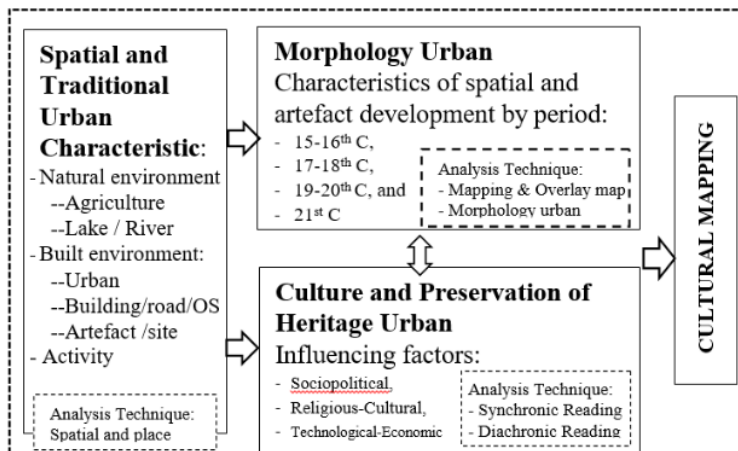


Figure 3. Stages of analysis of Tosora's spatial development and artefacts

4. RESULTS AND DISCUSSION

4.1 Diachronic Review of the Development of Tosora

The *Lontara* suggests that the forerunner of the Wajo Kingdom originated as a settlement around the Lampulungen Lake, which then moved to the Cinnottabi area, and finally officially formed the Wajo Kingdom. The Wajo

Kingdom was centred on Boli, the eastern part of Tosora, currently known as Wajo-Wajo, in Majauleng District. Monarchical rule, originally known as *Batara Wajo*, was founded by La Tenribali in the 15th century. After the first *Batara Wajo* died, his son La Mataesso became the ruler, followed by La Pattedungi To Samallangi. With the third *Batara Wajo*'s death, the system of government changed from an absolute monarchy to a constitutional monarchy (Munawar, 2017). The king's title under the new form of governance was *arung matowa* (roughly translating to 'senior lord'). The first *arung matowa* was La Palewo To Palipu' (± 1474–1481) who was installed by the people and immortalised under the Bajo tree (the *makkajoangnge cempa* tree) on the *lapaddeppa* open space.

The development of the Kingdom was marked by a large number of immigrants and the expansion of the territory to Bone, Soppeng, Luwu, Rappang, and Enrekang districts. Because of sociopolitical, religious-cultural, and technological-economic developments, the centre of the Wajo Kingdom returned to Tosora in 1610 AD during the rule of La Sangkuru Patau Mulajaji (Sultan Abdurrahman, the 12th *arung matowa*) (Hasanuddin, 2013). The Wajo Kingdom continued to develop both culturally and economically. This is demonstrated by the many Arab and Chinese traders who travelled to the place. The centre of the Kingdom was attacked from the outside, for example by the Netherlands which politically and economically colonised the Bone and Soppeng kingdoms (Abidin, 1985; Hasanuddin, 2013). Although La Maddukkelleng (the 31st *arung matowa*) re-established the Wajo Kingdom, the conditions of the kingdom were not as strong as before. Strategic considerations led to the capital of the Wajo Kingdom being moved to Sengkang city (the current capital of Wajo Regency), and in this new location, the reign of the Wajo Kingdom ended in the 20th century.

The end of Tosora's role as the capital of the Wajo Kingdom is historically important, especially in terms of the growth of Islam and Tosora's identity as a city. Its extant physical attributes, in the form of urban space and elements, are evidence of Tosora's history. In addition, the governance practices of the Kingdom implemented in Tosora included rule of law, recognition of basic rights of the people, fair and responsive decision-making, restrictions on and supervision of the authorities' powers, mechanism for democratic election of leaders, creation of a broad investment climate, and ordinary people's participation and freedom of opinion (Munawar, 2017). The urban morphology of Tosora has been evolving since the 15th century. Even today, it has its own unique character which is different from the morphologies of other cities in general.

4.1.1 Development of Urban Tosora in the 15th–16th Centuries

The spatial structure that became the core of the Wajo Kingdom in the Wajo-Wajo area in the 15th–16th centuries also served as a centre of urbanisation (Figure 4). One of the notable locations that became the centre of government and community activities at the time was the *lapaddeppa* open space. This location, under a Bajo tree, became a site of historical importance as the place of inauguration of the first *Batara Wajo* and as a meeting place for the king and community (Hasanuddin, 2013). The *lapaddeppa* shows that the existence of an open space or a public space in its territory was important for the Kingdom. The *lapaddeppa* functioned not only as a meeting place or an inauguration place, but also as a public space for the people to interact with each other and as an area of water absorption. This last function of the open space has remained the same from the 15th century to the present. The existing

road is still a non-permanent road that connects the surrounding residential areas such as the villages of Tosora and Penrang.

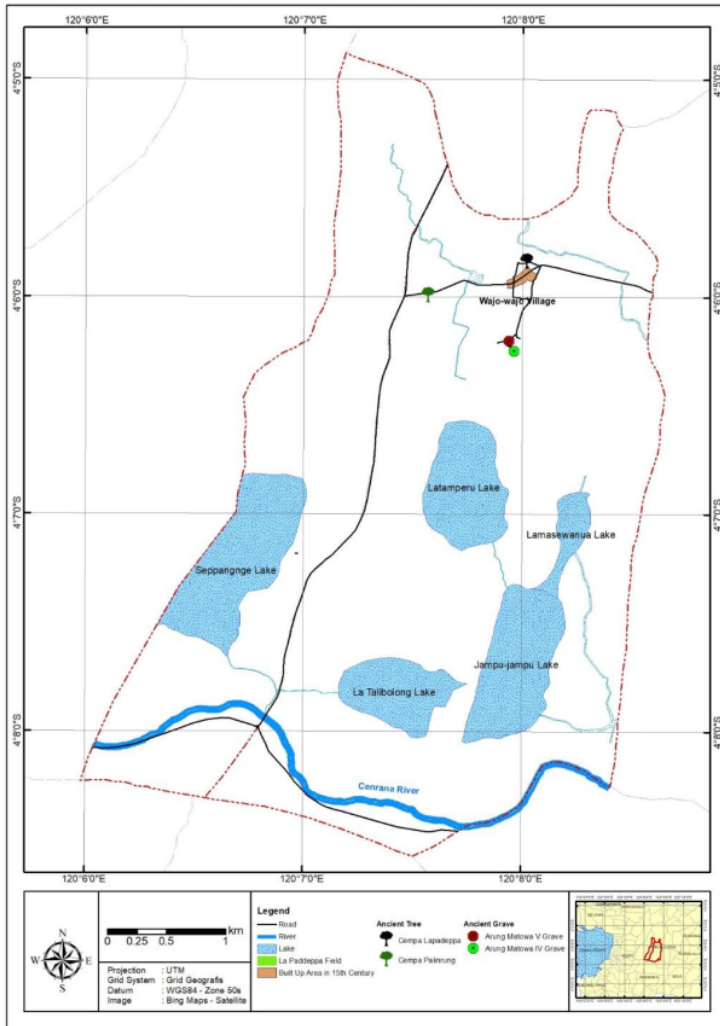


Figure 4. The map of initial conditions of the centre of the Wajo Kingdom located in Wajo-Wajo in the 15th century. The site of the cempa tree (top-left); the lapaddeppa open space (top-right); and map of the centre of the Wajo Kingdom (bottom).

4.1.2 Conditions of Urban Tosora in the 17th–18th Centuries

⁴ In the 17th–18th centuries, the capital of the Wajo Kingdom shifted to Tosora which is about 2 km southwest of Wajo-Wajo (see [Figure 5](#)). During the reign of La Sangkuru Patau Mulajaji (the 12th *arung matowa*), the civilisation of Tosora reached its pinnacle, especially in terms of religion and culture. The adoption of Islam brought changes to various aspects of life ([Duli, 2012](#)).

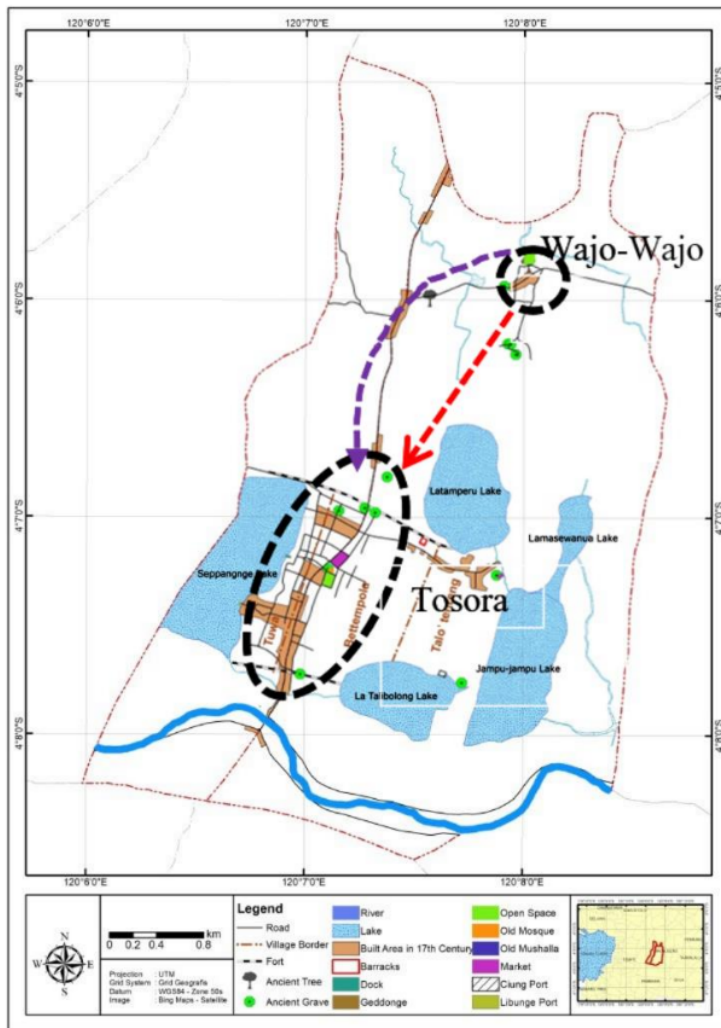


Figure 5. Map showing the shifting of the Wajo Kingdom's centre from Wajo-Wajo to Tosora

The cultural heritage of this period is characterised by the building of the Old Mosque, the musalla, and graves with a north–south orientation (according to the Islamic norm). The urban structures tended to be centred around the mosque and the square. The road existing from the previous era rapidly developed. Although it was still non-permanent, it expanded to the

surrounding areas, such as the villages of Paung, Tua and Paria. In addition, local roads were also built in housing centres such as around the Old Mosque, the village of Amessangeng, and around the Labunge port.

Islam remained in synergy with the local culture. The beginning of the dissemination of Islam was marked by the construction of a permanent mosque in Tosora in 1621. The inauguration of the mosque was attended by the King of Gowa, Bone, and Soppeng (Duli, 2012). In addition, the livelihoods of Tosora's community changed to agricultural activities and fishing. Building technology largely involved the construction of wooden houses and household appliances. The expansion of trade to the international scale had an impact on households through the introduction of various novel items such as crabs, silk fabrics, etc. In the sociopolitical field, people's knowledge and inter-kingdom relations, such as regional expansion to Enrekang, Luwu, Bone, and Rappang, further developed (Munawar, 2017).



Figure 6. The Old Mosque as the centre of government

The spatial structure in the urban core of Tosora is centred on the Old Mosque area around the square, as shown in [Figure 6](#). The urban core was supported by several elements such as a *geddong'e* (ammunition house), harbour, and the old musalla. In addition to its function as the focus of the settlement, the Old Mosque became the centre of government, education and culture at that time (Duli, 2012). The urban structure is bounded by the roads located in the fortress, five lakes and agricultural land. The pattern of arrangement of urban structures is regulated in accordance with the norms of royal rule, i.e., the division of the central residential area into three zones - the watershed region (*Tuwa*), agricultural region (*Bettempola*), and plantation region (*Talo'tenreng*) (Hasanuddin, 2013). These three regions, or *limpo*, later became the boundaries of the small villages or settlements within the larger area of urban Tosora. The division of the space into *limpo* is determined based on its physical character and the type of work of the community. In addition, the division reflects the communities of the three major areas of the Wajo

Kingdom, the Tuwa area in Takkalalla District, Bettempola area in Majauleng District (including Tosora), and Talo'tenreng area in Sabbangparu District.

Based on the discussion above, the physical and non-physical development of Tosora is relevant to [Duli's \(2012\)](#) analysis that the transformation of the city of Tosora to the royal city of Wajo, which experienced its heyday in the 17th–18th centuries, was strongly influenced by several factors: (1) its fertile ecological conditions, both in the agricultural, plantation and fishery sectors; (2) the very strategic location of the area, especially its siting on the banks of a large river and lake; (3) development of agricultural technology and marine transport; (4) developments in democratic social life; and (5) the adoption of Islam which provided a set of basic teachings.

By the end of the 18th century, the Wajo Kingdom began to lose its power due to its defeat in engagements against both the VOC and other local rulers. There were two wars against the VOC. The first was led by La Tenrilai' To Sengeng in 1670 when the Dutch, along with their allies Arung Palakka (22 the Bone Kingdom) and Soppeng, attacked Wajo. The second war occurred in the early 18th century when the Wajo Kingdom was led by La Salewangeng To Tenrirua. Some defensive measures were adopted by the Kingdom, such as the use of modern weapons like cannons, the closing of the Cenrana River or the diversion of the Cenrana River to the south in 1740 to reduce Tosora's vulnerability to attacks ([Duli, 2012](#)). These conditions hindered travel and trade to and from Tosora, resulting in population migration to domestic regions such as Makassar, Pasir, and Kutai, as well as to overseas countries such as Singapore and Malaysia. The reputation of the Wajo Kingdom recovered during La Maddukelleng's (the 31st *arung matowa*) rule in the 1740s and the kingdom's image was restored after defeating the VOC forces.

4.1.3 Conditions of Urban Tosora in the 19th–20th Centuries

In the period of the 19th to the early 20th century, the capital of the Wajo Kingdom was still Tosora, and there were no significant changes at that time. When the Wajo Kingdom was led by La Mallalengeng To Appamadeng (the 36th *arung matowa*), transport by water became increasingly less attractive because of the relatively long distance of travel, and as a result, the Cenrana River, creeks, and lakes began to silt up and became narrower. This had an impact by decreasing economic activities. The physical development of settlements was only evident as construction of housing and a road from Amessangeng village to Wajo-Wajo.

The development of settlements involved such construction of several houses and a road. The construction of the road was continued from the previous era. The building of many local roads followed the development of housing, especially in the centre of Tosora, the establishment of a village market north of the Old Mosque, and the construction of the road from Amessangeng to Wajo-Wajo. On the other hand, the physical condition of Tosora's northern fortress increasingly deteriorated due to the climate, while the southern fortress turned into a lane and several graves. The infrastructure of the public port was no longer functioning due to the loss of river transport. Old buildings, harbours, and a number of historical tombs of the Wajo Kingdom were increasingly poorly maintained. The Old Mosque was the focal point of Tosora's residential space at the centre of the Wajo Kingdom. Some facilities constructed during this period include elementary schools, mosques, and village offices.

After the defeat of the Dutch in 1933, the capital of the Wajo Kingdom led by Andi Mangkona (the 45th *arung matowa*) relocated to Sengkang, about 15

km to the west of Tosora in *Afdeling* Bone. When Dutch rule ended in 1949, the status of the Wajo Kingdom changed from a monarchy to a republican state. In the 1960s, the Tosora area was not free from political upheaval, especially the activities of Darul Islam, which disrupted its development and undermined its stability. Some communities migrated to other areas which disrupted the culture, society and economy of Tosora. In general, the built-up area of urban Tosora in the 19th and 20th centuries have some similarities to the current conditions. However, the number of houses and the size of the lake have increased.

4.1.4 Urban Tosora in 2018

Although the Wajo Kingdom ended in 1949, the conditions of the former kingdom remained in Tosora. The role of urban Tosora underwent many changes, both politically and socio-economically. Transport by water has declined due to increased road transport. The entire agricultural sector and its marketing activities depend on distribution via roads. In the rainy season, flooding is caused by the overflow of the Cenrana River. This greatly affects the stability of Tosora's socio-economic development. On the other hand, during the dry season, other problem arise due to the drying up of a large number of lakes.

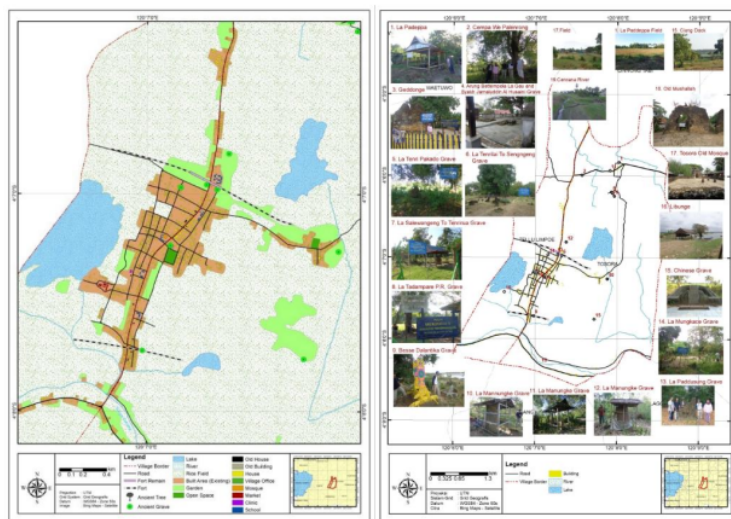


Figure 7. Map of existing land use and artefacts in urban Tosora. Map of the centre of the Wajo Kingdom (right)

Many houses have been built along the main road, transforming the market around the Old Mosque into a residential area. In the harbour of Labunge, several facilities, such as a health centre, junior high school, elementary school, and open space, are found. On the other hand, some sites of Wajo Kingdom artefacts have not been maintained, e.g., Tosora fortress, the Old Mosque, old musalla, *geddong'e*, the Labunge harbour, and the ancient tombs of historical figures from the Wajo Kingdom (see [Figure 7](#)). In order to maintain the artefacts in a sustainable manner, preservation efforts and maintenance management are needed by the government, the private sector, and the community. In addition, the efforts to preserve the existing artefacts

need to be enhanced through the development of cultural tourism in order to improve the economy of the region and opportunities for the community. Through efforts to conserve nature and preserve artefacts, as well as tourism management, the tourism sector is expected to be able to increase the income of the people, and may lead to new employment opportunities in Tosora. Some artefacts can be upgraded to become tourist attractions. The open spaces in the urban centre can be developed into formal areas such as offices, schools, etc. These sites are shown in [Figure 7](#) and [Figure 8](#).

4.2 The Pattern of Physical Development of Urban Tosora and its Influencing Factors

The pattern of physical development of settlements is largely determined by various intangible factors. According to [Pelras \(2006\)](#), the influences on the growth of villages in South Sulawesi can be described using physical and non-physical dimensions. Furthermore, non-physical dimensions can be grouped into socio-political, religious-cultural, and technological-economic factors. The previous discussion suggests that these factors have influenced the process of development of the settlements in Tosora since the 14th century. Some factors influencing the development of space and artefacts of Tosora, which could be a basis for developing the tourism sector, are described below.

4.2.1 Socio-Political Factors

The location of settlements in Wajo-Wajo in the 15th century was determined by farmers and fishermen, and this later became the spatial model of the absolute monarchy of *Batara Wajo*. During the rule of the second *Batara Wajo*, the area of the Kingdom expanded to include three zones: a fishing zone (*Tuwa*), an agricultural zone (*Bettempola*), and a plantation zone (*Talo'tenreng*). The absolute monarchy turned into a constitutional monarchy, or the *Batara* system transformed into *arung matowa* in 1474. The socio-political factor strengthened in the period of the 17th–18th centuries when the centre of the kingdom moved to urban Tosora, where some facilities and infrastructure, such as fortresses, mosques, musalla, *geddong'e*, harbour, roads, open space, and housing, were found. At the end of this period, a major war affected Tosora's infrastructure, and the government centre was moved to Sengkang. This led to the end of the constitutional monarchy of the Wajo Kingdom, which declared itself a self-governing state that eventually became a regency of the Republic of Indonesia.

4.2.2 Religious-Cultural Factors

In the 14th century, the Arab missionary Sheikh Jamaluddin Akbar Al Husaini visited Tosora, but attempts to teach Islam were ineffective because they were not in tune with the objectives of the government of the Wajo Kingdom. In the 15th century, the Kingdom implemented democratic governance. In this new process, policymaking was by the Kingdom's representatives, consisting of 40 people (*arung patappulo*). The culture or norms of farming, marriage, inter-relations of the kingdom, and the rules of social life were regulated according to ethical principles, especially during the reign of Puang Rimanggalatung and La Mungkace To U'Damang. In the 17th–18th centuries, the religious-cultural factor strengthened with the beginnings of adoption of Islam in Tosora. Various architectural features, such as the Old

Mosque, musalla, and ancient ²¹ mbs, which demonstrated the presence and glory of Islam, gave Tosora an important role in the history of the Wajo Kingdom (Duli, 2012). However, during the war in Tosora, its culture stagnated. This was followed by the decline of the trade and cultural sectors.

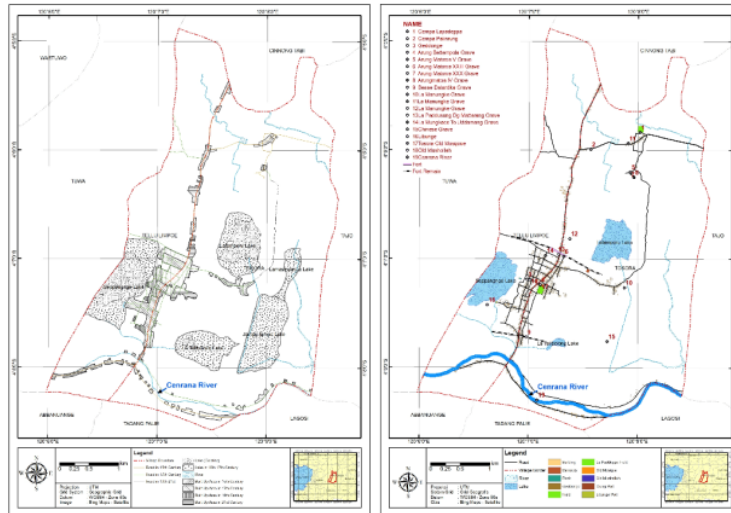


Figure 8. Map of the development of Tosora in the 15th–20th centuries and its sites of artefacts

4.2.3 Technological–Economic Factors

The economic activities in Tosora began during the 15th century in Boli. The successes of the agricultural sector emerged during the reign of Puang Rimanggalatung and later became exemplars for agricultural methods and techniques. Various historical details about agricultural policy are mentioned in the *Lontara* manuscript (Hasanuddin, 2014). The relocation of the Kingdom's centre from Wajo-Wajo to Tosora influenced technological–economic development, as well as regional development. Based on the technological advances during this period, the government built many urban facilities and infrastructure, such as the fortress, Old Mosque, old musalla, *geddong'e*, harbour, roads, open spaces, and houses.

The interaction between the three factors and the influence of the physical condition of the land and Tosora's climate on these factors manifested as tangible features, such as spatial patterns, artefacts, and architectural expressions, and intangible aspects, such as behaviours of the community that developed in the Tosora area (Table 1). Furthermore, the physical development of the built environment is demonstrated by the land-use patterns in Tosora from the 15th to the 20th century (Figure 9).

Sociocultural, economic and political attributes of Tosora were developed during each century based on Islam and the Dutch influence. Politically, the city was part of a monarchical system from the 15th to the 18th century. The settlement changed from one based on fishing and agriculture (15th–16th centuries) to a more urbanised formation marked by the presence of religious buildings (such as mosques and musalla), forts, and logistical infrastructure, with the mosque as the focus of the city and the setting for the government (17th–18th century).

Table 1. Diachronic and synchronic reading analysis

No	Aspect	'15 th -16 th century		'17 th -18 th century		'19 th -20 th century	
		Activity	Spatial Implications	Activity	Spatial Implications	Activity	Spatial Implications
1	Socio-political	-The community of farmers and fishermen was formed.	-Development of agriculture land and fisheries.	-There was a moving of the Kingdom's capital from Wajo-wajo to Tosora, followed by socio-economic developments.	-City infrastructure development such as settlements, roads, city, Tosora fort, old mosques, musalla, warehouse, and port.	-Losing the war from the Dutch caused by the decline economy in Tosora.	-Implications for unproductive agricultural land and fisheries.
		-There was an agreement between the community and the king about the kingdom formation.	-Empowering in the <i>Lapaddeppa</i> open space.				
		-Formation of governance was an absolute monarchy.	-Kingdom territories including area of <i>Tuwa</i> , <i>Bettempola</i> , and <i>Talo'trenreng</i> .	-Expansion of the kingdom and War areas to maintain territory.	-The territory of the kingdom extended to Bone, Soppeng, Sidrap, and Luwu	-The decline of socio-political society and the kingdom, and the formation of the Republic of Indonesia	-The moving of the Kingdom's capital to Sengkang, the Wajo kingdom ended, and joined the republic of Indonesia
2	Religious-cultural	-Since 14 th century Arabian came to teach morals and knowledge.	-Community development at Tosora.	-The establishment of Islam at Tosora, marked by the King of La Sangkuru accepting Islam.	-Various facts of Islam glory which gave Tosora's role in Wajo kingdom history through establishment of spiritual facilities such as old mosques, musalla, and ancient graves.	-Cultural development began to rebuilt when it was under the government of Republic of Indonesia.	-Construction of several artefacts such as ancient graves, old mosques, and settlement infrastructure development.
		-Democratic Culture which policies refer to the royal representative (<i>arung patappulo</i>).	-Construction of Wajo Kingdom settlements in Wajo-Wajo.	-Islamic life develop in Tosora community.	-Tosora mosques acts as a religious, cultural, and government facility.	-There was damage due to the DI/TII movement.	-Cultural heritage such as old mosques, musalla, <i>geddong'e</i> , Tosora fort, port and ancient graves improved maintenance along infrastructure development.
		-Developing cultural wisdom in the fields of agriculture, marriage, between kingdoms, and social life.	-Reflection in settlement patterns, agricultural activities, fisheries, and trade.	-War activities have an impact on the decline of community culture.	-Less motivation to maintain artefacts such as ancient graves, Tosora fort, and others.	-Maintenance of cultural heritage was not maximal due to low access from and to Sengkang.	

No	Aspect	15 th -16 th century		17 th -18 th century		19 th -20 th century	
		Activity	Spatial Implications	Activity	Spatial Implications	Activity	Spatial Implications
3	Technological-Economic	-The success of farmers and fisheries.	-Development of agriculture and fishery landuse.	-Economic and technological developments related to trade and agriculture.	-Construction of heritage Tosora fort, old mosques, Port, musalla, warehouses, housing, and road.	-The war defeat from Dutch caused a decline economy.	-Infrastructure development in Tosora, Itd mostly destroyed.
		-Expansion of the territory, embracing the small kingdom around Tosora.	-Development of spatial kingdom around Tosora area	-Expansion of the kingdom and war to defend the territory	-The area of kingdom extended to Bone, Soppeng, Sidrap, and Luwu area.	-The Republic of Indonesia Independence.	-Moving the capital of Wajo Kingdom to Sengkang city.

The sociocultural and economic identity of Tosora was based on religious people engaged in trade using the port. The urban architecture was mostly influenced by Islam. However, in the 19th-20th centuries, the war with the Dutch changed Tosora. The economy was harmed and most buildings were destroyed or damaged, and a large part of the population moved to other areas. The decline of Tosora began when it was controlled by the Dutch and continued when it lost its status as the capital of the Wajo Kingdom to Sengkang, and entered its final phase when the Kingdom became a regency of Indonesia.

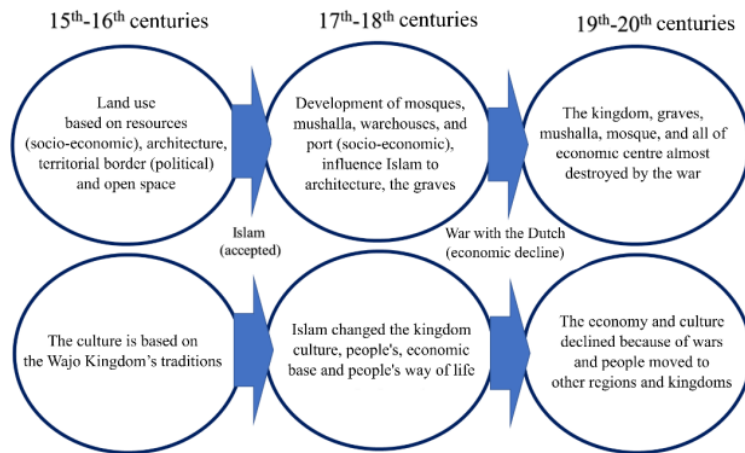


Figure 9. The urbanisation and economic development of Tosora were based on Islam and the Dutch influence.

We discussed the factors influencing the development of Tosora’s urban heritage based on primary and secondary data. It is clear that the mapping of various elements of heritage is in accordance with the historical journey of Tosora during four periods. The cultural mapping also identified the background to Tosora’s establishment and the various factors influencing it. Furthermore, the cultural mapping of urban heritage was an appropriate approach to determine the pattern of historical development of Tosora, the

former centre of the Wajo Kingdom. The cultural mapping method we developed can be applied to identify and map the historical development of any historic city. The elements of Tosora's urban heritage and historical artefacts can be used as the foundation to develop cultural tourism in the former capital city of the Wajo Kingdom.

The effectiveness of application of the cultural mapping method to urban heritage is largely determined by (1) the historical value of the story of establishment of the area; (2) data available from various sources, including local communities; (3) the availability of historical data that tally with existing information; (4) clarity of analysis of the factors that influenced activities in relevant periods in the development of the urban centre; and (5) the quality of the map produced with GIS technology which should be able to provide coordinates for the location of each object. Furthermore, effective cultural mapping of urban heritage can help determine the validity of data and ensure easy access to regional cultural information, so that the area can be classified as a site suitable for development as a tourist attraction. For example, the application of the cultural mapping method to Tosora's urban heritage area revealed several advantages of developing it into a tourism site as discussed below.

4.3 The Advantages of Development of Tourism in Tosora

The major advantages of developing the tourism sector in Tosora, as the former capital of the Wajo Kingdom, and its surroundings were studied by mapping the cultural heritage of Tosora dating to the period from the 14th to the 20th centuries:

- The historical period of development of Tosora from the 15th century to the present is remarkable.
- Historical analysis shows that the Kingdom of Wajo interacted and communicated internationally, through both religious and trading activities, with people from the Middle East, China and the Malay Peninsula'.
- Historical data show that the Wajo Kingdom implemented democratic practices in its system of government from the 15th century onwards.
- The Tosora people could express their opinions as demonstrated by the motto of the Wajo Kingdom, *Maradeka To Wajo'e ade'na napopuang*, a philosophy of independence.
- Tosora's artefacts of historical interest include fortresses for city/territorial defence. Such defences are found also in important cities in the world.
- One of the unique attributes of urban Tosora is the division of the territory into three *limpo* (regions) in relation to the characteristics of its resources.
- Tosora continues to have unspoilt natural and semi-natural areas, from the lowlands (lakes and ponds) and paddy fields to the hills, which support diverse fauna and flora.
- Tosora has various sites with historical artefacts, including the Old Mosque, old musalla, *geddong'e*, fortress, the *makkajoangnge cempa* tree, the *wepalinrong cempa* tree, the harbour, and ancient tombs.
- The activities of the Tosora community, starting from the 15th century, have been recorded in several ancient texts, such as *La Galigo* and *Lontara*.

- The *Lontara* manuscript mentions the cultural system and lifestyle of the Tosora community. The manuscript also has noble messages and principles transmitted from generation to generation which demonstrate the history of the heroic and courageous struggle of the people and their kings for their territory.

The discussion in sections 3.1, 3.2 and 3.3 shows that the pattern of development of Tosora's heritage and culture can reveal the interrelationships between history, space/environment and site/artefacts. These three aspects were analysed using secondary data and some field data, as presented above. Tosora's development can be differentiated into four periods, from the 15th century to the beginning of the 21st century (2018), by considering the context of the interconnection between time and various factors affecting its growth. This is in accordance with the method of application of synchronic and diachronic reading techniques (Kuntowijoyo, 2003). In terms of space/environment and artefacts, the process of development can also be uncovered by considering the relationship between time and space/environment in the four periods. Likewise, in the case of the inhabitants of Tosora, the process of development of the city can also be expressed by examining how human behaviour and activities influenced its environment, and the opposite, how its environment influenced the behaviour and activities of the community, including sociopolitical, religious-cultural, and technological-economic factors, as discussed in section 3.2. This is consistent with Rapoport's (2005) view of nature and the role of environment and behaviour.

According to Barrère (2016), the pattern of development can be formalised after it is defined. In this case, the development pattern becomes an instrument to identify the process of change that has occurred in Tosora since the 15th century. In accordance with the view of Pillai (2013) and Freitas (2016), this study's results for the region's and its community's history of development across several periods is a track record of the community's activities from the pre-kingdom era and the Wajo Kingdom period to the era after the region became a part of the Republic of Indonesia. All historical facts are considered to be important, especially the form of artefacts as cultural heritage and architecture and space/environment, in addition to other inheritances in the form of customs and culture characteristic of the community at this time. Therefore, Tosora's historical artefacts need to be preserved in addition to developing its vitality as a cultural heritage tourism area. This is consistent with Gravari-Barbas's (2018) view that an area that has a wealth of heritage is seen as a powerful driver of tourism development.

However, an evaluation by Yilmaz and Terzi (2020) of the growth of Antalya in Turkey revealed that in order to control the balance between conservation of land and urban development, including tourism activities, legal protection is needed in the form of policies on urban land use. Several green-oriented development plans and design strategies, such as those for ecological protection, river restoration, and green infrastructure, have been proposed to control the balance between nature conservation and urban revitalisation (Razzaghi Asl, 2022; Wikantiyoso and Tutuko, 2013).

5. CONCLUSION

Until now, no attempt has been made to spatially map Tosora's historical period and factors influencing its development to reveal historical facts about the Wajo Kingdom. The historical map produced in this study, in addition to

showing the trajectory of the city's historical development, can also function as a tool for promoting cultural heritage tourism. With synchronic and ¹⁷chronic analysis, the spatial mapping of artefacts cover four periods between the 15th and the 20th centuries. In the 15th–16th centuries, the city was first established as a group of farming and fishing settlements and then developed into a more advanced urban area due to socio-cultural, political, and economic drivers, including 17th–18th-century technology. The city's socio-cultural development was strongly influenced by Islam and was marked by the construction of mosques, prayer rooms, and open spaces. Its economic development was strongly influenced by trade (regional and international) and led to the construction of ports, markets, and urban infrastructure supporting trade and settlements. Political developments were influenced by the motivation for territorial control, symbolised by the construction of fortifications in the Kingdom's territory, in addition to external threats from the surrounding kingdoms and the aggression of the Dutch who sought to control Tosora and the Wajo Kingdom in general. In the 19th–20th centuries, the Dutch controlled Tosora through a long war. Tosora's economy declined, its buildings were almost destroyed or damaged, and most of its population moved to other areas. Tosora's decline was at its peak in the period between Dutch control and the Wajo Kingdom's relocation of its capital to Sengkang and eventual transformation as a regency of the Republic of Indonesia. The spatial mapping of Tosora's cultural heritage reveals several strengths that could be exploited to promote it as a tourist area: its long history; development of democracy and governance; its implementation of strategies in physical development and defence; land use based on local wisdom; and infrastructure and unique traditional culture in the form of multiple sites or artefacts. This study found that the analysis of the relationship between non-physical development and the physical form of urban Tosora a useful activity for mapping its cultural heritage. The results of the cultural mapping of Tosora are available to be used to promote it as a cultural heritage tourism attraction.

AUTHOR CONTRIBUTIONS

Conceptualisation, A.A. and D.P.; Methodology, A.A. and S.B.; Investigation, A.A. and E.S.¹⁰ Resources, A.A., S.B., and E.S.; Data Curation, A.A.; Visualisation, A.A.; Writing-original draft preparation, A.A. and S.¹²; Writing-review and editing, A.A. and D.P.; Supervision, A.A., D.P., E.S., and S.B. All authors have read and agreed to the published of the manuscript.

ETHICS DECLARATION

¹¹ The authors declare that they have no conflicts of interest regarding the publication of the paper.

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