Production Of Spatial Geosite Itinerary Maps as Tourism Destinations

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ABSTRACT
The availability of tourist maps so far has experienced limitations in presenting attribute data in the form of non-spatial characteristics. Tourism is called quality if it can convey the information the community needs. Among them are location attributes, land use, natural and cultural phenomena history, and interrelationships between spaces. Geographical and cultural features are essential to be used in realizing quality tourism through the availability of information on tourism space areas, such as visualization of landscapes and depth of local cultural knowledge. This study used a qualitative method with data collection techniques carried out through interviews, focus group discussions, landscape documentation, surveys, and observations to determine the geographical position of spatial elements. The results of the study produced Itinerary Maps and geosite distribution, including the Saddang River, Buntu Lindo Batu, Lo’ko Malillin, Buntu Lingkobo, Mount Benteng Alla’, Buntu Karua, and Kalosi Arabica Coffee Cultivation. The row of geosites has a chronology and chronology of formation and is related to the social culture of the people in the Fort Alla’ area. The findings from this study are expected to provide exposure to the public, tourists, and the government to preserve natural and cultural heritage to become a reference in implementing sustainable tourism development in Enrekang Regency. It is necessary to develop a digital-based information system that presents spatial attribute data and ethnographic records that can be accessed online.

INTRODUCTION
A geological tourism map is a tool that can achieve many (or even all) purposes by establishing visual relationships between landscape features, geological heritage, tourist perceptions, millennial needs, and tourism activists (Bouzekraoui et al., 2018; Gordon, 2018; Piacentini et al., 2019; Sacchini et al., 2018; Stibral & Faktorová, 2021). Tourism is a socioeconomic activity related to space (Kang et al., 2019) where tourism activities occur, so maps become a tool for tourists, managers, route planning, economic analysis, and others (Kalvet et al., 2020). GIS has been used in natural resource management, land use planning, natural disasters, transportation, health care, public services, area market analysis, and urban planning since the 1970s (Lubis et al., 2017; Garb & Wait, 2011; Kumar et al., 2023; Munthali et al., 2020). The field of tourism is now developing dynamically, utilizing the latest technologies, such as geoinformatics and digital cartography, which present modern maps of tourist destinations in a more modern way.
Travelers use maps to navigate during their journey and to prepare their routes (Jovanović & Njeguš, 2008). GIS plays a crucial role in addressing the growing need for obtaining adequate data for transportation models (Hosseini et al., 2021).

Using ICT tools, digital maps are becoming increasingly popular, allowing users to create maps with information based on education and interests, which requires the application of sound aesthetic judgment (Brokou et al., 2021; Kent, 2013). Touch connects us with an object physically and emotionally (Kent, 2019). The Google Earth map and the Flash version achieved the highest interactivity scores and led to more mental imagery (Hanyoung Go & Ulrike Gretzel, 2010).

However, current tourism travel planning practices need to be more integrated with the location information that tourists need (Pan et al., 2007).

Today's profile of modern tourists in making tourist trips is by utilizing interactive technology. Interaction, among other factors, is an essential issue for tourism, for example, e-commerce hotel bookings (Bilgihan et al., 2014). The prospects for tourism development are influenced by interactive information technology, databases, and technology adapted to the needs of tourists (Pavlovic & Krstitić, 2020). In addition, information technology must show the quality of existing tourism products in tourist destinations. In this context, the availability of technology in a goal is a facilitator between tourist object managers and tourists. (Agag & A. El-Masry, 2016)

Ideally, tourism information can link service providers and the demand and supply of tourism activities.

A geographic-based information system is an interactive platform capable of providing the information needs of tourists. According to (Brokou et al., 2021), the availability of an online map platform was used (by 81.4%) of respondents for the function of tourist locations (65.8%) to find out distances and (72.8 %) for navigation purposes. Tourism has a vital geographical attribute. GIS is an information system offering services to geographic research and decision-making, which can play roles in tourism management. Possessing functions such as data collection, storage, processing, spatial analysis, and so on, GIS directly provides services for tourism management (Wei, 2012). Eboy (2017) defines maps as vehicles that are indispensable for communicating spatial information with the availability of images of space and place. The destination manager should ideally be able to provide more detailed information about the historical background, giving travel guidance with flowcharts or map objects (Kirom et al., 2018).

The challenge currently being experienced by cartographers is presenting a tourist map full of meaning and rich information. Tour maps for planning are developed for the public and private bodies in charge of managing tourism activities; meanwhile, the guide map is directly related to the movement of tourists in tourist areas (Salomão Graça & Fiori, 2015).

First, the production of tourist maps has so far been judged to be too static. The tourist maps presented on several tourism platforms differ from tourist destinations' conditions (Brokou et al., 2021) argued that online maps cannot know local characteristics and potential in tourist destinations, as many (80.1%) of respondents need help finding enough information about the local community, the protection of cultural heritage, and information on tourism development, which is getting out of control. Moreover, tourist information in remote areas has very little information about landscapes and natural panoramas incredibly remote places (Ghorbanzadeh et al., 2019). In addition, according to (Fiori, 2010), tourist maps are produced with internal guidelines in three essential aspects: information means dissemination and development for understanding.
Second, tourist maps are mainly focused on interests and power. (Pearce, 1995) detects a significant shift from spatial-based tourist modeling in that many tourist maps have been developed subjectively without the involvement of cartography. In addition, only a few tourist maps have received critical assessment or empirical testing based on cartographic principles. Fagence (Boers & Cottrell, 2007) argues that the contribution of tourism maps so far lies in establishing the relevance of certain geographic concepts, such as spatial interactions between tourism components, distance information from origin to destination, transportation spots, tourist routes, and tour package maps. Natural disasters seriously impact tourism, so hazard mapping provides information to authorities/residents about various possible changes and disaster management activities at tourist sites (Singh, 2015). The availability of maps can be a tool for developing tourist destinations. Geographic Information Systems provide a technical and technological toolbox for achieving sustainable tourism (Pareta, 2013).

Geosite and Geomorphosite are landscapes that have potential as tourism sites and have value based on the point of view of human judgment (Bahar et al., 2020). The possibility of a site can become a tourist attraction and a sustainable tourism development effort (Krishna et al., 2016; Marlina & Natalia, 2016). Geosite and Geomorphosite tourist attractions are developed using an appropriate spatial approach based on cartographic principles. The development of tourism destinations through a spatial system plays a role in determining directions for destination managers in determining tourism policies, such as areas with geological, biological, and cultural diversity characteristics directed as geo-tourism destinations or geo-parks (Wulung et al., 2020). Geosites are those parts of the geosphere important for understanding the earth's history. These geological or geomorphological objects have acquired scientific, cultural/historical, aesthetic, and social/economic value due to human perception or exploitation (Reynard, 2004).

The Benteng Alla’ area in Enrekang district, South Sulawesi, has the potential as a geosite-based tourist attraction. However, all the potential that exists has not been appropriately managed. As a result of discussions and observations in the field, it is difficult for the community to construct information about the history, geological processes, and the links between existing landscape phenomena. So far, visitors can only interpret the appearance of the landscape based on their understanding without any reinforcement from the local community as the party that "guards" this natural heritage. The pattern of visitor movement in the Fort Alla’ area does not yet have a model integrated with the three village areas, so it can potentially cause social inequality.

The historical site of Benteng Alla’ is a rock formation resembling a fortress with a length of up to 6 km and an area of 80 ha, placing the Benteng Alla’ space administratively spread across Baroko, Massale, Alla’ Districts to the Tana Toraja Regency area. Bentang Alla’ is located in the northern part of Enrekang Regency. Apart from the landscape potential, there is also Kalosi coffee from the Arabica coffee species (Coffea Arabica Linn), one of the central coffees in Indonesia (Bulan, 2021). So far, the Alla’ Fortress area has not been optimized to become a tourist attraction even though it is on the path of the National Tourism Area and National Tourism Destinations, namely the Toraja KPPN and its surroundings and the Toraja–Lorelindu DPN and its surroundings (Permen RI No. 50 of 2011).

The development of the Benteng Alla’ Geosite as a destination is carried out by visualizing the area's landscape and descriptive socio-cultural sites. Therefore, the approach used for geosite development is through ethnographic area mapping. Ethnographic mapping — that can collect
both spatial (maps) and narrative (descriptions) information in tandem and across cultural groups living (Parent, 2020). Ethnography is in line with cartography (Wainwright & Bryan, 2009), who mention that cartography represents the world, doing geography in the literal sense of ‘writing the world. Ethnographic mapping is locating geographic spaces for activities and locations of individuals or groups (Tripathi et al., 2010). It plays an essential role in studying geographic areas and provides new information about changes in social structure, networks, and demographics within societies (Oliver-Velez et al., 2002).

On the other hand, it was found that there was a tendency for millennial tourists to enjoy traveling with cultural experiences (Xu et al., 2022). Millennials are a demographic segment with significant participation in business trips (Starčević & Konjikušić, 2018). Millennial travelers are interested in authenticity, fulfillment, and sustainability (Sofronov, 2018). Millennials were born in the digital era and are known for always relying on internal technology in every aspect of their life (Pramono et al., 2020). Travel experiences increase when various sites are combined with visiting (Ershad & Ali, 2020). It can be concluded that Millennials are very close to culture immersion, where they want to experience local nuances with the availability of specific information about the attractions in sight. Thus, regional visualization support and information depth are needed in travel planning.

This study aims to identify the spatial elements in designing a tourism destination model. In addition, classifications of tourist attractions are scattered in the geosite area of Benteng Alla’, Enrekang Regency. It can further explore the meaning of a landscape and cultural phenomenon through ethnographic studies that show performative practices that shape tourism identity. It is hoped that the integration of research across geographic and ethnographic disciplines can represent a space that gives meaning to the essence of a destination as a tourism space.

**RESEARCH METHODS**

Ethnography is knowledge that includes research techniques, ethnographic theories, and various cultural descriptions (Spradley, 1997). Them (2013) defines culture as an organic system in which all tangible or intangible values are created and extended by humans in interacting with nature and the social environment. Meanwhile, ethnographic features include language, technological systems, economic systems, social organizations, knowledge systems, and arts and religious systems (Koentjaraningrat, 1997). Ethnographic mapping is a process for locating geographic spaces, which are the places for the main activities and locations of individuals or groups of people studied (Tripathi et al., 2010). It describes culture within the boundaries of space and provides a basis for contemporary understanding of how culture is set (Burrell, 2009).

The presence of an ethnographic approach in location studies can provide new information related to changes in social, network, and demographic structures in a destination area. The distinguishing feature of tourism is that an individual wants to find something different from his daily activities (Arief, 2013). Collection of references in the field, notes, and transcripts from observations through semi-structured interviews with respondents can describe in detail how human influences or actions within their "ethnic" sphere are always related to the historical background of their efforts (Miles & Huberman, 1994; Fatchan, 2015). This study builds an ethnographic-based tourism information system for destinations with geosite attractions.

Geosite boundaries for this study include rocks, geological structures, and
landscapes, which provide an overview of unique geological processes and represent the study area's evolution. Biodiversity is linked to the economy, the use of local communities, and the history that underlies the toponymy of the landscape as a unique thing for tourist attractions. When using the space of geological areas, the importance of geological sites and their use and maintenance must be considered (Ansori et al., 2022). All geoscientists recognize the importance of accessing representative geodiversity elements (minerals, rocks, fossils, soils, landforms, etc.) (Brilha, 2016). Geotourism, as 'geological tourism,' is a form of tourism that focuses specifically on geology and natural landscapes (Dowling, 2014).

A Geographic Information System (GIS) is an efficient tool for maintaining natural and cultural tourism resources. (Kasiannan, 2007), revealed that GIS is a valuable tool for mapping cultural heritage. Meanwhile, (Sieng & Eboy, 2021) showed that the introduction of GIS in the mapping field helps to produce maps of ethnographic patterns, indirectly preserving the heritage of the people of Kadazan Hamlet, Kalimantan Island. The map created by this study shows various ethnographic features that can be used to describe the cultural heritage of the Kadazan Hamlet community, including local musical instruments, traditional clothing, handicrafts, and local products. Thus, this cultural heritage can be mitigated through maps.

Table 1. List of Informants in Benteng Alla’

<table>
<thead>
<tr>
<th>Informant Subject</th>
<th>Interview Time and Place</th>
<th>Information Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Baroko</td>
<td></td>
<td>Tourism Policy in Baroko District, Enrekang Regency</td>
</tr>
<tr>
<td>Head of the Youth Sports and Tourism Office of Enrekang</td>
<td></td>
<td>Tourism Policy and Direction of Enrekang Regency</td>
</tr>
<tr>
<td>Regency</td>
<td></td>
<td>Information on customs and culture of the Benteng Alla’ area</td>
</tr>
<tr>
<td>Ketua Aliasi Adat Massenrempulu (AMAN)</td>
<td>Baroko District Office Hall; Wednesday, March 30, 2022; 09.00-17.30 WITA</td>
<td>The distribution of tourism potential in villages in the Benteng Alla’ area</td>
</tr>
<tr>
<td>Head of Benteng Alla’ Utara Village; patongloan; Tongko: Benten Alla’</td>
<td></td>
<td>Historical information on the background of Benteng Alla’</td>
</tr>
<tr>
<td>Traditional Figure A’Pa Tepona Bua</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RESULTS AND DISCUSSION

Analysis techniques in ArcGIS software are used to determine the distribution of ethnographic characteristics on geosite features and socio-cultural phenomena in the Benteng Alla’ area. The results of this analysis are in the form of distribution point features and areas. Spatial data was generated through surveys on the location of the Destination Components, Ethnographic notes and reports, and the distribution of geosites based on Figure 5. The themes of the supporting components of tourism destinations include the distribution of attractions (geosite), accommodation, amenities, accessibility, and ancillaries. In comparison, the themes of ethnographic features include culture, history, landscape, tourism policy, and land use. Overlays between ethnographic feature groups and destination features are overlaid to produce ethnographic data-based geosite distribution maps.
Table 2. The Geo-Ethnographic-Based Tourism Fort Alla’ Mapping Component

<table>
<thead>
<tr>
<th>Spatial Data</th>
<th>Destination Component</th>
<th>Non Spasial Data: Histori Geosite:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attraction</td>
<td></td>
<td>1. Cultural Theme</td>
</tr>
<tr>
<td>Input</td>
<td>Attribute Data:</td>
<td>2. Historical Theme</td>
</tr>
<tr>
<td>Line; Polygon:</td>
<td>Accommodation</td>
<td>3. Landscape Theme</td>
</tr>
<tr>
<td>Point</td>
<td>Accessibility</td>
<td>4. The theme of land use</td>
</tr>
<tr>
<td></td>
<td>Amenities</td>
<td>5. Theme of Tourism Policy</td>
</tr>
<tr>
<td></td>
<td>Ancillary</td>
<td>Homestay Location Features;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restaurant; Mode of transportation;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information Center; Footpath;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Souvenir Center; Other Supporting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Facilities and Infrastructure</td>
</tr>
<tr>
<td>Process</td>
<td>Overlays (combine, erase, modify, or update spatial features):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Location of Destination Components, Geosite and Ethnographic Description of the Benteng Alla’ Community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ethnographic-based Geosite Map</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ethnographic Records</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Benteng Alla’ or Mount Benteng Alla’ is located in the administrative area of Baroko District in 1 sub-district and three villages, namely Baroko Sub-District, Patongloan Village, Tongko, North of Benteng Alla’, Patongloan; Alla’ District, which is in the Buntu Sugi Village, Pana Village; as well as in the District of Curio which is in the village of Salassa and part of it is in the western part of Pabaloran village. Based on the results of field observations, there are six geositess (Figure 3) in the Benteng Alla’ area. Each geosite is described in terms of detailed location, characteristics and existing conditions, geological overview, and tourist attraction products. This potential can complement the development of the tourist area in the northern part of Enrekang. Among them is 1) the Saddang River, which flows through Pana village, Alla’ sub-district, and 2) Buntu Lindo Batu, which is in the Buntu Sugi sub-district, Alla’ sub-district. In the Duri language (Massenrempulu), Buntu Lindo Batu means a Stone-faced Mountain 3) Lo’ko Malillin, which is in Pana village, Alla’ sub-district 4) Buntu Lingkobo, which is in Pana village, Alla’ sub-district and Salassa, Curio sub-district, the Lingkobo geosite is the delineation boundary for the two sub-districts 5) Mount of Benteng Alla’ is located in 4 (four) administrative areas of the village, namely North Benteng Alla’; Patongloan; Tongko: Benten Alla’ Baroko District 6) Buntu Karua is located in Pana Village, Alla’ District. The following is an inventory of geosite characteristics at the study site.
### Table 2 Inventory of Landscape Potential in the Benteng Alla’ Area, Enrekang Regency

<table>
<thead>
<tr>
<th>Geosite</th>
<th>Morphology Identification / Geology</th>
<th>Coordinate</th>
<th>Potential Attractions/ Activities</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buntu Lingkobo</td>
<td>Tower/ Reef Limestone</td>
<td>119°49.956'E 3°17.821'S</td>
<td>Natural attraction</td>
<td>Pana; Salassa; Curio Enrekang</td>
</tr>
<tr>
<td>Buntu Karua</td>
<td>Tower/ Shale</td>
<td>119°49.482'E 3°17.594'S</td>
<td>Natural attraction</td>
<td>Pana Alla’ Enrekang</td>
</tr>
<tr>
<td>Buntu Lindobatu</td>
<td>Tower Karst / Limestone Reef</td>
<td>119°48.946'E 3°18.864'S</td>
<td>Natural attraction</td>
<td>Buntu Sugi Alla’ Enrekang</td>
</tr>
<tr>
<td>Mount of Benteng Alla’</td>
<td>Tower/ Reef Limestone</td>
<td>119°48.160'E 3°15.166'S</td>
<td>Natural attraction</td>
<td>North Benteng Alla’ Patongloan; Tongko: Benteng Alla’ Baroko Enrekang</td>
</tr>
<tr>
<td>Loko Maliling</td>
<td>Goa / Limestone Reef</td>
<td>119°49.798'E 3°17.991'S</td>
<td>Natural attraction</td>
<td>Pana Alla’ Enrekang</td>
</tr>
<tr>
<td>Saddang River Stream</td>
<td>River/Shale</td>
<td>119°49.772'E 3°17.957'S</td>
<td>Natural attraction</td>
<td>Pana Alla’ Enrekang</td>
</tr>
</tbody>
</table>


The results of identification, interviews, and field surveys provide an overview of chorology and landscape formation in the study area. Shale and Limestone are part of the appearance of the Region. The physical phenomenon of the landscape is in the form of karst rocks that form towers, caves, and rivers. The components of these unusual karst formations are non-renewable natural resources, meaning that the existence of karst and its unique architectural structures, including the environmental function they carry out, is a resource that cannot be repeated in the same place or the process of its formation. Takes thousands or millions of years. These natural buildings are categorized as natural tourism resources. The map here helps tourists to interpret geosites and is the most relevant media to promote geotourism at Fort Alla’ Geosite. (Bouzekraoui et al., 2018) Suggests that the presentation of map proportions must be balanced between scientific geosite information and tourism. It is used to communicate geoscientific themes with a non-specialist public to provide the opportunity to understand geomorphology or geological phenomenon, formation, or evolution. Tourist information is of secondary importance (Rodrigues et al., 2011). Map derived from an exact simplification of the geomorphological map. It combines the most observable geological and geomorphological natural and anthropic features and is recognized even by non-experts and tourists’ information (Erharti, 2010). This means that tourists are presented and facilitated with panoramas to enjoy artistic phenomena created by nature that cannot be found anywhere else in the world.
Figure 4. Geological Formation Map of The Research Area (Source: Researchers, 2023)

Benteng Alla', Mount Benteng Alla' is in the administrative area of Baroko District in 1 sub-district and three villages, namely Baroko Sub-District, Patongloan Village, Tongko, North Benteng Alla', Patongloan.

Mount Londo Batu, Buntu Sugi Village, Alla' District, Enrekang Regency. Located right on the edge of the Enrekang-Makale axis road and between the road and the tower is the Bubun Salle spring.

Mount Lingkobo: Mount Lingkobo karst tower, Pana Village, Alla'

Mount Karua karst tower, Mount Karua karst tower, Pana Village, Alla'
District, Enrekang Regency. Located right on the edge of the Enrekang-Makale axis road and between the road body and the karst tower is the Saddang River.

District, Enrekang Regency. It is located right on the edge of the Enrekang-Makale axis road.

Saddang River, The Saddang River flow limits the Lingkobo Karst tower and the Enrekang-Makale axis road. This river is a stream from Toraja and empties into Pinrang Regency.

Lo’ko Malilin, Malillin Cave in Pana Village, Alla’ District, is on the east side of the axis road. This cave was used as a hiding place for Japanese soldiers.

Figure 5. Geosite Descriptive Theme based on the proposition of the Key Informant (Source: Researchers, 2023).

In a narrow sense, geotourism is a tourism segment focusing on sustainability results (by geotourists and local people) of geoheritage results. In a broad sense, geotourism can be considered as a tourism segment that primarily focuses on sustainable outcomes (by geotourists and local communities) of fruitful geoheritage, that is, cultural heritage (material and immaterial) can be added from the area (Rodrigues et al., 2011; Štrba et al., 2020) In this research, we only do data inventory available to meet the definition of geotourism in the narrow sense, namely do village community geoheritage inventory. After we conducted a list, the following are the results of the Focus group discussions with residents and farmers in the Alla’ fort area:

"This natural phenomenon was used as a stronghold by the community together with the extended family of Bo'dik, Tabbakka' BF Puang Garutuk, BE, namely Biritta Bin BE Puang Tosang who came from the Tidalun kingdom and families from the community in the Durian complex which is named Tallu Batu Papan in the struggle against the invaders. In 1906, Benteng Alla’ became the base for the defense of the Alla’ kingdom and was also used by warriors from the land of Toraja. The form of utilizing the Benteng Alla’ was carried out by strengthening the Benteng from all directions. Doors or entrances to the north, south, west, and east are piled in layers and stones. Each route or gate is strictly guarded. The exit from the north is entrusted to Ottong and So'Bo. The west door was assigned to Bo'dik and Grandma So Asu from Tangsa. The South Gate was charged to Uban from Patongloan (Redak). The east gate was given authority to Wa' Saruran and Bombing from Bonggakaradeng (Tana Toraja)."
Geosites in the form of historical remains and community cultivation are found in the Benteng *Alla’* Area. The results of interviews with key informants are included in the ethnographic report as follows:

"First, on the Enrekang-Toraja axis road, which crosses the village of Pana, *Alla’* District, this area has the potential for natural geosites and panoramas. Second, the Baroko District includes the villages of North Benteng *Alla’,* Patongloan, and Benteng *Alla’*. In addition to the Geosite, the potential of this area includes community activities and local wisdom that are packaged using agro-tourism and eco-tourism models. The third is the northern part of Pana Village, *Alla’* District. This area is the gateway to Tona Toraja Regency (leading destination). Infrastructure development in accommodation facilities, restaurants, and homestays is directed at this area.

Agro-tourism potential areas in Baroko District include Patongloan Village, *Alla’* Utara Benteng, and *Alla’* Benteng. These three areas are areas with natural attractions and the development of artificial lures. The beauty and panorama of Benteng *Alla’* mountain is the main attraction in these three villages. Apart from that, community activities in the agricultural sector are a potential for agro-tourism, and the local wisdom of the people is still vital.

### Table 3 Inventory Locations for Historical and Cultural Potential in the Benteng *Alla’* Area, Enrekang Regency

<table>
<thead>
<tr>
<th>Geosite</th>
<th>Potential Attractions/ Activities</th>
<th>Village/Subdistrict</th>
<th>District</th>
<th>Regency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benteng Kambiolangi</td>
<td>History</td>
<td>Sumillan</td>
<td>Alla’;</td>
<td>Enrekang</td>
</tr>
<tr>
<td>Benteng Buntu Rajan</td>
<td>History</td>
<td>Pana</td>
<td>Alla’;</td>
<td>Enrekang</td>
</tr>
<tr>
<td>Benteng <em>Alla’</em></td>
<td>History</td>
<td>Benteng</td>
<td>Baroko</td>
<td>Enrekang-Toraja</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pamolongan</td>
<td>Baroko</td>
<td></td>
</tr>
<tr>
<td>Tondok Redak Old Settlement</td>
<td>History</td>
<td>Tondon, Redak</td>
<td>Baroko</td>
<td>Enrekang</td>
</tr>
<tr>
<td>Issong Batu</td>
<td>History</td>
<td>Tangsa, Baroko</td>
<td>Enrekang-Toraja</td>
<td></td>
</tr>
<tr>
<td>Tongkonan</td>
<td>History</td>
<td>Benteng</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tangsa, Baroko</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalosi Arabica Coffee</td>
<td>Culture-Agrotourism</td>
<td>Tondon, Redak</td>
<td>Baroko</td>
<td>Enrekang</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benteng</td>
<td></td>
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</tr>
</tbody>
</table>

The current location is open land with community activities in the agricultural sector—cultivating horticultural crops such as potatoes, carrots, tomatoes, onions, and other vegetables. In addition, the village of Benteng Alla’ Utara is dominated by rain-fed terracing rice fields. The formation of the paddy fields adds to the beauty of Alla’ Benteng and is a tourist attraction. The development of the agro-tourism area in Benteng Alla’ is based on the issue of tourism development policy in Enrekang Regency, which a local government representative informant conveyed. Among them 1) Enrekang Regency Regional Regulation Number 14 of 2011 concerning the Enrekang Regency Spatial Plan for 2011 – 2031 that the area for developing alternative cultivation of superior plantation commodities is coffee plantation areas in the Districts of Masalle, Baroko, Alla’, Curio, Baraka, Buntu Batu, Malua, Bungin, Maiwa, Cendana District, and Enrekang District 2) Planning zoning in the Benteng Alla’ area refers to the directions of the RTRW of Enrekang Regency.

The division of blocks controls and directs the development of the Benteng Alla’ area. Some area block functions are based on the spatial use directives from the RTRW of the Enrekang Regency. Areas developed as agro-tourism zones in Baroko District include Patongloan Village, North Benteng Alla’, and Benteng Alla.’ In addition to agro-tourism activities in Baroko District, they are also directed at exploiting the potential of geosites scattered around the Makassar-Toraja axis road (the case in Figure 3). The absolute location is along the road in Pana village and Sugi sub-district, Alla’ sub-district: Supporting facilities specifically serving tourists at Alla’ Benteng is centered at the Enrekang-Toraja gate, in Salubarani Pana Village, Alla’ District, Enrekang. The existence of this facility aims to make tourists feel at home, spending time in this area and adding value to the services offered.

Some planned facility items include lodging, homestays, parking areas, entrances, restaurants, prayer rooms, public toilets, information centers, gazebos, etc. The suggested concepts and designs are made by considering aspects of natural balance and applying elements of the local culture of the local community. Apart from being a supporting facility for the Alla’ Fortress area, it is hoped that it can be an alternative for tourists visiting Toraja to choose a place at this location, both for eating/drinking overnight and resting.

The use of spatial approaches and ethnographic records in developing tourism destinations in the bending Alla’ Area of Enrekang Regency is to facilitate the Enrekang Regency government to determine the direction of sustainable tourism planning policies and as a tool for tourism potential marketing. A spatial approach can spread tourist activities across tourism destinations, thus triggering the spread of the economic benefits of tourism in the form of income.
for local communities (Wulung et al., 2020). In addition, Tourism marketing based on local wisdom can build a destination's brand image (Brown et al., 2015). This application focuses on local storytelling by highlighting elements that characterize cultural heritage values to develop unique marketing (Zhang et al., 2022).

Despite the distribution and description of geosite potential based on an ethnographic approach, mapping can produce an ethnographic map with an in-depth explanation of the socio-cultural characteristics of the geosite location. This research adds to the repertoire of developing geosite areas in Indonesia. The challenges of compiling tourist maps so far can be overcome by developing digital maps based on an ethnographic approach. As stated by (Brokou et al., 2021), a tourist map must include the following characteristics: arranged according to cartographic rules; contains compatible information; development policy, if needed; uses cartographically accepted symbology; Contains all the information required by the user; Contains reliable historical and cultural knowledge. Thus, a tourist map with such characteristics can meet tourists' needs and develop quality tourist destination areas.

Based on the Geosite Distribution Itinerary Maps at Fort Alla' (Figure 7), this study offers a proposed geotourism itinerary connecting the impressive series of outcrops distributed between Tower/Reef Limestone in the west and Shale in the east. Apart from that, Fort Alla' has landscape-based tourism resources that can be visited with an attractive and unique appearance. The tour packages are arranged according to history and chorology that stretches like a book describing natural processes and the meaning behind the phenomena of the people of the Alla' Fort area. The proposed itinerary and geotourism route has a length of about 25 km and can be completed with multiple pattern models in the form of

![Figure 7. Itinerary Maps Benteng (Source: Researchers, 2023).](image-url)
chaining loops. The Geographic Information System documents spatial-temporal tourist movements through mapping (Lau & McKercher, 2006). This geotourism route can be reached by four-wheeled vehicles, two-wheeled motorbikes, or walking tours for 8 hours.

From the sub-district center at Pasar Sudu to the village of Fort Alla’, tourists can travel on four or two wheels. Through this route, visitors can travel, in 8 hours, to the most unique and wide-ranging geosite in Fort Alla’. The Gathering Point is at Pasar Sudu’, Alla’ District Center. This itinerary covers important historic natural monuments such as Mount Londo Batu, Lo’ko Mallin karst landscape, and the sa’dang river with its gateway as Fort Alla’. At the Bentang Alla’ location, tourists will witness the activities of processed Arabica Kalosi coffee and farmers who are still traditional in processing natural products.

The availability of easily accessible geotourism can increase the number of visitors. In addition, the availability of geographic and geomorphological information can enhance the tourist experience. Another primary goal of this map and geotourism trip is to attract more investment to improve the economic conditions of the most disadvantaged Enrekang people and government and to increase the number of visitors, especially those who claim to be geotourists. In addition, some sites have not been inventoried by the government, so it is advisable to add these geosites to the list of geoheritage at the district, national and international levels and are recorded in the Geopark.

Finally, the development of the Benteng Alla’ geosite is hoped to encourage residents to maintain their natural and cultural heritage. The study of the development of the Fort Alla’ geosite needs to be explored further to include this sector in the geotourism route, an alternative for tourists to and from Toraja as a national destination. Another aspect that needs to be developed is carrying out a systematic inventory of all potential places and points of view that tourists can pass through to see the landscape in the area. These viewpoints will be included in the path of geotourism, and, for each of them, there will be a sheet that interprets landscape phenomena.

Therefore, we will continue to survey Fort Alla’s geomorphological heritage. Our further research includes aspects related to the landscape (hills, valleys, edges, etc.) and landscapes (viewpoints and landscape interpretation sheets). We are sure that Fort Alla’ Geotourism Route in the future, which will explore, educationally and entertainingly, the interaction possibilities of geological heritage, geomorphological heritage, cultural heritage, and tourism, can be essential incentives to promote, among existing and potential stakeholders in Enrekang District of South Sulawesi Province, Indonesia an increasingly important segment of tourism, both for the regional economy, and regional and environmental management. Several studies confirm that geosites contribute to environmental protection and community economic improvement. Geotourism-related activities can undoubtedly contribute to promoting the safety of geosites in protected areas. In addition, through a geotourism approach, geodiversity can gain public attention and positively influence the condition of protected areas through its activities (Štrba et al., 2020). The scientific, educational, and aesthetic value of these resources can create an image of the geosite area following the principles of environmental protection (Górska-Zabielska & Zabielski, 2017).

The development of the Benteng Alla’ Geotourism innovation is pursued through digital-based technology. The e-tourism application will later provide information related to tourist attractions to become the primary guide for tourists before visiting a tourist attraction (Suciani et al., 2022). Tourists can access this via a
smartphone to make tourism activities safe and comfortable (Jasman et al., 2021).

CONCLUSION

The proposed itinerary and tourism route in the Fort Alla’ area has a length of about 25 km and can be done with several patterns, including chaining loops. The geosites of the Benteng Alla’ place are spread over the following areas: 1) the Saddang River, which flows through Pana village, Alla’ sub-district; 2) Buntu Lindo Batu, which is in the Buntu Sugi sub-district, Alla’ sub-district. In the Duri language (Massenrem pulu), Buntu Lindo Batu means a Stone-faced Mountain 3) Lo’ko Malillin, which is in Pana village, Alla’ sub-district 4) Buntu Lingkobo, which is in Pana village, Alla’ sub-district and Salassa, Curio sub-district, the Lingkobo geosite is the delineation boundary for the two sub-districts 5) Mount Benteng Alla’ is located in 4 (four) administrative areas of the village, namely North Benteng Alla’; Patongloan; Tongko; Benteng Alla’ Baroko District 6) Buntu Karua is located in Pana Village, Alla’ District. Availability of non-spatial information on the geosite for the Benteng Alla’ area in the form of ethnographic records presenting the history and chorology of the formation of the geosite and the socio-cultural characteristics of the people in the research area. This study recommends developing a digital information system for the Alla’ Benteng area with GIS visualization, spatial attributes, and ethnographic records.

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REFERENCE LIST


Production Of Spatial Geosite


