



## **EXAMINING THE CONCEPT OF PROTECTION (DEFENCE) AND ISLAMIC RELIGIOUS COSMOLOGY IN VERNACULAR VILLAGE PATTERNS IN GAYO HIGHLANDS, ACEH**

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### **ABSTRACT**

Serule Village is the oldest Islamic settlement originating from the 17<sup>th</sup> century during the Aceh Sultanate and is classified as a Historical Cultural Heritage Village. Therefore, this research aimed to (1) identify the concepts of protection/defense found in the early vernacular settlement patterns of Serule, (2) analyze symbolic interpretations and Islamic values in the arrangement of Serule vernacular settlements, and (3) examine the harmonization of defense concepts with principles of Islamic cosmology in the embodiment of Serule vernacular settlements. Descriptive qualitative methods were adopted along with data collection techniques, such as observation, interviews, and literature review. The results showed that the configuration of Serule Village emphasized the importance of protecting living things and hydrological factors to avoid flooding. The linear functional spatial composition described a functional zoning system including agricultural land and graves (profane), villages (semi-profane), Nurul Iman Mosque (central area), as well as gardens and mountains (sacred). Furthermore, the research showed that the composition of landscape elements and environmental characteristics proved a harmony between the need for physical protection (defense concept) and the Islamic values found in Serule Village settlements. This discovery contributed to the development of vernacular theory regarding the concept of defense and Islamic religious values.

### **Keywords:**

Harmonization; Highlands of Gayo; Protective Concepts; Religious Cosmology; Traditional Villages in the Community; Village Spatial Planning

### **1. INTRODUCTION**

The development of traditional villages begins with the concept of physical protection. It is used to establish the community's existence, particularly against threats from external societies [1]. Inhabited villages comprise various essential values, including the provision of security, psychological comfort, and social cohesion, which fulfill human aspirations [2]. Each individual and the community have the opportunity to incorporate captivating elements into the dwellings, achieve a balance between the natural and constructed environment [3], and consider various environmental elements [4] without harming nature [5]. Creativity and beauty are often evident in the creation of living spaces, with architectural forms reflecting human activities [6].

Physical and non-physical human needs to be combined into a complex system in Eastern societies' vernacular dwelling culture, particularly in Indonesia. The concept of non-physical protection is often associated with religious cosmology, as observed in the Baduy villages of West Java [7] or the arrangement of Sasak settlements influenced by the mountainous surroundings' religious cosmology [8]. Traditional villages also evolve in connection with the development of thought about the surroundings, manifested in the physical culture. The profound understanding of the communities regarding environment gives rise to traditional or vernacular architecture.

Serule Village is an ancient Islamic settlement situated in the Gayo highlands of Central Aceh Regency, Aceh Province, Indonesia. The origin of the inhabitants is believed to be traced back to migrations from Linge, signifying the inception of the Gayo community. Linge is an ancient village that has existed since the 13<sup>th</sup> century. It was a part of the Islamic Kingdom of Peurlak in the 7<sup>th</sup> century on the East Coast of Aceh Province. The Kingdom of Linge kept on thriving until the era of the Aceh Sultanate of Nangroe Darussalam in the 17<sup>th</sup>-19<sup>th</sup> centuries [9]. Furthermore, the community did not only migrate to Serule but also to other areas; the Merah Mege Village in the Isak Sub-district of Central Aceh Regency was one of the areas [10].

The existence of Serule Village has spanned a considerable period from the colonial era under Dutch rule until the 1950s, continuing into the 1980s with the arrival of Kraft Aceh Limited (PT.KKA). Furthermore, the village expanded in 2006 when the central government designated the community as the center for the development of the Integrated Transmigration Area. Despite the political and regional development changes, the village's traditions persist with traces of the past and maintain local significance. In terms of landscape and spatial arrangement, Serule Village impresses with a unique composition of natural elements, such as mountains, valleys, and river streams, alongside human-made factors, including graves and small mosques.

Based on the observations, this research aimed to (1) identify the concepts of protection/defense in the early vernacular village pattern of Serule, (2) analyze the symbolic interpretations and Islamic values in the arrangement of Serule vernacular village, and (3) examine the harmonization of defense concepts and Islamic cosmology concepts in the manifestation of the village. The research is essential for understanding the local values required for village development, according to Law Number 6 of 2014. The contents of this law define villages as legal community units with territorial boundaries empowered to regulate and manage governance affairs based on community initiatives and ancestral and/or traditional rights within Indonesia's governance system.

The significance of Serule Village lies in the designation within the Spatial Planning Plan of Central Aceh Regency (RTRW) for the 2016-2036 period as a cultural and scientific heritage area comprising historical sites of over 37.12 hectares. Additionally, the village is a part of a unique area featuring rock formations and fossils (Atu Berukum, Atu Tapak, and Atu Keriliken) covering 0.36 hectares. Further exploration of the existence of Serule Village, along with local knowledge, is essential for the learning and understanding of future generations. [11] It is further stated that local knowledge represented a cumulative form of knowledge and beliefs transmitted through generations via cultural channels regarding the relationship between living beings and the environment.

Research on traditional settlements worldwide, especially in Indonesia's inland areas, is crucial [12][13]. Furthermore, there is a tendency for regional development to threaten the existence of traditional communities and indigenous individuals, as observed within Native Indian tribes in North America [13]. The Indonesian Law Number 11 of 2010 also regulates the development of cultural heritage areas, showing concern for traditional communities to preserve national identity while improving the welfare of the citizens. Research on traditional settlements in Indonesia have increased [14], while similar publications in the highland interior of Gayo have remained limited. Numerous publications have focused on vernacular architecture [15] and the residential environment [16]. Therefore, this research aimed to enhance knowledge about the local wisdom of traditional settlements in remote areas globally and contribute to the development of the Indonesian nation.

## 2. LITERATURE AND METHODS

### A. NATURAL LANDSCAPE, TERRITORIAL CONTROL CONCEPTS, AND ZONE SYSTEMS

Humans would initially imagine a place and further create abstract spaces that would be manifested factually under the governance of a fundamental natural force, which regulated aspects of soil characteristics, hydrology, and climatology [3]. Living spaces were created as humans determined positions for dwellings on the earth's surface, initially considering security factors against physical threats from the natural environment [17]. When locations were identified, regulatory systems were established based on an understanding of natural forces and potential security challenges from other factors. Therefore, considerations of nature's potential and challenges formed the basis for further development.

The environment was controlled by humans contextually, leading to a variety of consequences in spatial arrangement from macro to micro levels. Designing places included multiple considerations, leading to the creation of an optimal artificial environment. Furthermore, traditional settlements in Indonesia, which faced challenges such as natural disasters, were built with diverse considerations, resulting in the creation of microcosm and macrocosm concepts [18]. For example, traditional Batak Toba settlements in Sumatra's inland mountains [19] featured environmental characteristics forming fortifications from bamboo and stone formations [20]. The dominant form further reflected primary considerations among many options.

The arrangement of a place yielded zoning systems, addressing regulatory demands associated with dimensions of life ranging from physical security to self-actualization needs [17]. Consequently, negotiation spaces for various needs formed controlling spaces within the built environment. Settlement cultures generally included three aspects related to human presence; those are private, public, and service aspects. Zoning also comprised human existence in a spiritual context, resulting in sacred, semi-sacred, and profane zones.

## **B. THE CONCEPT OF TERRITORIAL SPACE CONTROL AND ITS SHAPE**

The sustainability of zoning functions within territories was closely related to the concept of territorial control over human behavior. Place markers did not have to be walls but could be a pile of stones. These markers can control who is allowed to pass through the area. Several levels of territorial control methods included (a) freely accessible spaces without control, (b) spaces under control, and (c) spaces restricted by control. This was correlated with On B's (2023) [5] statement that the creation of a "living" home started with influencing forms according to nature's needs.

The configuration and form of spaces within a territory led to several collaborative territories serving various aspects, namely (a) form, characteristics, and the interpretation of activities, (b) character of the place, including the location relative to the earth's surface and natural environment, and (c) technologies and materials capable of realization. Furthermore, interaction between spaces or places requires tolerance, consensus, and kinship [4]. Zoning systems also showed the hierarchy of space/place in a territory that distinguishes the patterns of arrangement, interaction, and connection systems, thereby forming a unique spatial organization system [21].

## **C. CONCEPTS OF ENVIRONMENTAL CONSERVATION AND VERNACULAR SETTLEMENTS**

The experiences of many traditional cultures in selecting settlement locations showed that the physical environment's characteristics determined cultural work patterns for managing the environment, thereby ensuring sustainable life [22]. The physical characteristics of nature and the abundance of natural resources influenced specific cultural patterns, often including conservation efforts imbued with certain values.

Bamboo plants were widely used to protect buildings against land erosion while providing environmental comfort in several traditional villages, as observed in the Baduy community, West Java, Indonesia [7]. The hydrological conditions ensured the presence of water throughout the year, greatly influencing the existence of a traditional settlement. Each culture possessed local wisdom related to water sources such as rivers and springs. Other living organisms, including flora and fauna, depended on natural conditions, which were protected through local wisdom due to the food source for the local community.

## **D. TRADITIONAL SETTLEMENT RELIGIOUS COSMOLOGY**

The existence of a permanent traditional settlement held various values of local wisdom, and it was often associated with religious cosmology. Cosmological consciousness focused on the balance and harmony of the relationship between the Creator and the creatures [23]. The concept of cosmology was created within the framework of earth and space sciences, researching the universe and its components [18]. It was a part of philosophy, closely related to ontology, aiming to discover the basic structure and norms of universality [24].

Religious cosmology comprises beliefs that bring tranquility through obedience and inflict harm when violated, while prioritizing the divine. The values of a place based on religious cosmology led to the concept of zones, including sacred, semi-sacred, and profane ones [3] (Permana, 2010). Numerous traditional settlement environments were situated on hills, providing security against natural challenges and external human threats. Conversely, the significance of hills was also connected to spiritual values like the ones in sanctified places [25].

## **E. ISLAMIC VALUES UNDERLYING THE CONCEPT OF RESIDENTIAL FORMATION**

Community settlements based on Islamic values generally had spatial formation elements comprising clusters of residential houses, places of worship, clean water sources, cemeteries, social spaces, and basic education facilities. The placement of these elements generally lacked specific rules, but considerations of the place's context and the community's character provided guidance. Cosmological views focused on humans who initiated balance, experienced emotions, and engaged in construction [23]. Furthermore, the religious concept of Islam (the Quran and Hadith) did not regulate spatial aspects in detail, but some important principles were considered, including:

- Seven layers of the sky and the earth were created by God, signifying Omnipotence (the Quran, Surah At-Thalaq, Verse 12). The earth was fashioned as a dwelling place for all inhabitants, with God providing sustenance to everyone, as explained in the Quran, Surah Fussilat (Verses 9-12). This showed that every

inhabitant of the earth used everything on the surface and should care of nature as a form of gratitude, including places of residence and worship.

There was a Hadith that motivated individuals to do more for the environment. This Hadith stated that "When a Muslim planted a tree or sowed seeds and later a bird, human, or animal benefited by eating the seed, it would be considered an act of charity for the individual." (Hadith narrated by Bukhari).

- The concept of water in life was shown in the source of life for all living beings (Surah Al-Mu'minun, Verses 18-19), purification (Surah Al-Anfal, Verse 11), and livelihood (Surah An-Nahl, Verse 65). In these civilizations, the upstream position of water received attention and protection. Generally, places of worship were strategically located near river streams and in elevated areas of settlements to ensure water purity. A Hadith discussed the flowing water and its proper use. It stated that "None of the Muslims should urinate or bathe in standing water which does not flow." ( Hadith narrated by Bukhari).
- Environmental suitability provided a source of sustenance and food sources, forming the foundation of sustainable living and settlement culture (Surah Al-Mu'minun, Verses 20-21).  
Jabir reported that the Prophet Muhammad (peace be upon him) said, 'Indeed, Ibrahim declared Makkah a sacred place, and now Madinah, which lies between two lava fields (valleys), would also be a sacred place. The trees and animals should not be cut down or hunted.'" (Hadith narrated by Muslim).
- The concept of time in life was related to the astronomical aspect of determining prayer times (Surah Al-Luqman, Verse 29; Surah Az-Zumar, Verse 5) and guiding observation posts for safeguarding areas. Consequently, the importance of strategic observation points was emphasized in settlement planning. In Islamic traditional settlements, religious figures determined the timing of activities related to the seasons and the movement of the sun, moon, and stars, as well as common activities in daily life, including the right time for farming, logging, and building houses. Therefore, the dwelling place (Maqam) of these figures became important, often positioned at elevated locations to monitor celestial dynamics and activities in the surrounding area. For example, the Tomb of Hamzah Fansuri from the 14<sup>th</sup> century on Ujung Pancu Hill in Aceh Besar exemplified the practice during the Early Islamic Kingdom era in Aceh [26].
- Praying in the congregation was recommended whenever there were more than three individuals in a village or inland area because, indeed, those who strayed far from the flock were preyed on by the wolf. The Hadith from Abu Darda (Hadith narrated by Abu Dawud and An-Nasa'i) motivated the construction of even simple places of worship for congregational prayers.
- Prayer facing the Qibla (Surah Al-Baqarah, Verses 148-150) influenced mosque positioning, forming the urban spatial structure of Islamic community settlements [27].

From the five concepts, complex systems generally developed; they often concentrate on places of worship as the central focus of a settlement environment with the arrangement embodying Islamic values. An example was observed in the urban spatial structure of Banda Aceh in the 17<sup>th</sup> century [28]. The mosque's position was consistently combined with the potential availability of clean water for purification. Consequently, plant elements occupied the settlement environments, fulfilling ecological functions and serving as a source of life.

#### **F. THE CONCEPT OF HARMONY AS A UNION OF VARIOUS INFLUENCES**

The concept included combining several elements that interacted with each other to achieve a balanced condition. Every harmony emitted beauty, and harmony existed in various aspects of life, including art in architecture [29]. In traditional societies, numerous values or local wisdom originated from various aspects manifesting in the architectural design of the residential houses. For example, the harmony of the spatial layout of Naga Village in Tasikmalaya integrated aspects of nature conservation and spiritual values related to water and consequently produced an environment that was well-maintained in both physical and spiritual aspects. Furthermore, Majid (2020) [30] mentioned that the reinforcement of harmony in community settlements was based on two connections namely kinship as well as tradition and religion.

#### **G. COSMOLOGY AND METHODOLOGICAL COMPARISON METHODS TO UNDERSTAND THE TRADITIONS OF SETTING**

In conducting a research in Serule Village, a vernacular architecture approach was adopted [31]. This included understanding the cosmological aspects of the object and analyzing them with a comparative approach to similar architectural objects in Indonesia. The results were then presented in a comprehensive report.

Cosmology and mythology were essential for understanding traditional settlement environments [18]. The term originated from the Greek words "cosmos," signifying the universe, and "logos," denoting science. Therefore, cosmology examines the universe's special, temporal, and compositional structures, focusing on the origin. The term mythology also originated from the Greek words "mythos," implying belief, and "logos," signifying science. Consequently, the word referred to a science discussing beliefs, suggesting the role of exploring the cultural and spiritual dimensions of societies. Myths represented early human attempts to systematically explain phenomena in nature, with cosmologists often referring to mythology as pre-scientific cosmology.

Mythological comparison was an approach to analyze the reality of phenomena from the belief perspective of other societies compared to the research object. This was necessary because not all traditional societies codified life rules and traditions into a written guide. Most of these guidelines were only remembered by customary figures in the community. The depth of analysis depended greatly on the explanations provided by the customary figures. Therefore, comparing methods with other cultures led to understanding the other culture's values.

The research method adopted a qualitative descriptive approach, including the mapping of physical data and the observation of various phenomena and signs [32]. Observation methods were used to understand the community's perception of building a village in three ways [4], namely (1) asking questions arising from observation, cause, and effect of events, (2) listening to local stories and mythology (Myth), and (3) sensing things observed and heard. This data provided perceptions of emotional, cognitive, and symbolic signs, imagination, as well as sensory experiences.

The data collection for research in Serule Village was carried out in two stages. In the first stage, macro data of the village area was obtained to understand the characteristics of various places and their relationship to the geographical potential as well as problems for the diverse purposes of community life. Furthermore, the data was processed using ArcGIS to create maps of the area's spatial structure and land use. During the second stage, important places such as residential areas, mosques, cemeteries, and agricultural lands were visited to understand the design patterns of the places for protection or defense purposes as well as religious values. Specific design patterns of the places were also identified during this phase.

Furthermore, interpretation was conducted by comparing comparative research of mythology. The data interpretation was also carried out simultaneously through in-depth interviews with local leaders and the Gayo community. This was performed to validate information and data, the truth of which could be logically rationalized. In this research, the selected village leader (Reje) was Amiruddin, and the Gayo community representative was Mr. Mukhlis Gayo who was a native of Gayo. The discussion was further conducted with a comparative approach [33] by comparing traditional settlements in several places, particularly in Indonesia.

### 3. RESULT AND DISCUSSION

#### A. LOCATION, HISTORY OF SERULE VILLAGE SETTLEMENTS, AND SOCIO-CULTURAL ASPECTS

Serule Village spans an area of 1166 hectares, located on the Bukit Barisan mountains on Sumatra Island, Aceh Province, Indonesia. The village is approximately 48 km away from the city of Takengon, the capital of the regency, and it can be reached by car in nearly 2 hours. The settlement area is positioned on the slopes of Mount Kra with a distance of 0.5 km from the mountain, which is about 1 km to the nearest river and 900 meters to the forest's edge, as shown in Figure 1.

The area of Serule Village exhibits undulating topography, characterized by several small hills surrounding Mount Kra. The diverse topographic conditions give rise to natural landscape elements such as hills, valleys, river streams, and the foothills.

The Gayo proverb "*Asal Linge Awal Serule*" is often used to symbolize the nation's identity passed down through generations, believed to originate from the ancestors, Datu Bangsa Gayo. The Kingdom of Linge on the Bukit Barisan Mountains is also situated in the Gayo Deret or Gayo Linge area [34]. This provides an overview of the connection between Serule and the ancient village. During the 8<sup>th</sup> century, the Peureulak Kingdom successfully accepted Islam and influenced the community and inland regions [35]. Serule Village was believed to be a small kingdom oriented towards the coastal kingdoms during the reign of the Peureulak Kingdom on the East Coast of Aceh as an Islamic kingdom in the 13<sup>th</sup>-14<sup>th</sup> centuries and until the Aceh Darussalam Kingdom in the 17<sup>th</sup>-18<sup>th</sup> centuries [34]. However, the values of life were still influenced by pre-Islamic traditions [9]. When associated with the power system in the pre-colonial era, the inland areas served as hinterlands with evolving power centers, such as Nuaulu Village on Seram Island [36]. Similar connection patterns exist between settlements in the Gayo Highlands and the Peureulak Kingdom, facilitated by valley routes and river streams.

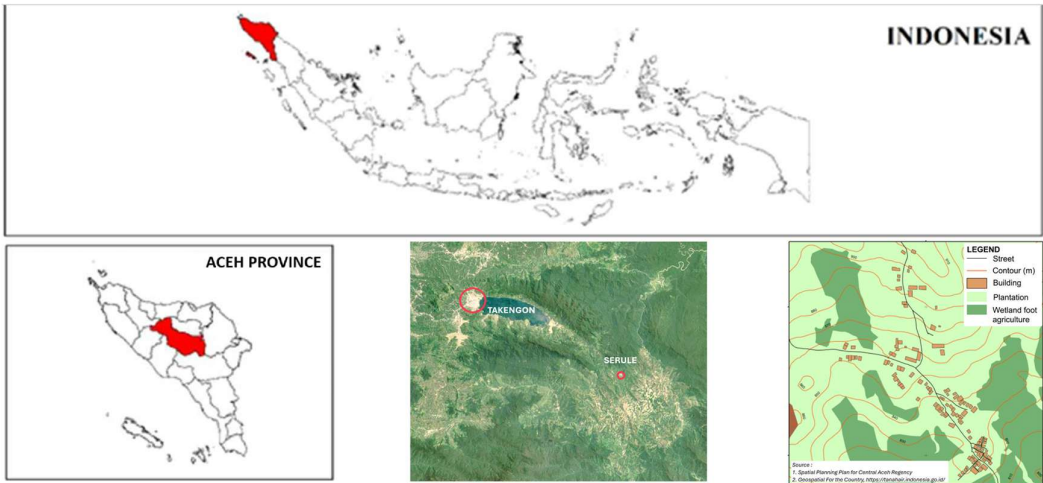


Figure 1. The location and character of Serule Village to Takengon City (Lat : 4.4885904, Long : 97.1338736)

The area surrounding Serule Village forms part of the Mount Kra area, sheltered in the Bukit Barisan mountains at an elevation of 1900 meters above sea level. The mountainous terrain boasts high biodiversity potential, including protected forest areas with geological conditions, fertile soil, and relatively high rainfall. The region’s diverse flora includes Pine, Serule, and various tropical rainforest plants, with Nipah trees thriving in the valley. The village derived its name from the plentiful Serule trees (Source: Amiruddin, 2023), following a customary tradition from pre-modern times where the location was often named based on prominent features. Therefore, understanding toponymics aids in comprehending a community’s existence within the environment [37].

The natural landscape also supports diverse wildlife, including tigers, deer, and wild buffalo, with elephants having inhabited the area in the past. These wild animals primarily inhabit the hill and Mount Kra areas, shaping the community's hunting patterns and schedules. For instance, as shared by Amiruddin as the head of Serule Village in a 2023 interview, deer hunting occurs weekly to provide food for the core family.

Presently, Serule Village is home to 469 residents and is organized into four hamlets with location-based names within the village. A significant increase in population has been witnessed by the village since its designation as the center of an independent integrated urban transmigration area in 2006. This growth coincided with the development of improved road infrastructure and modern facilities, attracting local transmigration to the advancing village. It can be observed in Table 1.

Table 1. Serule Village Medium Term Development Plan in 2022-2028

Number	Hamlet	Number of Families	Gender		Number of People	Information
			Male	Female		Location
1	Cik	21	35	33	68	Initial Village
2	Lane	33	50	47	97	Initial village
3	Kampung Baru	39	62	64	126	Development Village
4	Gunung Ijo	55	95	83	178	Development Village
TOTAL		148	242	227	227	

The table shows that the population in the original village is relatively small compared to the developed community. This further emphasized the preservation of the original area during the current development of Serule Village.

Socio-cultural life of the village follows Gayo culture, characterized by strong familial bonds. Inter-marriage within the same village is prohibited in order to reinforce kinship ties. This strong kinship bond greatly aids the community in focusing on livelihoods as hunters and farmers. There are also customary rules dictating that only men are allowed to hunt and husband-wife pairs are permitted to farm (Source: Mukhlis Gayo, 2022). Therefore, the atmosphere in the village of Serule is dominated by elderly women and children who gather in

front of houses. The observation shows a relatively calm rhythm of life, with most men engaged in tapping resin in the pine tree groves.

## B. CHARACTERISTICS OF THE LANDSCAPE OF SERULE VILLAGE AREA AT PRESENT

The Serule Village has been developing good road infrastructure and modern facilities since 2006 when the village was designated as the center of an independent integrated urban transmigration area. PT. KKA constructed the opening of roads towards the village from the West passed the Southern side of Mount Kra and changed the orientation of the main entrance road. The traditional main entrance road from the East has entry routes from the river stream. The settlement area is further divided into three zones, namely (1) the original village area, (2) the development area (1970s), and (3) the new housing area (2000s), along with facilities and infrastructure for independent integrated transmigration cities as shown in Figure 2.

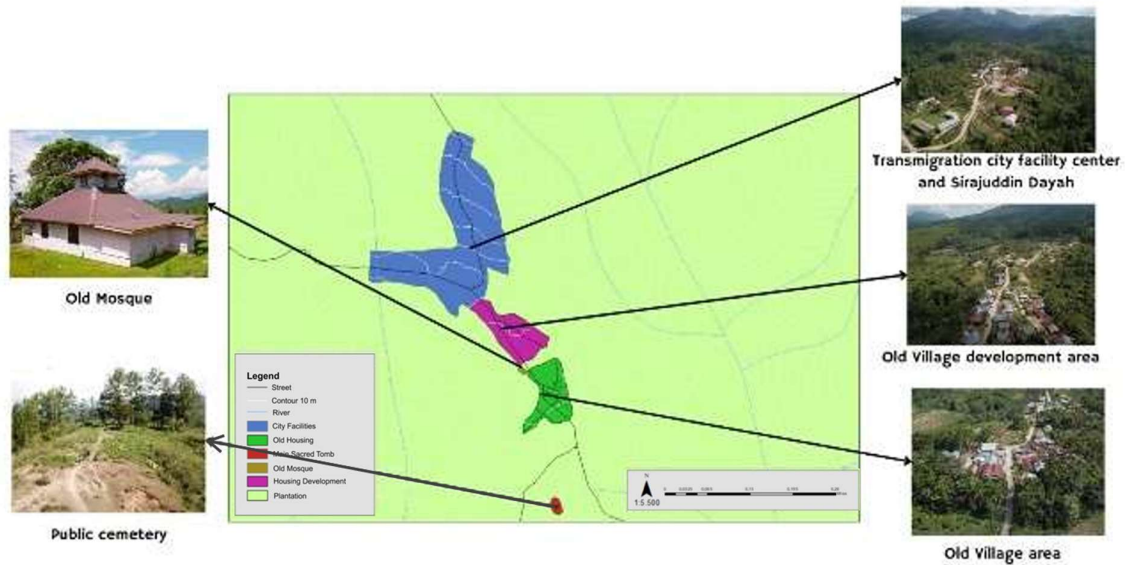


Figure 2. The Serule Village Space Zone is based on the history of the village

Based on the image, the zone of the original village appears to be currently situated behind the Serule Village area. Previously, the original village of Serule served as the entrance gate to the area with a backdrop of hills and mountains. Serule Village has various natural resources beneficial for human life and is situated at an altitude of 800-900 meters above sea level. Table 2 shows the current land use in the village.

Table 2. Current Land Use in Serule Village [Serule Village Medium Term Development Plan of 2022-2028]

No.	Land use	Land area (Hectares/Ha)
1.	Residential Area	3 Ha
2.	Rice Field Area	85 Ha
3.	Plantation Area	75 Ha
4.	Education Area	2 Ha
5.	Cemetery Area	2 Ha
6.	Sports Area	1.5 Ha

Based on Table 2, Serule Village is still predominantly surrounded by extensive rice fields and plantations. This suggests that the cultural landscape of the village remains intact, serving as a valuable asset for maintaining existing traditional and sustainable life as depicted in Figure 3.



Figure 3. The landscape of rice fields, plantations, and mountains indicates an old settlement culture

### C. CHARACTERISTICS OF RESIDENTIAL HOUSES OF THE SERULE VILLAGE COMMUNITY

Gayo indigens lived in traditional houses called "Umah Pitu Ruang" in the past, where multiple family heads were united by a kinship system. However, numerous villages, including Serule, were destroyed when the Dutch colonialists entered the Gayo highlands in 1902 until 1904 [9][38][39]. The present-day residents live in individual houses as nuclear families due to this destruction, while some communal living aspects persist in managing the environment [16].

### D. THE CONCEPT OF DEFENSE IN THE EARLY VERNACULAR SETTLEMENT PATTERN OF SERULE

The open village area stretches from the East to the South, while the Northwest lies close to the hills and Mount Kra. The landscape composition of this vast area resembles a stage, with residential areas set against a backdrop of hills, serving a protective function as depicted in Figure 4.

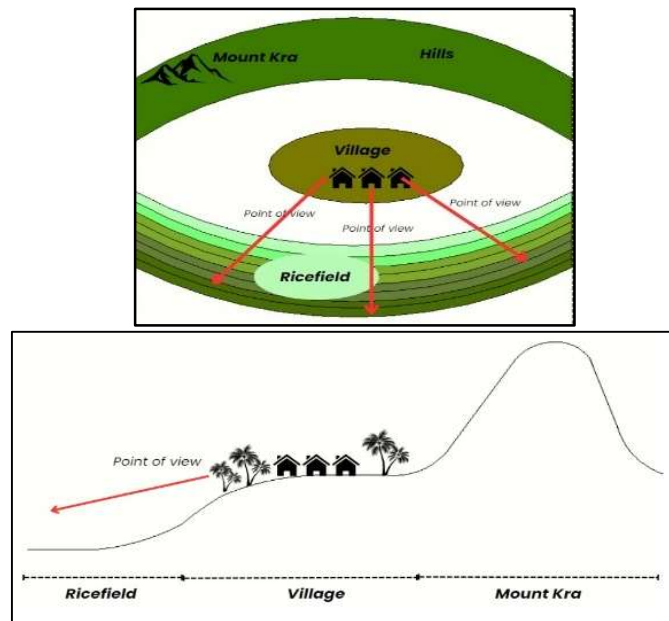


Figure 4. Scheme of the position of mountain protection towards residential areas

When observing the landscape from all directions, with the central point being the old residential area, a gradation of imaginary skyline lines evolves, signifying a transition from the low area in the Southeast to the high region in the Northwest. The skyline of the original village environment, arranged from the low area to the high region, features several hills serving various purposes. The hills serve various purposes, including (a) housing the graves of village leaders and scholars, (b) accommodating the residences of early settlers, (c) providing space for the small mosque area at the foothills, and (d) offering both flatlands for farming as well as mountainous terrain for hunting locations on the slopes of Mount Kra. This imaginary composition is depicted in Figure 5.



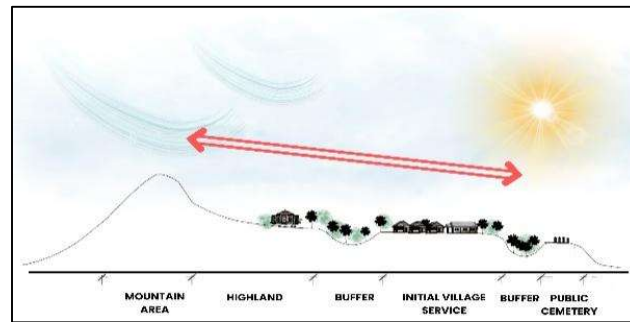


Figure 5. Schematic of Serule Village space structure

The sense of place guides humans in selecting suitable or unsuitable landscape elements that are conducive to create a sustainable living environment. Surah Al-Qasas, Verse 77, states *“But seek, through that which Allah has given you, the home of the Hereafter and do not forget the share of the world. And do good as Allah has done good to everyone without desire of corruption in the land. Indeed, Allah does not accept corrupters”*. This implies that humans should responsibly use natural resources and refrain from inflicting harm on the environment.

Based on the explanation, the existence of Serule Village in a high location surrounded by mountains, hills, and valleys shows that the village either seeks protection or uses the mountains as a defensive barrier for the region. There may have been attacks from enemies, suggesting the selection of a living place that is crucial in the ancestors’ era. Furthermore, the natural wealth of flora and fauna in that area serves as a source of livelihood, which has been continued by subsequent generations to the present day. The residential area is also surrounded by mixed gardens planted with various crops such as coconut, fruit, and other plants that are beneficial as food, herbal medicine, and other daily needs as depicted in Figure 6.



Figure 6. A residential area surrounded by various plants

The tall and dense vegetation surrounding the village creates a natural barrier, defining its boundaries and forming a protective fortress. This spatial arrangement does not only delineates the village's growth but also serves practical purposes such as preventing landslides, reducing wind impact, and enhancing thermal comfort.

The village entrance and roads are deliberately designed with a slant, deviating from a straight line and offering a strategic approach. The pattern of entering the village can be seen from both security against crime and ecological aspects. Individuals approaching the village would not be able to assess the condition in terms of security against crime, while outsiders can be easily observed from a side view. Furthermore, there is a positive ecological aspect to avoid water flow on the road surface with the winding pattern of traditional village roads as shown in Figure 7.

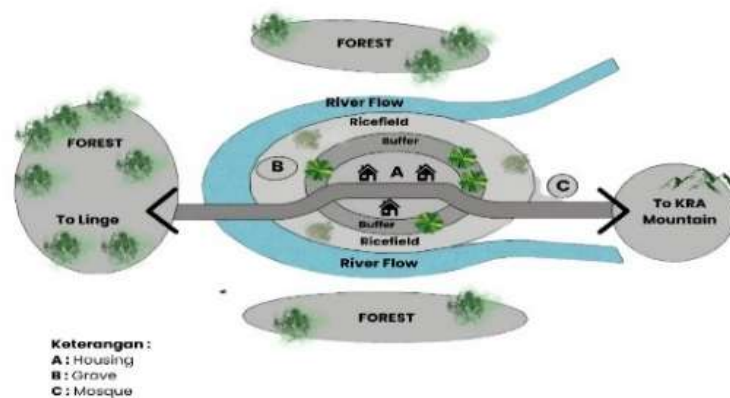


Figure 7. Schematic: Road shaft in the old village area that functions physically and non-physically

Based on the analysis of the place's characteristics, the selection of the initial settlement location is not coincidental. Humans consistently consider various factors to live sustainably, meeting basic needs provided by the natural environment involving health, food, work, and social settings [40].

The analysis of the current geographical conditions and land use suggests that this pattern has persisted over time, signifying that Serule Village has long been naturally suited to meet the fundamental needs while offering a sense of security and protection. This suggests a deliberate, intergenerational planning and preservation of landscape management practices rooted in local wisdom.

#### E. THE INTERPRETATION AND VALUES OF ISLAM IN THE STRUCTURAL PATTERN OF SERULE VILLAGE

The landscape structure of Serule Village with Mount Kra holds significant importance. Mount Kra forms an imaginary line that appears towering and majestic, greatly influencing the spatial impression of the mountain. This elevates the sacredness compared to the view towards the valley with rice fields and plantations. The early mosque also serves as the central point of the area; it is depicted in Figure 8.



Figure 8. The small mosque on the hill is estimated as a transition area between the sacred zone and the profane while functioning as an observer post

The geographical significance of Mount Kra in the landscape of Serule Village is underscored by the importance of local tradition and spiritual life. The position of Mount Kra further holds two significant values for the original Serule Village, which are:

1. There are graves of religious scholars on the slopes of Mount Kra, mirroring a common feature in traditional villages across the archipelago as a place for contemplation. Even on the gentle slopes of Mount Kra, there is a large rock (local language: *Atu*) referred to by the community as the "stone where the animals of Prophet Sulaiman played." The community enlivens the area on these slopes with livestock farming and hunting, associating Islamic stories with daily life and fostering the acceptance of religious values.
2. Mount Kra's presence in the Southwest facilitates the community in determining the direction of prayer towards the West, serving as a natural landmark for the Qibla direction. The layout of the small mosque known as Nurul Iman correlates, in parallel, to the village's circulation route; it stretches from the West to

the East. This arrangement of building masses elongates from the West to the East, creating harmony between spiritual needs and the mountainous landscape.

The mosque serves as the main center for worship as an Islamic residential area. Nurul Imam Mosque, along with the Ketapang stone near the mosque's terrace, is believed to be the original place of worship built by the early leaders. This mosque has experienced four changes, with a simple mosque initially renovated in the 1970s and is currently being expanded. Besides being a place of worship, the mosque also served as a communal cleansing area and a nighttime gathering spot for village security. Strategically and geographically situated, it does not only facilitates religious practices but also fosters social cohesion and village surveillance as depicted in Table 7. In terms of architectural design, the small mosque, Nurul Imam, reflects the traditional style prevalent in highland mosques [41].

The cemetery located on the hills to the East of the village is separated by a valley. The graves of important figures are situated on the Eastern side of the hill, while the community graves are on the flat land on the top of the hill. The Eastern position of the hill is advantageous for the cemetery location because of the relatively free disturbances caused by wild animals from the mountains. However, the presence of the graves of religious scholars in that area usually signifies a place for the scholars to do contemplation. This Eastern position is beneficial for the role of observing natural signs during prayer times as the view from the top of the hill is unobstructed in all directions and serves as a place for environmental monitoring (observation post for the village's eastern entry route).

#### **F. HARMONIZATION OF DEFENSE CONCEPTS AND ISLAMIC COSMOLOGICAL CONCEPTS IN THE REALIZATION OF SERULE VERNACULAR VILLAGE**

The landscape composition significantly influences the spatial structure and orientation of the original village of Serule. Several concepts of spatial structure can be observed from various aspects, namely (a) ensuring safety and security, (b) managing hydrology, (c) enhancing climatology and thermal comfort, as well as (d) fostering spiritual tranquility correlating with Islamic principles. These concepts contribute to the overall design and layout of the village, ensuring safety, harmony with natural elements, and spiritual well-being following Islamic principles.

##### **1. Protection Concept (Safety and Security)**

Flanked by the cemetery and small mosque, Nurul Imam, the residential area reflects a traditional Islamic community layout. In pre-modern Islamic communities in the Malay Archipelago, elevated positions of graves, including the scholars or leaders, often act as guardians and pilgrimage sites. Furthermore, the small mosque's position on the Northwest hillside serves as an indirect observation post overseeing the village's environment.

##### **2. Hydrology Concept**

The Serule Village area is prone to floods originating from the overflow of water from Mount Kra. During the rainy season, water flows swiftly from the mountain to the rivers and slopes. Therefore, selecting residential areas located on hills separated by small streams helps to avoid floodwaters. The presence of Mount Kra is also crucial for Serule Village as the mountain provides a source of clean water and food. Consequently, the community highly values the existence of the mountain by enforcing prohibitions on trees and reservoirs, preserving springs.

##### **3. Concept of Regional Climatology and Environmental Thermal Comfort.**

The open position towards the East maximizes exposure from morning to noon, unobstructed by the shadow of the mountain ranges, which is crucial for the general health of the community. From a geographical perspective, Sumatra Island's climate is influenced by the Western winds carrying heavy rainfall from the Indian Ocean. However, this influence is not significant in the village due to the location. From a hydrological aspect, housing located on hillsides will not receive rainfall runoff from the mountains, thereby protecting the village from both rain and overflow floods.

##### **4. Concept of Islamic Spiritual Comfort and Qibla Direction**

The presence of Mount Kra facilitates the determination of the Qibla direction. Similarly, the presence of a small mosque, Nurul Iman, in a high place serves as the center of worship and makes the mosque a focal point for gatherings. Furthermore, the existence of the cemetery of scholars and village leaders on the hills shows that the scholars once contemplated there with the selection of the cemetery location to avoid disturbances from wild animals. The presence of this cemetery area is a characteristic feature of Islamic residences or settlements.

#### 4. CONCLUSION

In conclusion, the establishment of Serule Village was influenced by the geographical characteristics between the Linge area and Mount Kra region during the migration process of the community from Linge in the Islamic Kingdom era around the 13<sup>th</sup>-15<sup>th</sup> centuries AD. The village's entrance route from the East following the river's flow towards the Mount Kra area showed that the route was the only ideal path in ancient times. Furthermore, the farming areas of the community were situated between the Linge area and Serule Village. In the development of the spatial plan of the Serule Village area, several important aspects were considered namely.

- 1) The open landscape character towards the East influenced the spatial layout and zoning, as well as the main circulation axis within the village which previously used an open courtyard. The influence of the sunrise on the Eastern side of the village also provided positive value to the village in terms of air circulation and sunlight exposure, beneficial for health and drying agricultural products.
- 2) The potential of Mount Kra to the West strengthened the village's existence both spiritually and physically.
- 3) The positioning of houses on hills with a buffer zone comprised the concept of protection both physically and spiritually.

The village had both physical fortifications and spiritual imagery safeguarding the existence against natural forces, living beings (humans and animals), as well as the connection with God the Creator. In terms of spatial planning in Serule Village, there was harmony between considerations of place potential and ecological balance, which was highly significant in Islamic values. The religious concepts of Islam did not intricately regulate spatial aspects, thereby granting humans the freedom to interpret places according to their needs. This correlated with the explanation given in the Quran and Hadith that all places on the earth were mosques due to their sacredness and peaceful living as God has provided sustenance for all creatures.

The social and cultural life of the Serule Village community was further based on Islamic values. This correlated with the research of Hasan et al. (1980) [42] stating that Gayo culture was based on Islamic values manifesting in all aspects of community life. Traditionally, it was well-known in arts such as dance, music, and drama. In various messages conveyed, there was consistently an emphasis on harmonizing social life and preserving the environment. Conceptually, the composition of the natural landscape and built environment elements formed a harmonious composition between the need for physical protection and the concept of Islamic cosmology, which was based on Islamic values.

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#### REFERENCES

- [1] R. Schefold, P. J. M. Nas, G. Domenig, R. Wessing, *Indonesian Houses, Volume 2, Survey of vernacular architecture in western Indonesia*. Leiden: KITLV Press, 2008.
- [2] M. J. Amerlink, *Architectural Anthropology*, Westport, Connecticut: Bergin & Garvey, 2001.
- [3] C. N. Schulz, *Genius Loci: Towards A Phenomenology of Architecture*. New York: Rizzoli, 1984.
- [4] N. Crowe, *Nature and the Idea of a Man-Made World: an investigation into the evolutionary roots of form and order in the built environment*, Cambridge, MA: MIT Press, 1995.
- [5] O. N. Babakandov, "Harmony of Architecture with Nature", *Central Asian Journal of Arts and Design*, vol. 4, No. 4, pp. 63-66, 2023.
- [6] I. K. Pranajaya, "Kearifan lokal, etika arsitek dan lingkungan menuju harmonisasi arsitektur bali yang kreatif, estetika dan terpadu", In *Proceeding Seminar Nasional, Perencanaan Dan Penataan Kawasan Terintegrasi*, 2013.
- [7] R.C.E. Permana, I.P. Nasution, J. Gunawijaya, *Kearifan Lokal Masyarakat Baduy dalam Mitigasi Bencana*, Jakarta: Wedatama Widya Sastra, 2010
- [8] I. Istiqamah, W. Q. Mugnisjah, and A. Gunawan, A. (2020). "Model Design of Traditional Settlement of Sasak Limbungan, East Lombok Regency, West Nusa Tenggara", *IOP Conf. Series: Earth and Environmental Science*, vol. 501, 2020, doi:10.1088/1755-1315/501/1/012038
- [9] H.H.A. Asnah, Gayo, *Masyarakat dan Kebudayaannya Awal Abad ke 20*, Jakarta: Balai Pustaka, 1996
- [10] E. Wulandari, D. E. Idawati, B. Nasution, *Eco-Logic pada Perkembangan Lingkungan Perkampungan dan Arsitektur Vernakular di Dataran Tinggi Gayo dan Sistem Keberlanjutannya*. Unpublished research report, Universitas Syiah Kuala, 2023

- [11] S. Adiwijaya, M. A. Rafsanjani, Y. Kaharap, S. Siyono, & A. A. Bakri, "Pentingnya Keberlanjutan Kearifan Lokal Dalam Era Globalisasi", *eL-Hekam: Jurnal Studi Keislaman*, Vol. 7, No. 1, pp. 126-138, 2023.
- [12] A. S. Keraf, *Filsafat Lingkungan Hidup: Alam sebagai Sebuah Sistem Kehidupan Bersama Fritjof Capra*, Sleman: Kanisius, 2014
- [13] R. E. Bosko, *Hak Hak Masyarakat Adat Dalam Konteks Pengelolaan Sumber Daya Alam*. Jakarta: Penerbit Elsam. Jakarta, 2006
- [14] I. K. M. Wijaya, N. K. A. Dwijendra, "Conceptions of the Vernacular Settlement Architecture Orientation: A Literature Study of Research Result", *International Journal of Engineering and Emerging Technology*, Vol. 6, No.1, 2021, DOI: <https://doi.org/10.24843/IJEET.2021.v06.i01.p12>
- [15] Z. Zulfikri, M.H.A. Edytia, E. Wulandari, P. Arafat, F. Sabila, "Morphology and Facade Study of Umah Pitu Ruang (Case Study: Umah Edet Reje Baluntara in Toweren Village, Aceh Tengah)", *Arsitektura Jurnal Ilmiah Arsitektur dan Lingkungan Binaan*. Vol. 21, No. 2, pp. 195-206, 2023, DOI: <https://doi.org/10.20961/arst.v21i2.76551>
- [16] R. S. Yanti, P. Arafat, E. Wulandari, "Kajian Karakteristik Lansekap Umah Pitu Ruang (Upr) Umah Edet Reje Baluntara Di Desa Toweren Uken Kecamatan Lut Tawar Kabupaten Aceh Tengah", *Jurnal Lanskap Indonesia*, Vol. 15, No. 2, 2023. DOI: <https://doi.org/10.29244/jli.v15i2.44561>
- [17] N. J. Habraken, *The Structure of the Ordinary: Form and Control in the Built Environment*, MIT Press, 2000
- [18] Mangunwijaya, *Wastu Citra*. Jakarta: Gramedia, 1988
- [19] S. Situmorang, *Toba Na Sae: Sejarah Lembaga Sosial Politik Abad XIII--XX*, Jakarta: Komunitas Bambu, 2004.
- [20] R. R. Tobing, & A. K. Sakti, "Identification of the Architectural Housing Form and the Existence of Ulos Communities in Hutaraja Village, Samosir, North Sumatra, Indonesia", *IOP Conf. Ser.: Earth Environ. Sci.*, vol. 903, 2021. DOI 10.1088/1755-1315/903/1/012007
- [21] F. D. Ching, *Arsitektur: Bentuk, Ruang dan Tataan*, Jakarta: Erlangga, 2008
- [22] D. Indradewa, *Etnoagronomi Indonesia*. Lily Publisher, 2021.
- [23] S. S. Ola, & L. I. D. Koroh, "A Cosmological View of Religion and Beliefs Towards a New Humanism", *The International Journal of Social Sciences World (TIJOSW)*, vol. 3, No. 2, pp. 185-192, 2021. DOI: <https://doi.org/10.5281/zenodo.5301611>
- [24] D. S. Siahaan, "Dialogue of Christian Eco-Theology with Hindu Cosmology in the Disruption Era", *International Journal of Interreligious and Intercultural Studies*, vol. 3, No. 1, pp. 48-56, 2020. DOI: <https://doi.org/10.32795/ijiis.vol3.iss1.2020.686>
- [25] Geoffrey and S. Jellicoe, *The landscape of man*. New York: Thames and Hudson, 1995
- [26] E. Wulandari, Z. Zahriah, Z. Fuadi, F. Sabila, "Regulatory function of spatial structure on Ujung Pancu area, Aceh", *IOP Conf. Series: Earth and Environmental Science*, vol. 881, 2021, doi:10.1088/1755-1315/881/1/012063
- [27] A. Wiryomartono, R. Bagus, *Seni Bangunan dan Seni bina Kota di Indonesia*. Jakarta: Gramedia Pustaka Utama, 1995.
- [28] E. Wulandari, S. Soetomo, J. A. Syahbana, A. Manaf, "The Ecology Character of Banda Aceh City in the 17th Century", *Journal of Islamic Architecture*, vol. 4, No. 3, 2017, DOI: <https://doi.org/10.18860/jia.v4i3.3872>
- [29] S. D. Namazovna, "Harmony of Art in Architecture of Uzbekistan", *The American Journal of Social Science and Education Innovations*, vol. 3, No. 05, pp. 87-94, 2021. DOI: <https://doi.org/10.37547/tajssei/Volume03Issue05-16>
- [30] A. N. Majid, Z. Muzakki, & I. Amini, "Harmonisasi Sosial Berbasis Kearifan Lokal Islami Dalam Masyarakat Tanèan Lanjång Madura", *Jurnal Asy-Syukriyyah*, vol. 23, No. 2, pp. 177-194, 2022, DOI: <https://doi.org/10.36769/asy.v23i2.264>
- [31] A. Asadpour, "Defining the Concepts & Approaches in Vernacular Architecture Studies", *National Academic Journal of Architecture (nature)*, Vol. 7, No. 2, pp. 241-255, 2020, DOI: <https://doi.org/10.24252/nature.v7i2a8>
- [32] M. A. Rosyadi, A. Ashadi, & W. Aqli, "Penerapan Teori Arsitektur Semiotik Pada Creative And Performing Arts Center Yogyakarta", *PURWARUPA Jurnal*, vol. 3, No. 2, pp. 247-261, 2019
- [33] C. Nursaniah, L. Maisari, C. Yusra, L. Mahariani, F. Jubhilla, A. Qadrunnada, S. Aini, B. A. Kayan, "Safeguarding Cultural Heritage Site: Comparative Study for Establishing Conservation Initiatives on Indrapuri Fort, Aceh Besar". *Planning Malaysia: Journal of the Malaysia Institute of Planners*, Vol. 21, No. 1, pp. 247-261, 2023. DOI: <https://doi.org/10.21837/pm.v21i25.1237>
- [34] M. H. Gayo, *Perang Gayo Alas Melawan Kolonialis Belanda*. Jakarta: PN. Balai Pustaka, 1983.

- [35] R. Aizid, *Sejarah Kerajaan Kerajaan Hindu-Budha di Era Klasik: hingga munculnya Penharuh Islam di Nusantara*. Yogyakarta: PT Anah Hebat Indonesia, 2023
- [36] T. M. Li, "Keterpinggiran, Kekuasaan, dan Produksi: Analisis Terhadap Transformasi Daerah Pedalaman", *Proses Transformasi Daerah Pedalaman di Indonesia*. Jakarta: Yayasan Obor Indonesia, 2002
- [37] V. R. Savage, "Place Names", *International Encyclopedia of Human Geography (second Edition)*, pp. 129-138, Elsevier, 2019, DOI: <https://doi.org/10.1016/B978-0-08-102295-5.10852-2>
- [38] A. R. Pinan, H. Aman, *Pesona Tanah Gayo*. Penerbit Pemerintah kabupaten Aceh Tengah, 2003.
- [39] M. F. Yosantia, *Arsitektur Rumah Tradisional Gayo Berdasarkan Memori Kolektif*, Master Thesis, Departement of Architecture and Planning, Engineering Faculty, University Syiah Kuala, 2022.
- [40] M. Kaltenborn, M. Krajewski, H. Kuhn, "Sustainable Development Goals and Human Rights", *Interdisciplinary Studies in Human Rights*, Springer Nature, 2020, Doi: 10.1007/978-3-030-30469-0
- [41] L. H. Sari, E. Wulandari, Y. Idris, "An Investigation of the sustainability of old traditional mosque architecture: case study of three mosques in Gayo Highland, Aceh, Indonesia", *Journal of Asian Architecture and Building Engineering*, Vol. 23, No. 2, Pp. 528-541, 2024, Doi: <https://doi.org/10.1080/13467581.2023.2245006>
- [42] M. A. Hasan, *Kesenian Gayo Dan Perkembangannya*, Balai Pustaka, 1980.