

Temporary Shelter Based on Local Wisdom in Post-Disaster Recovery: The *Kaili* Community in Sigi Central Sulawesi

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Abstract:- The 2018 earthquake, tsunami, and liquefaction that struck Palu, Sigi, and Donggala caused significant destruction and profound psychosocial impacts on the local communities. Amid this crisis, the *Kaili* community—an ethnic group in Sigi—demonstrated a unique response by setting up emergency tents in *Doyata*, which in the *Kaili* language refers to the front yard of the house. Instead of evacuating to government-provided shelters, they chose to use *Doyata* as a temporary evacuation space offering protection within their immediate environment. This decision reflects an emotional attachment to their space and the application of local wisdom in disaster response. This study aims to explore the role of *Doyata* as a temporary evacuation space and a local knowledge-based disaster mitigation strategy. The research focuses on the social, cultural, architectural, and physical dimensions that influence the use of *Doyata* in the post-disaster recovery context. A qualitative naturalistic approach was employed to collect data through in-depth interviews, participatory observations, and field documentation. Inductive analysis was applied to uncover patterns and meanings in the practice. The findings reveal that *Doyata* is not just a front yard but a multifunctional space that embodies the emotional and cultural values of the *Kaili* community. Factors such as land size, kinship relationships, traditions passed down through generations, and architectural elements supporting the space contribute to shaping *Doyata* as a temporary shelter. In addition to serving as a physical refuge, *Doyata* also strengthens social solidarity and community independence in the aftermath of the disaster. This study concludes that *Doyata* holds significant potential as a temporary shelter based on local wisdom, which not only supports the physical resilience of the community but also preserves their dignity and cultural identity. Integrating this concept into disaster mitigation policies could enhance national strategies by fostering more inclusive and locally grounded approaches.

Keywords:- *Doyata*, Temporary Evacuation Space, *Kaili* Community, Disaster Mitigation.

I. INTRODUCTION

The devastating earthquake that struck Palu, Sigi, and Donggala in 2018 was not merely a natural event, but a disaster that brought widespread destruction and left deep sorrow for the local communities (BNPB, 2018). Houses were destroyed, families lost loved ones, and the sense of security that had been felt for so long suddenly vanished. The main earthquake, with a magnitude of 7.6 on the Richter scale, was centered in Lende Village, Donggala Regency, causing extensive damage, and its effects were felt as far as Sigi Regency, approximately 128 km from the epicenter. Additionally, liquefaction occurred in several villages, which are part of Sigi Regency.

Sigi is one of the regencies in Central Sulawesi, predominantly inhabited by the *Kaili* ethnic group. This study focuses on Sigi Regency, specifically the *Kaili* community directly affected by the 2018 earthquake disaster. The *Kaili* community involved in this research consists of those who experienced damage from the earthquake, while those residing in areas impacted by liquefaction are not part of this study.

Disaster victims are often isolated, difficult to reach, and stranded in hazardous and volatile environments. Statistics reveal that inadequate preparedness is a major challenge encountered when addressing post-disaster issues [1]. In emergency situations like this, public shelters are usually the primary choice for disaster victims to seek refuge and feel safe from aftershock threats following the main earthquake. However, most *Kaili* people living in Sigi Regency chose to remain in their local surroundings, reluctant to move to government-provided evacuation sites. Instead, they set up emergency tents in *doyata* (the front yard or courtyard) of their homes. In the *doyata*, they continued their daily activities in the aftermath of the disaster until the intensity of the aftershocks decreased, and they felt it was safe enough to resume normal activities and return to their homes.



Fig. 1. Damage caused by the 2018 Palu, Sigi, and Donggala Earthquake
Source: Personal Documentation, 2018

Doyata refers to the front yard or courtyard located on a plot of land that is privately owned. The layout of the courtyard is influenced not only by physical factors but also by social, cultural factors, and the functions it serves based on the needs of its inhabitants. The structure of the courtyard is not fixed but can change over time, adapting to the evolving needs and development of the community [2]. This study aims to explore the story behind the selection of *Doyata* as an evacuation site by the *Kaili* community during the 2018 earthquake in Palu, Sigi, and Donggala. Through in-depth interviews, the research seeks to understand how the *Kaili* community's connection to disaster, home, and *Doyata* shaped their decision to use this space during the 2018 disaster event.

The primary research question in this study is: What motivated the *Kaili* community in Sigi Regency to choose *doyata* as a temporary evacuation site after the disaster, despite the availability of government-provided shelters? Additionally, how did social, cultural, and physical factors influence this decision, and how did the emotional attachment and cultural identity of the *Kaili* people impact their choice to remain in *doyata* after the 2018 earthquake? This study aims to answer these questions through a qualitative approach, with in-depth interviews as the primary method.

II. LITERATURE REVIEW

A. Housing and Settlement

In essence, to live means to exist and reside together. Therefore, the function of housing in human life is as a place necessary for individuals to socialize. Social and cultural aspects also influence how a dwelling is built (space arrangement and form); however, the functions of space are still maintained. The cultural system serves as the backdrop for the creation of housing forms. In this context, the cultural system refers to the factors that become considerations when

designing and building a dwelling. These factors include religion, social relationships, livelihood, and the natural environment [3].

Settlements have specific natural characteristics and spatial structures as living spaces for communities. The main orientation, such as the relationship between the location and the natural conditions with various positive and negative potentials, is part of the interaction between space, housing, and settlements, which emphasizes social culture and civilization. The construction and form of houses and settlements are seen as embodiments of the cultural values of the communities that grow and develop (Rapoport, 1969) [4].

B. Local Wisdom of the *Kaili* Community in Architecture and Life

Wisdom is a form of knowledge that goes beyond customary practices. The original source of wisdom comes from the values of religious traditions, ancestral advice, or local culture, naturally developed within the community to adapt to the natural environment [5]. Local wisdom is usually reflected in the long-standing customs of a community. The continuity of local wisdom is reflected in the values upheld within a particular community group. These values become the guiding principles of the group, often forming an inseparable part of their lives, which can be observed through their daily attitudes and behaviors [6].

Local wisdom is considered an important part of knowledge. Therefore, it is passed down from generation to generation within traditional communities. Local wisdom is essential for creating a better living environment through ideas, planning, implementation, and evaluation [7]. The *Kaili* ethnic group has been known since the era of the kingdoms around the 15th century. The *Kaili* people still practice their culture in real life, such as traditional ceremonies, birth

rituals, and the values that are referenced in the customary law of the *Kaili* [8]. In building houses and settling, the *Kaili* people still practice the local wisdom they understand, such as the concept of macrocosm becoming the concept of microcosm, which is reflected in their homes and settlements. The process of internalizing cosmological concepts into homes and environments aims to create a sense of safety and to avoid the possibility of disasters. The harmonious relationship between humans and the rulers of nature is manifested in various traditional ceremonies that fill the life of the *Kaili* people. This process demonstrates that a balance has been achieved between the home and the surrounding natural environment [9].

C. The Characteristics and Functions of Doyata in the Kaili People's Dwelling

In terms of outdoor spatial arrangement and vegetation, the *Kaili* community's yard environment has a distinct image. The *doyata* of a *Kaili* house typically consists of a spacious yard, where the boundary is marked by a ditch or local vegetation that grows in the area. Additionally, protective plants such as jackfruit, mango, guava trees, and others are planted on top. The characteristics and size of the *doyata* vary depending on social, economic, and kinship status. Based on

field observations, the *doyata* is the front yard where the house is oriented, but some areas referred to as *doyata* also include the left and right side yards of a house, with the boundary of the side yard not crossing the kitchen (*avu*) at the rear. This boundary can be illustrated because the spatial hierarchy in the *Kaili* settlement always places the kitchen at the back.

The horizontal spatial hierarchy in *Kaili* community housing is divided into three sections: the public area at the front, which serves as a space for receiving guests (*posiromu*), the semi-private area, which functions as the children's room, dining area (*tatangana*), and the private area, which serves as the parents' room and kitchen (*avu*) [10]. Figure 2. An illustration depicting *Doyata* in the *Kaili* community's understanding based on horizontal spatial hierarchy. *Doyata* also serves as a space for resilience, often used for cultivating plants that function as medicinal herbs or for the needs of the mother (*ntina*) in the kitchen area. The prospects for developing the yard can continue to be optimized in relation to the existing potential, such as through innovations in integrated farming methods and cultivating a wider variety of plants for the purpose of diversifying various essential materials based on local resources [11].

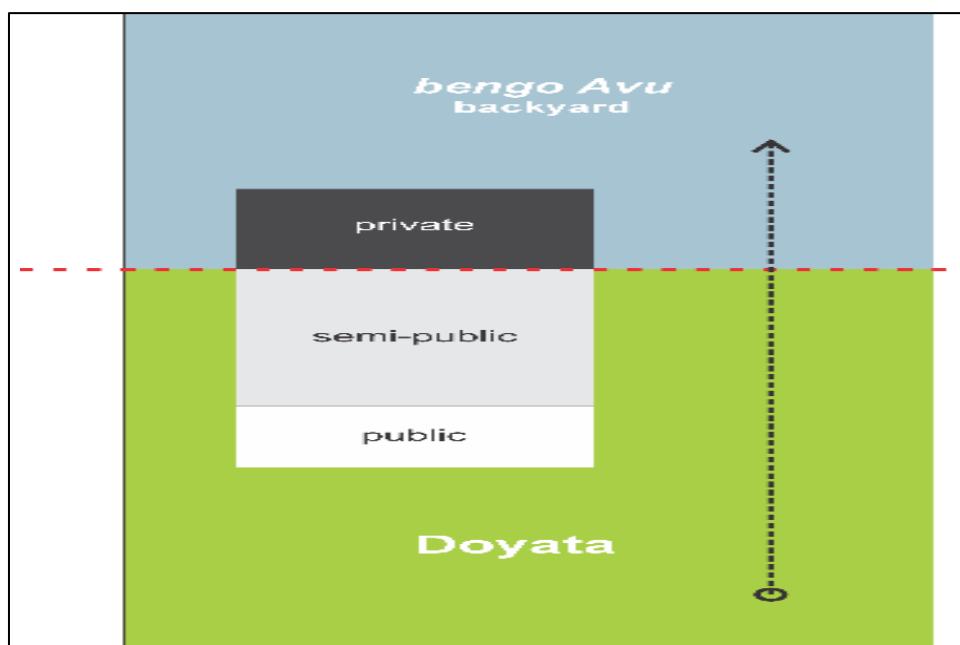


Fig. 2. Illustration of the Horizontal Spatial Hierarchy of the Kaili Community

III. REASEARCH METHODS

This study employs a naturalistic qualitative approach aimed at understanding the evacuation phenomenon in *Doyata* as a temporary shelter for the *Kaili* community from danger and as a refuge for earthquake survivors following the 2018 disaster in Sigi Regency. The qualitative approach was chosen because it allows the researcher to deeply explore the experiences, values, and social practices that naturally evolve within the local community context.

The researcher adopts a physical-traditional strategy, focusing on direct observation of individual interactions and physical behavior within their social environment, referencing documents and experiences from the 2018 disaster event. This approach enables the researcher to understand the social dynamics occurring on the ground without direct intervention.

Data was collected through three primary techniques: participatory observation, in-depth interviews, and documentation. Participatory observation was conducted by directly engaging in the *Kaili* community's post-disaster life to observe social interactions and daily behaviors at *Doyata*. In-depth interviews were conducted with key informants, such

as heads of households and community members involved in the evacuation and recovery process. Documentation was used to gather secondary data, including disaster reports, post-disaster photos, and relevant field notes.

The data analysis process was carried out inductively, identifying patterns, meanings, and relationships emerging from the collected data. This analysis aims to provide a holistic understanding of the social reality under investigation, highlighting the local context influencing the *Kaili* community's decisions and behaviors when facing disaster. The analysis is expected to comprehensively depict how *Doyata* functions as a space for protection and evacuation based on local wisdom.

IV. RESULTS & DISCUSSION

A. *Doyata* as a space of resilience

The decision to stay in *Doyata* is not only based on physical comfort but also on a deep emotional attachment to

the space, which has become an inseparable part of the daily life of the *Kaili* people. The concept of place attachment can explain this phenomenon more clearly. Each space not only functions as a physical place but also holds memories, stories, and a sense of ownership that are difficult to replace or transfer. This attachment forms a psychological bond between individuals and their environment, providing a sense of security and comfort, even in disaster situations. Thus, the presence of *Doyata* is not merely a physical place but also a symbolic space that unites the identity and collective history of the community. The attachment to the built environment that is constructed and inhabited serves as another way for the community to showcase their identity and culture, setting them apart from other communities [12]. Length of residence also becomes a factor, alongside culture, where *place attachment* is greatly influenced by the duration of stay [13]. *Doyata* remains a strong anchor, offering a sense of stability amidst uncertainty.



Fig. 3. The Evacuation Tents Were Set Up in the Yard (*doyata*)

Source: Personal Documentation, 2018

B. Post-Disaster Adaptation of the *Kaili* Community

The *Kaili* community is quick to adapt in order to maintain inner peace and ensure their survival, both as individuals and as a community [14]. Deliberation, kinship, and cooperation remain the core principles of the *Kaili* way of life, reflected in the creation of unlimited spaces and the

carrying out of various daily activities [15]. This depiction of the *Kaili* community aligns with findings that, after the main earthquake occurred, in less than 24 hours, the *Kaili* people had already completed setting up tents/shelters on *Doyata*, which became their refuge from the potential dangers of aftershocks.

Meanwhile, traces of craftsmanship from the *Kaili* people's nomadic past were also evident in the reality of the disaster, as the shelters built for protection still employed knotting and binding techniques. This further reinforces the reality that in 2018, the *Kaili* community experienced a repetition of the same events and critical situations. As a result, without their realizing it, they were able to act swiftly and adaptively.

Despite the *Kaili* people's local knowledge, tents can protect victims, but they do not provide the dignity they need once other disasters arise, which may affect them both physically and psychologically. Given this, emergency shelter architecture must be immediately considered, with a focus on

comfort to ensure dignity and respect for disaster survivors [16].

C. Hierarchy and Function of Safe Space in Doyata

The results of data collection from the field using a physical-trasis strategy, based on the informants' experiences and observations at the study site, indicate that the dimensions of the safe space in *Doyata* vary significantly depending on the legally owned land size and the economic background, social status, and family relationships of each inhabitant. However, there are similarities related to the location and physical characteristics, which are divided into three major groups: Single residence *Doyata*, Double residence *Doyata*, and Family *Doyata* (inherited land/plots).

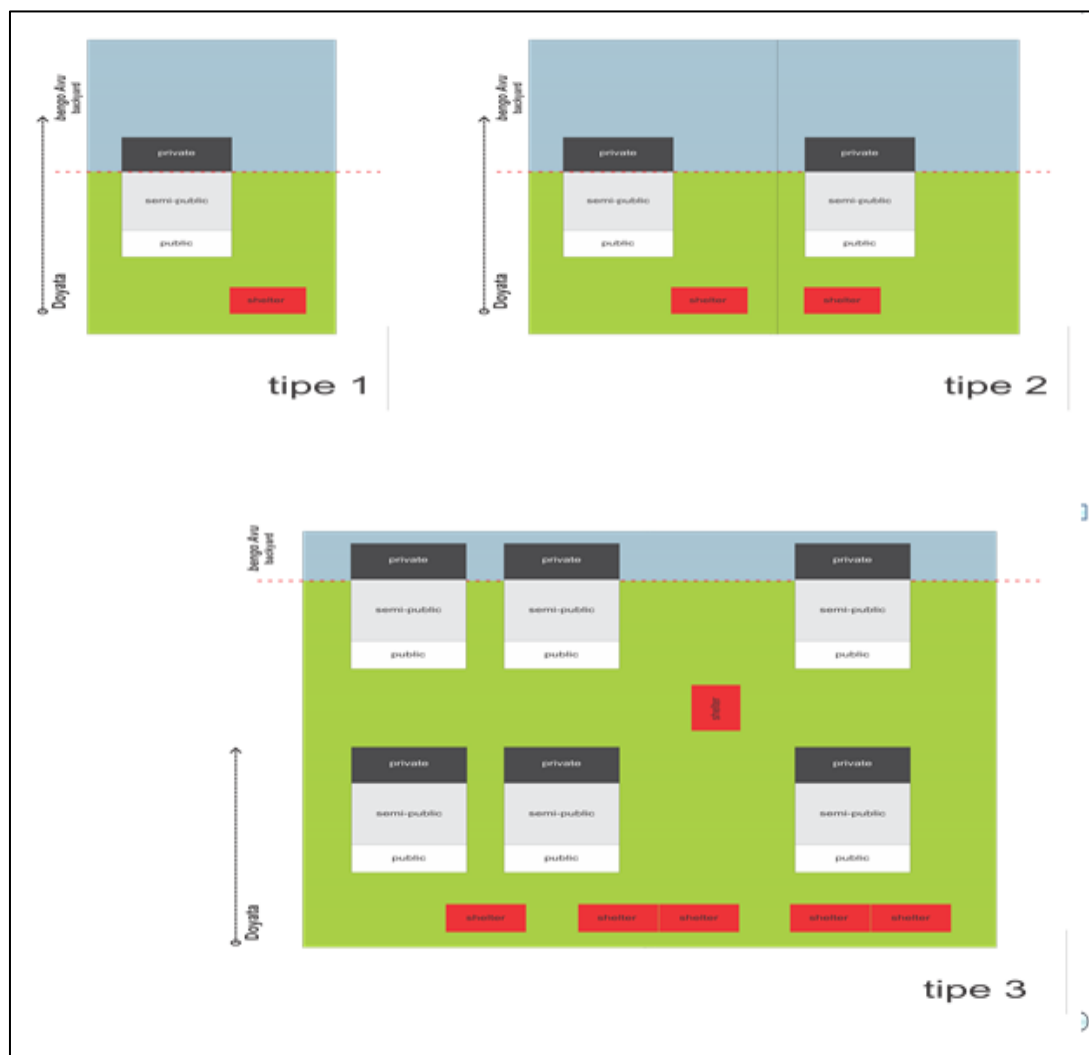


Fig. 4. Dimensions and Safe Spaces in *Doyata*: (1). Single Residence *Doyata*, (2). Double Residence *Doyata*, (3). Family *Doyata*. Source : Processed based on field observations.

The physical characteristics of the land, such as the surface of the ground or grass, provide sufficient dimensions for setting up emergency tents, as explained in the grouping shown in Figure 4. Additionally, a safe distance from the risk of being hit by a building is maintained, with the distance between the building and the tent placement being twice the height of the house located on the site. A unique finding is that in *Doyata*, the *Kaili* community rarely encounters

harmful vegetation, such as coconut trees, which could potentially injure individuals during an earthquake. Such hazardous vegetation is found in the rear part, which, according to the horizontal space hierarchy, falls within the private zone.

The dimensions, location, and hierarchy are closely linked to traditions passed down from generation to

generation, creating a positive space believed to be a vital area that must be preserved, as it represents a source of life and protection from disasters. It is hoped that happiness and fulfillment of needs will emerge from this positive space. Conversely, negative space refers to areas believed to cause disasters if traditional rules are violated [17].

D. Cultural Meaning in the Life of the Kaili Community

Doyata is not merely an empty space in the front yard but a place rich with cultural and emotional significance. *Doyata* serves as a space where families gather, share stories, and carry out daily life with warmth. In *Kaili* community traditions, *Doyata* symbolizes closeness to ancestral land – a place that provides a sense of security, comfort, and stability, in line with siradjuddin [9] The *Kaili* people follow a guiding principle in life known as *Pehakovia*, a cosmological concept related to the selection of space, location, and the establishment of houses and settlements. This choice reflects their understanding of cosmological concepts and a deep desire to remain in familiar environments – spaces that provide peace amidst uncertain situations.

V. CONCLUSION

This study was conducted to explore the factors that drive the *Kaili* community in Sigi Regency to choose *doyata* as an evacuation site after the 2018 earthquake, despite the availability of government-provided shelters. The findings indicate that the selection of *doyata* is influenced not only by physical factors but also by a deep emotional attachment and the cultural values inherent to the *Kaili* community. *Doyata* serves as a protective space with symbolic meaning, providing a sense of security and fostering strong social bonds among community members. This concept of place attachment, which is also related to the local wisdom of the *Kaili* people, plays a significant role in their decision to remain outside formal evacuation shelters.

In the socio-cultural context, *doyata* is not merely a physical space but an integral part of the *Kaili* community's daily life. Through *doyata*, the community creates a resilient space that unites their cultural identity. This study found that *doyata* serves as a place that preserves local wisdom and fosters a sense of stability amidst post-disaster uncertainty. This aspect also highlights the importance of understanding local wisdom as part of disaster mitigation rooted in community values.

Although the findings provide valuable insights into the selection of *doyata* as an evacuation site, the study has certain limitations. One of these is the focus on the *Kaili* community directly affected by the earthquake, without covering areas impacted by liquefaction. Furthermore, the long-term effects of choosing *doyata* as an evacuation site on the social and psychological conditions of the community have not been fully explored. Therefore, future research should develop broader studies that consider psychological and social aspects and evaluate the long-term impact of *doyata* as a place of refuge.

The hope from this study is that *doyata* can serve as an important lesson in exploring the potential for community-based disaster mitigation. The concept of *doyata* illustrates how communities can leverage their local wisdom and attachment to physical spaces to design more responsive and sustainable mitigation systems. Consequently, *doyata* not only functions as a post-disaster refuge but also as a symbol of community strength in facing disaster risks and building stronger social resilience. Further research is expected to deepen the understanding of the application of these community-based principles in broader disaster mitigation policies.

ACKNOWLEDGMENT

The author expresses gratitude to the *Kaili* community in Sigi Regency, who participated in this study, and to the lecturers of the Master's Program in Architecture at Tadulako University for their support of this research.

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