

Social Geography Study On The Distribution Of Uninhabitable Houses In Landslide Prone Areas, Kelumbayan District, Tanggamus Regency

Dedy Miswar*, Sudarmi, Yarmaidi, I Gede Sugiyanta, Rizki Fadhila Rahman

Universitas Lampung. Indonesia



Abstract – This study aims to examine the distribution of uninhabitable houses from a social geography perspective for landslide-prone areas. The subjects in this study were 29 uninhabitable houses in Kelumbayan District. The method used was a survey based on the criteria for uninhabited houses issued by BAPPENAS and BPS. The variables used in this study include: the floor area of the house, the type of building walls, toilet facilities, energy sources, and water sources. In addition, to strengthen the research results also use the level of education, the number of members in the house. Data were collected through observation, interviews, and documentation. The data analysis used descriptive social geography approach. The results showed that almost all houses that were unfit for habitation in the study location were located in landslide prone areas. The conclusion in this study is that the condition of the house is not suitable for habitation is very much influenced by the social conditions of the community itself.

Keywords – Social Geography, Uninhabitable House, Landslide Prone Areas.

I. INTRODUCTION

Natural disasters are disasters caused by an event or a series of events caused by nature, among others, in the form of earthquakes, tsunami, volcanic eruptions, floods, droughts, hurricanes, and landslides [1, 2, 3, 4, 5]. It is well known that natural disasters are the result of interactions between natural hazards and vulnerable situations. Apart from being affected by natural disasters themselves, it is also influenced by the vulnerability and capacity or resilience of the affected areas [6, 7, 8, 9, 10]. There are a lot of laws and regulations that explain that areas in Indonesia are disaster-prone areas, so that in any regional spatial planning preparation it must be based on disaster mitigation efforts [11, 12, 13, 14].

This condition emphasizes that spatial planning in various places must consider the aspects of the region's vulnerability to potential disasters [15, 16, 17, 18, 19, 20]. It is necessary to realize together, that the element of disaster risk is still accommodated in passing and this is emphasized at the spatial planning implementation stage [21, 22, 23, 24]. Therefore, every land change that is carried out must strengthen every spatial planning management process (arrangement-guidance-implementation-supervision) to always be directed towards disaster risk reduction. The area in Lampung Province which is currently implementing spatial planning because it has the potential for frequent disasters is Tanggamus Regency. Tanggamus District in Lampung Province has many areas that have the potential for disasters, both geological and climatic phenomena. One of the disasters that often occurs in Tanggamus Regency is landslides. Landslides or often called soil movements are a geological event that occurs due to mass movement of rocks or soil [25, 26].

The causes of landslides are caused by several things, including erosion, high rainfall, earthquakes and illegal logging [27, 28, 29, 30, 31]. The impact of the landslide disaster resulted in enormous losses, both material and non-material. Based on data from the Tanggamus Regency Spatial Plan 2011-2031 which is contained in Regional Regulation Number 16 of 2011 stipulates that landslide areas are located in Wonosobo District, Kota Agung, Kota Agung Barat, Ulu Belu, Cukuh Balak, Kelumbayan Barat, Kelumbayan, Semaka, Pematangsawa, Limau, Semoung State Airport, Kota Agung Timur and Gisting [32]. The district in Tanggamus Regency that has the highest intensity of landslides is Kelumbayan District with the number of incidents of 3 times in a period of 5 years based on data from BPBD in 2018 which resulted in a lot of losses, both materially and non materially. From the landslide incident, there are social cases, one of which is that there are still many residents' houses that are uninhabitable houses.

Based on the results of the 2018 pra survey research, it is known that most of the Kelumbayan District has a uninhabitable houses. Data from the Resettlement Service of Tanggamus Regency states that there are 192 uninhabitable houses in Kelumbayan District. A house that is uninhabitable houses for dwelling or place to live because it does not meet the requirements for housing both technically and non technically [33, 34, 35, 36, 37].

Uninhabitable houses that is technically means that the house is not suitable for living due to physical factors of the building, such as the area of the building, the type of wall used, the toilet facilities and so on [38, 39, 40, 41]. Uninhabitable houses in non-technical terms, meaning that it is related to environmental problems. For example, a house that is built in an area close to a garbage dump will have fatal consequences for the health of the occupants of the house [42, 43, 44]. Residents who have uninhabitable houses in Kelumbayan District have special reasons for staying in areas that are prone to landslides. One of the reasons is the unfavorable socio-economic conditions, socio-economic conditions such as; unemployment, low education, and low income of the people, so that they look for a place to live or build with minimum capacity so that houses are uninhabitable houses [45]. Uninhabitable houses develops in areas where the supervision is poor or not well maintained. Apart from that, another reason is that they are reluctant to leave their homes because their livelihood is gardening and their cultivated land is in an area prone to landslides [46, 47].

The people in Kelumbayan District, Tanggamus Regency, still have many houses that are not suitable for uninhabitable houses, both from a technical and non-technical perspective. On the basis of this, the researcher is interested in taking the title of research on the Study of Social Geography of the Distribution of uninhabitable houses in landslide Areas, Kelumbayan District, Tanggamus Regency.

II. RESEARCH METHOD

The method used in this research is descriptive method. According to [48, 49, 50]. Descriptive method can be interpreted as a procedure for solving problems that are investigated by describing/describing the condition of the subject/object of research (a person, institution, society, etc.) at the present time based on visible facts or as they are. Based on this opinion, this study uses a descriptive method because it aims to assess the social geography of the distribution of uninhabitable houses in landslide prone areas in Kelumbayan District. in general, social geography describes the interactions between humans and their social environment, namely other humans and the human groups around them [51, 52, 53, 54]. That is, humans in meeting their daily needs, both primary and secondary needs, will definitely take advantage of the surrounding environment [55, 56]. Related in this study, it explains the social distribution of uninhabitable houses which is presented in the thematic spatial data of the criteria for uninhabitable houses which is also used as a variable in the study.

The sample in this study amounted to 29 scattered in 5 Pekon/village, with the number of each Pekon. The samples taken differ depending on the number of uninhabitable houses and the size of the area. The distribution of the samples used in the study can be seen in table 1 and map.

Table. 1. Number of Uninhabitable House Samples in Kelumbayan District, Tanggamus Regency in 2020

No.	Pekon/Village	Sample
1	Kiluan Negeri	10
2	Napal	2
3	Paku	12

4	Susuk	2
5	Umbar	3
Total		29

Source: Results of spatial data processing, year 2020.

Based on table 1 and figure 1, can be seen that the number of uninhabitable houses is mostly in Pekon Paku and Kiluan Negeri, while the least is found in Pekon Umbar, Napal, and Susuk. On the map/spatial data, you can see the distribution of each sample of respondents.

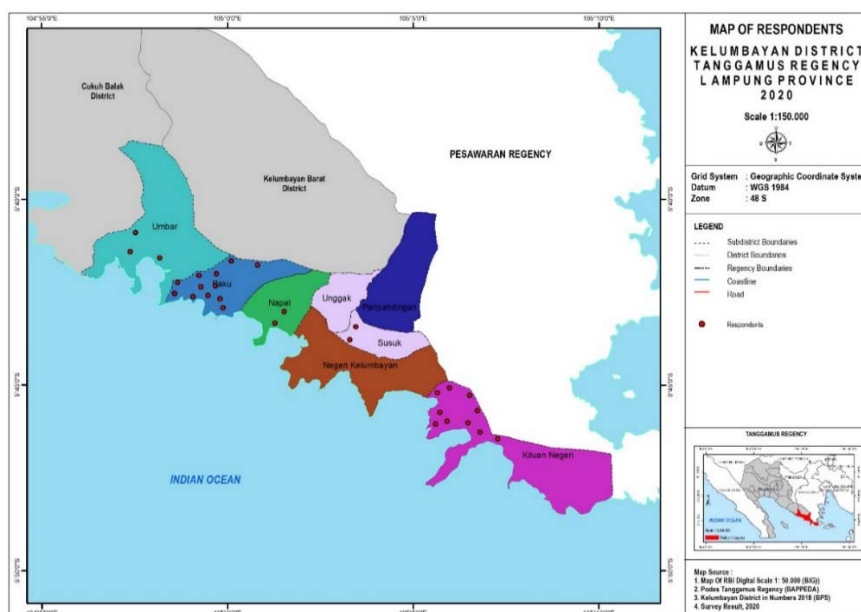


Figure 1. Distribution of respondents are uninhabitable house

While variable is everything that will be the object of research. Often the research variables are also factors that play a role in researching the events or symptoms to be studied [57, 58, 59]. The variables in this study were the characteristics of the uninhabitable house and the characteristics of the social condition of the uninhabitable house in landslide prone areas in Kelumbayan District. Indicators of uninhabited houses include: 1) floor area of the building; 2) wall type; 3) defecation/toilet facilities; 4) source of lighting; 5) water sources; and social indicators include [60].

Indicators of Uninhabited Houses, among others:

(1) Building Floor Area

The floor area of the building in the study is the floor area owned by residents of uninhabitable houses in Kelumbayan District, Tanggamus Regency. The building floor area classification is as follows:

- a. It is said to be narrow if the floor area of the residential building is $< 8 \text{ m}^2/\text{person}$.
- b. It is said to be wide if the floor area of the residential building is $> 8 \text{ m}^2/\text{person}$.

(2) Wall type

The type of building wall in this study is the type of wall that is owned by residents of uninhabitable houses in Kelumbayan District, Tanggamus Regency. The classification of building walls is categorized as follows:

- c. Wall
- d. Wood
- e. Bamboo/thatch

(3) Availability of defecation facilities/Toilet

The availability of sanitation and disposal facilities (toilet) in this study is the availability of components owned by residents of uninhabitable houses in Kelumbayan District, Tanggamus Regency in terms of household defecation facilities.

- a. Available if you have a household defecation facility.
- b. Not available if you do not have a household defecation facility.

(4) Source of energy

The source of energy in this study is the source of lighting used by residents of uninhabitable houses in Kelumbayan District, Tanggamus Regency. The sources of energy are categorized as follows:

- a. PLN electricity.
- b. Non-PLN electricity (batteries, generators, and solar power plants or those not managed by PLN).
- c. Petromak.
- d. Pelita (sentir, torch, carbide lamp, candle, castor bean, and candlenut).

(5) Source of Drinking Water

The source of drinking water in this research is a source of drinking water that is suitable for use by residents of uninhabitable houses in Kelumbayan District, Tanggamus Regency. The categories of drinking water sources are classified as follows:

- a. It is said to be feasible if the source of drinking water is from wells or springs that are protected from rivers and rainwater.
 - b. It is said that it is not feasible if the source of drinking water from wells or springs is not protected from rivers and rainwater.
- There are three data collection techniques used in the study, namely:

1. Observation Technique

Observation is a method and technique of collecting data by systematically observing and recording symptoms or phenomena that exist in the object of research [61]. Therefore, to obtain actual and direct geographic data, we must conduct field observations. In this study, the purpose of observation was to see the condition of the problems in the field to be studied, both physically and an overview of the problems in the field. The observation technique in this study was to determine the location and distribution of uninhabitable house owners in Kelumbayan District.

2. Questionnaire technique

According to [62] a questionnaire is a data collection technique that is carried out by giving a set of written statements to respondents to answer. Research questionnaire questionnaire in the form of written questions for which alternative answers have been prepared. With this structured questionnaire questionnaire, each respondent is given the same questions and the data collection records them. The questionnaire technique in this study was conducted to obtain primary data. Primary data in this study are the floor area of the building, the type of wall, toilet facilities, lighting sources, water sources, education level, and the number of families who own uninhabitable houses in Kelumbayan District.

3. Documentation Techniques

According to [63] documentation is looking for data about things or variables in the form of notes, transcripts, books, newspapers, magazines, meeting minutes, agendas and so on. In this study, documentation techniques were used to obtain secondary data. Secondary data are in the form of general conditions of the research area, monographs of Kelumbayan District and data from agencies related to research.

Furthermore, the data collected were analyzed using the overlay analysis technique of research social variables on landslide areas with a spatial or spatial and descriptive approach. Data analysis techniques according to [64, 65, 66, 67] data analysis techniques are an effort to systematically find and organize notes on observations, interviews, and others to improve researchers' understanding of the cases being studied and present them as findings for others. Data analysis is the process of searching for and compiling data obtained from interviews, field notes, and other materials systematically so that it is easy to understand and the findings can be shared with other souls. The data analysis technique in this study used a spatial or spatial approach. In a descriptive form, according to [68, 69, 70] spatial analysis is an analysis by linking location, distribution (distribution), diffusion, and spatial interactions. The first step in this study using primary data that has been processed from a questionnaire that has been collected from respondents. Then the results of the questionnaire are calculated and grouped according to variables and depicted using a map and the map results will be interpreted in a descriptive.

III. RESULT AND DISCUSSION

Landslides or often referred to as soil movements are a geological event that occurs due to the movement of masses of rocks or soil with various types and types such as falling rocks or large lumps of land [71, 72]. In general, the occurrence of landslides is caused by two factors, namely driving factors and triggering factors. Driving factors are factors that influence the condition of the material itself, while trigger factors are factors that cause the movement of the material.

Based on the results of [73], it is known that the landslide-prone map in Kelumbayan District in 2020 obtained 2 vulnerabilities, namely the non prone hazard class and the vulnerable hazard class. The parameters used for the process of determining landslide vulnerability in Kelumbayan District use data on rainfall, slope, land use and soil type to see more details about the landslide hazard class can be seen in the following table and map.

Table 2. Categories and area of landslide prone in Kelumbayan District.

No.	Criteria	Areas (km ²)	%
1	Prone	48,9	40,38
2	Not Prone	72,2	59,62
Total		121,1	100

Source: Results of spatial data processing, year 2020.

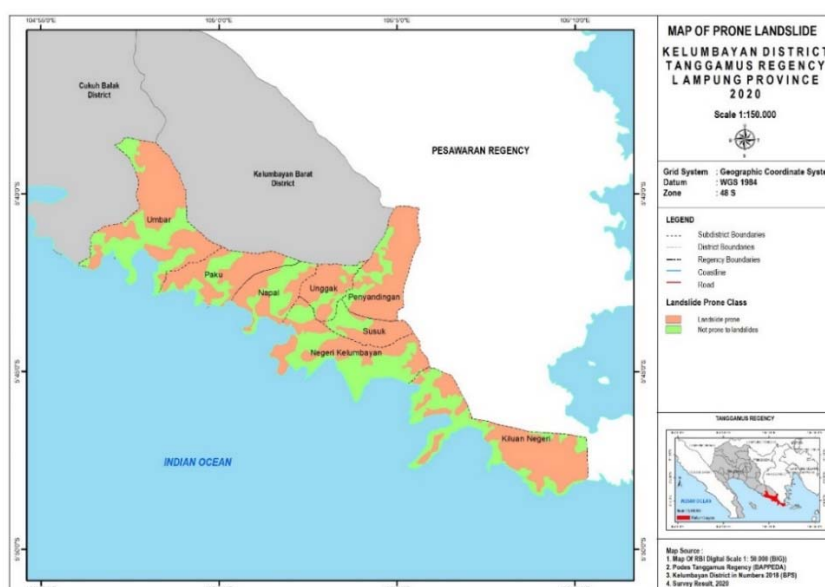


Figure 2. Distribution of Landslide Areas in Kelumbayan District

Based on Table 2 and Figure 2, it can be seen that Kelumbayan District is dominated by areas with a landslide-prone level, namely an area of 72.2 km² or about 59.62% of the entire existing area. Meanwhile, the landslide hazard class that is not prone is in an area of 48.9 km² or around 40.38%. Description of the results of this study aims to explain the study of the social geography of uninhabitable houses in landslide-prone areas, Kelumbayan District, Tanggamus Regency. This study includes: building floor area, type of walls, toilet or sanitation facilities, sources of electrical energy, and water sources, while the level of education and number of family members owned by residents who have the criteria for uninhabitable houses in Kelumbayan District, Tanggamus Regency are factors supporters to describe these variables.

1) Building floor area

Building floor area is the area of a place or area that will be used in managing a material or in working on a production process [74, 75]. The distribution of floor area in each Pekon/Village can be seen in table 3 and figure 3.

Table 3. Frequency Data of Population Building Floor Areas in Kelumbayan District in 2020.

Pekon/Village	Floor Area		Landslide Area	
	< 8 m ² /responden	> 8 m ² / responden	Prone	Not Prone
Kiluan Negeri	9	1	1	9
Napal	2	0	1	1
Paku	12	0	6	6
Susuk	2	0	0	2
Umbar	3	0	2	1
Total	28	1	10	19

Source: Results of spatial data processing, year 2020.

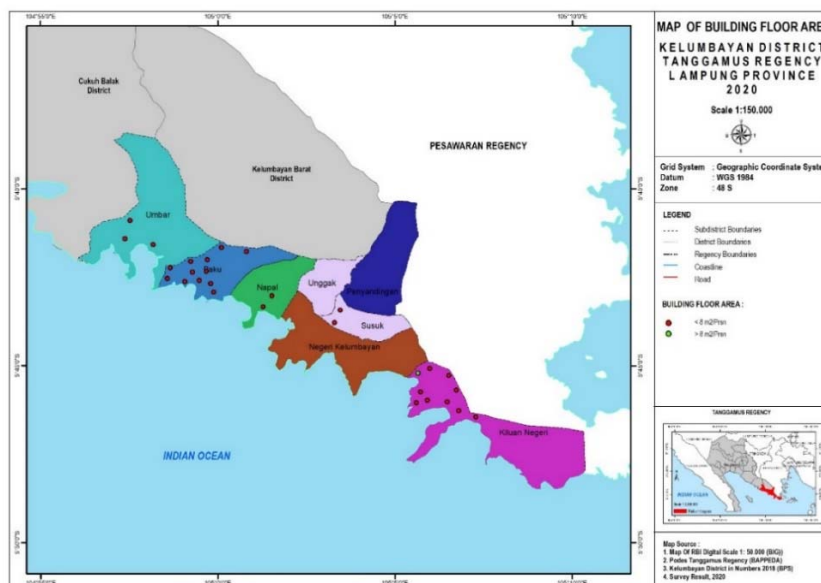


Figure 3. Distribution of Respondents Building Floor Area

Table 3 and figure 3, it can be seen that 99% of the floor area of the building in an uninhabitable house has a size of less than 8 m², while more than 8 m² is only 1. If you look at the uninhabitable houses located in prone and non prone areas, the number is almost the same. Field research that has been carried out shows that almost all residents in Kelumbayan District have a building floor area of less than 8 m²/respondent. This statement can be proven that as many as 28 respondents have a building floor area of less than 8 m²/respondent. The results of the survey that have been carried out show that the total area of the building floors of the residents only has an area of approximately 25-30 m². From the floor area, each house consists of 3-6 people who live in the house.

According to Article 22 paragraph (3) of Law Number 1 Year 2011 which reads, "The floor area of a single house and a row house has a size of at least 36 (thirty six) square meters". Based on the provisions of the law, of course, these houses are far from the word suitable for habitation, due to the limited activity space for these family members. The width of a person's house floor is considered as an illustration to assess the social ability of the community [76, 77]. In addition, floor area can determine the health level of the occupants, because of the narrow floor area. can inhibit the respiratory system for all residents of the house and can accelerate disease transmission. [78] in her research showed that there is a relationship between environmental conditions and public health, especially in the area of ventilation, humidity, and occupant density. conducted by [79, 80].

Qualities of a residential house is seen from the per capita floor area and the type of floor. Based on the results of the survey conducted, the type of floor owned by residents with the category of unfit for habitation in Kelumbayan District, is still in the form of rough cement floors even in the form of dirt floors. It can be concluded that the quality of the social conditions owned by the

population is far from good. Therefore, it is necessary to expand the floor of the house so that the space for each family member can be free.

2) Wall type of Building

Wall is a solid structure that borders and sometimes protects an area. Generally, walls limit a building and support other structures, limit the space in the building into rooms, or protect or limit a space in the open. Based on the results of the study, it is known that the types of building walls of the respondents who have the category of uninhabitable houses are of three types, namely the types of walls, wood and bamboo. Table 4 and Figure 4 below are presented regarding the data and distribution of the types of walls of residents' buildings that have the criteria for uninhabitable houses in Kelumbayan District.

Table 4: Frequency Data of Residential Building Wall Types in Kelumbayan District in 2020

Pekon/Village	Wall Type			Landslide Area	
	Wall	Wood	Bamboo	Prone	Not Prone
Kiluan Negeri	1	6	3		
Napal	0	2	0	1	1
Paku	1	9	2	7	5
Susuk	0	1	1	0	2
Umbar	1	1	1	2	1
Total	3	19	7	14	15

Source: Results of spatial data processing, year 2020.

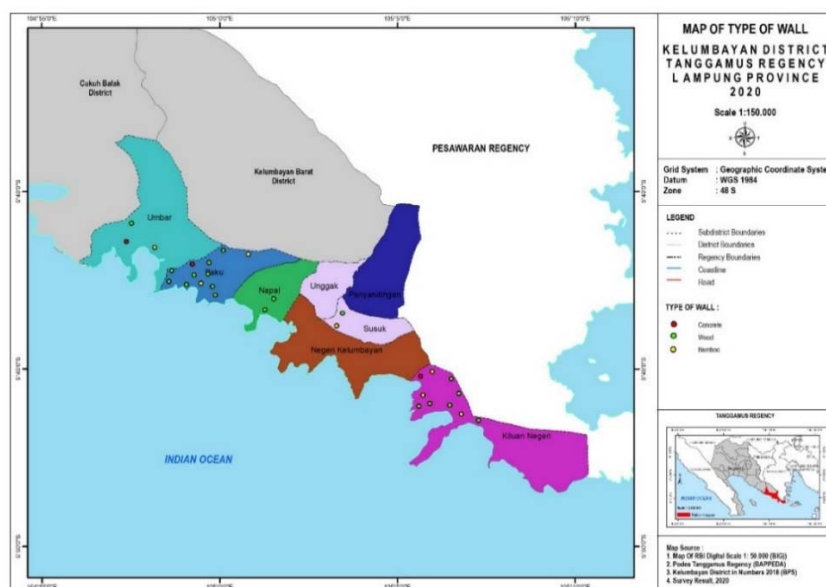


Figure 4. Distribution of Respondent Building Wall Types

Based on Table 4 and Figure 4, it is known that the majority of residents who have the category of uninhabitable houses in Kelumbayan District have wooden walls with a total of 19 people or 65.52%. Based on the results of the field survey, it was found that this type of wood is made of teak, acacia and johar wood. The types of bamboo or thatch walls of respondents who had uninhabitable houses were only 7 people or 24.14%. While 3 respondents have a type of wall in the form of a wall. At the time of the field survey, the type of wall in the house was uninhabitable houses, only a rough wall, in the sense that the wall has not been cemented or polished using cement, the wall is still made of bricks.

The results of the research and surveys that have been carried out, it can be seen that the types of walls of people's houses that have the criteria for uninhabitable houses are mostly made of wood with a total of 19 houses and bamboo/thatch with a total of 7 houses. And the type of wall is only a small part, namely only a number of 3 houses with concrete wall types. There are many types

of wooden walls in Kelumbayan District, especially uninhabitable houses. The types of wood used according to the owner of the house are teak, acacia and johar trees

When the research was carried out, the researcher saw that many residents had types of house walls in the form of wood and thatch, for this, of course, it could be said that it was far from the normal conditions of a house that was uninhabitable houses. It is said that the house is uninhabitable houses because the main material of the walls is made of wood which is susceptible to weathering if it is continuously exposed to heat and rain. This weathering is often referred to as chemical weathering. In accordance with the opinion of [81, 82] which explains that the process of damage to wooden buildings or other materials is divided into 5 stages, namely the mechanical damage process, the physical damage process, the chemical damage process, the biotic damage process, and damage caused by human factors (vandalism) [83, 84]. The chemical weathering process is water, either in the form of capillary water or rainwater. An example of this symptom is wood rot that is exposed to rainwater due to a leaky tile. Therefore the need for regular wall maintenance for walls of wood and thatch types.

3) Availability of defecation facilities/Toilet

Defecation facility (toilet) is a building used to dispose of and collect human waste which is commonly called a toilet/WC, so that the waste is stored in a certain place and does not become a cause or spreader of disease and pollute the residential environment [85, 86]. The following shows the data on the availability of defecation facilities (toilets) for residents who have criteria for uninhabitable houses in Kelumbayan District.

Table 5. Frequency Data of Toilets in Kelumbayan District in 2020.

Pekon/Village	Toilet Facilities		Landslide Area	
	Available	Not Available	Prone	Not Prone
Kiluan Negeri	8	2	3	7
Napal	2	0	1	1
Paku	10	2	7	5
Susuk	2	0	0	2
Umbar	2	1	2	1
Total	24	5	13	16

Source: Results of spatial data processing, year 2020.

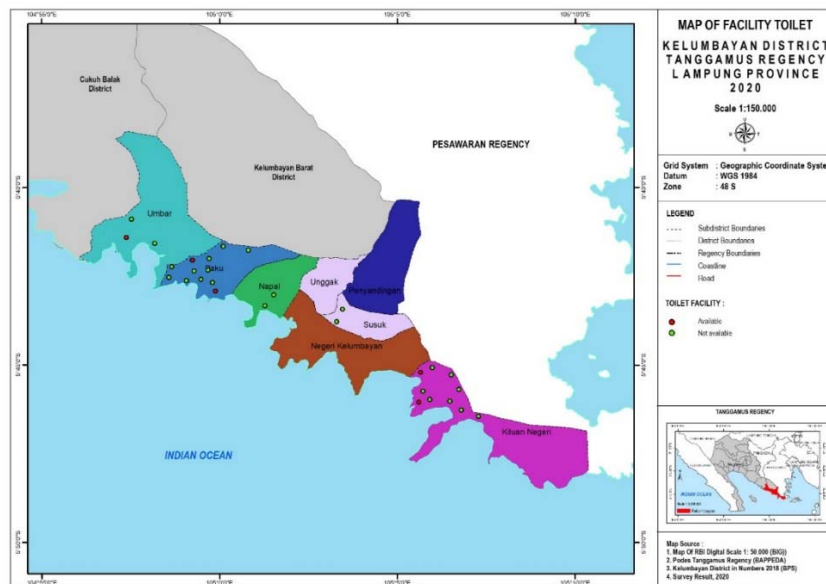


Figure 5. Distribution of Respondent Toilet Facilities

Based on Table 5 and Figure 5, it is known that the majority of residents who have the category of uninhabitable houses do not have toilets or defecation facilities. This is evidenced by the fact that 24 people or 82.76% do not have defecation facilities. Meanwhile, only 5 respondents have defecation facilities (toilets). The majority of local residents use the river as a defecation facility. This is a behavior known as open defecation.

Open defecation (BABS) is an example of unhealthy behavior [87, 88]. It is said that the behavior is unhealthy because human feces are solid and dirty waste and the smell is also a medium for disease transmission for the community. Human feces contains pathogenic organisms that are carried by water, food, flies into diseases such as salmonella, vibriocolera, dysentery, diarrhea and others. Feces containing infectious agents enter the digestive tract. The direct effect can reduce the incidence of diseases transmitted due to contamination with feces such as cholera, dysentery, typhus, and so on. The indirect effect of fecal disposal is related to components of environmental sanitation such as decreasing environmental quality. This will affect social development in society by reducing human fecal contamination in people's drinking water sources.

Based on table and map data, we can see the large number of uninhabitable houses that have a toilet availability category, there are only 4 houses located in landslide prone areas and 1 house located in areas not prone to landslides. Apart from that the number of houses with available toilets, there are 14 houses located in landslide prone areas and 10 houses located in areas not prone to landslides in Kelumbayan District. This result if we observe that the larger number of houses located in landslide prone areas with the availability category toilet. The defecation facility is an important measure for human health. When the field research was carried out, it was found that the majority of people who have the criteria for uninhabitable houses do not have a defecation facility. This is reinforced by the fact that 24 respondents did not have defecation facilities. Meanwhile, only 5 respondents had defecation facilities. Most of the local residents use the river as a defecation facility. This indicates that they lack awareness of their health and still practice open defecation.

Referring to the Regulation of the Minister of Health concerning Community-Based Total Sanitation article 1 paragraph 4 "Stop Open Defecation is a condition when every individual in a community no longer practices open defecation which has the potential to spread disease". From the results of this study, it was found that the population still lacks awareness of not defecating openly which will have the potential to spread various kinds of diseases, namely cholera, dysentery, typhus, and so on. This is in accordance with the results of research [89, 90] that diseases caused by human waste can be classified into:

- a. Enteric or digestive tract disease and toxic contamination.
- b. Viral infectious diseases such as infectious hepatitis
- c. Worm infections such as schistosomiasis, ascariasis, ankylostomiasis

At the time of the field research, every house for which there was no defecation facility had various reasons. Their main reason is because they do not have sufficient costs to make the facility. Thus they take advantage of the existing facilities, namely defecating in the river. By defecating in the river, the residents do not have a headache and bother to pay for building defecation facilities. In conditions like this, it can be seen how the behavior of the people who are less aware of healthy living habits, with no defecation facilities, it is far from the word that the house conditions are uninhabitable houses.

4) Source of energy

Source of energy in this study is the source of lighting used by residents of uninhabitable houses in Kelumbayan District, Tanggamus Regency. The following shows the data regarding the sources of lighting used by residents who have the criteria for uninhabitable houses in Kelumbayan District.

Table 6. Data on the Frequency Sources of Energy in Kelumbayan District in 2020

Pekon/Village	Source of Energy		Landslide Area	
	Electric	Petromak	Prone	Not Prone
Kiluan Negeri	10	0	5	5
Napal	2	0	1	1
Paku	12	0	9	3
Susuk	2	0	1	1
Umbar	2	1	2	1

Total	28	1	18	11
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Source: Results of spatial data processing, year 2020.

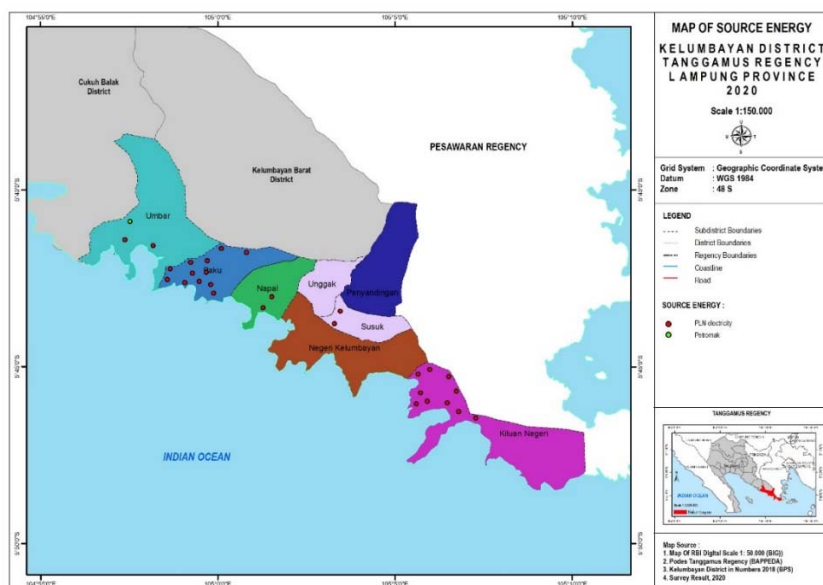


Figure 6. Distribution of Respondents Sources of Energy

Based on Table 6 and Figure 6, it is known that the majority of residents who have the category of uninhabitable houses have used the PLN electric lighting source with a total of 28 people or 96.55%. However, there is 1 respondent who still uses a light source in the form of a petromak lamp. Based on the map data of the distribution of respondents based on electricity sources, there are 18 houses located in landslide prone areas with sources of energy in the form of PLN electricity and 10 houses located in areas not prone to landslides with a power source. The main source of household electricity is categorized as meeting one of the indicators of making a uninhabitable house if the main source of household energy is non-electricity [91, 92, 93]. Sources of energy in households are also an aspect of housing that needs attention, because with sufficient electricity, humans can live healthily and comfortably in activities [94, 95, 96, 97].

Electricity is one of the factors to get a safe, comfortable environment and can help human productivity. Good electricity allows people to see the objects they are working on clearly, quickly and without unnecessary efforts. The source of electricity owned by residents of the house is not suitable for habitation in Kelumbayan District, almost the entire population has used electricity from PLN with a total of 28 respondents. However, there is 1 respondent who until now still uses a source of electricity in the form of a petromak lamp. The only respondent who does not have electricity from PLN is due to the inability to pay his monthly electricity bills. On average, residents who have uninhabitable house conditions are middle to lower economic class [98, 99].

5) Source of Water

The following shows the data on water sources for residents who have criteria uninhabitable house in Kelumbayan District.

Table 6. Data on Frequency of Population Source of Water in Kelumbayan District in 2020

Pekon/Village	Source of Water (Sumur)	Landslide Area	
		Prone	Not Prone
Kiluan Negeri	10	6	4
Napal	2	1	1
Paku	12	9	3
Susuk	2	1	1
Umbar	3	2	1
Total	29	19	10

Source: Results of spatial data processing, year 2020.

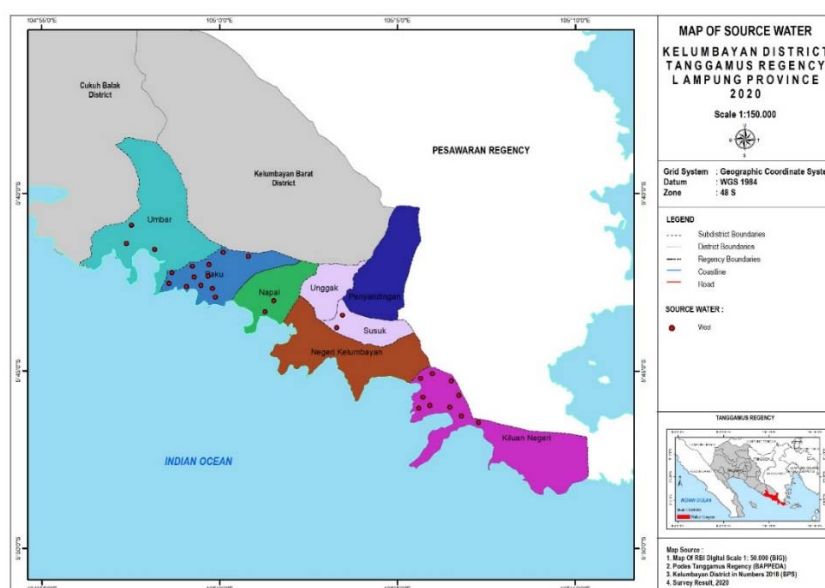


Figure 6. Distribution of Respondents' Sources of Water

Based on Table 6 and Figure 6, it can be seen that all people in Kelumbayan District who have the category of uninhabitable house use clean water sources from wells or dug wells [100]. This can be seen by the number of frequencies of 29 respondents or 100% who use clean water sources from well water. However, based on the results of the field survey, it was found that the wells were not protected from rainwater. The wells are located behind the house and without a protective roof over them. Therefore, these wells are said to be unfit for the requirements as a source of drinking water because drinking water sources from wells or springs are not protected from rivers and rainwater [101].

Based on the table data, it is also known that the number of houses that are uninhabitable house using water sources with well water is dominated by locations in areas prone to landslides. This is evidenced by the fact that 19 houses are located in landslide prone areas and only 10 houses are not prone to landslides. In map 6 above, it can be seen that water has become a very important life necessity for humans, especially for consumption needs such as drinking and cooking [102, 103]. A person in one day needs an average of 1.5 liters of drinking water or the equivalent of eight glasses (BPS Statistics for Housing Indonesia, 22). This means that if there are five people in a household, in one day the household needs at least 7.5 liters of water for drinking purposes only. Based on observations during field research, it was found that the water sources used by the entire population were dug wells that were not completely protected from rain water because the wells were located outside the house. The water from the dug well is used by the family to meet their daily water needs such as washing, cooking and bathing.

At the time of the research, most of these wells were located behind the houses which had no cover. This condition certainly does not meet clean water standards. Unprotected dug wells certainly have their own impact, namely having a higher risk as a medium for transmitting pathogens into the human body which causes various diseases related to diarrhea. This is in line with the opinion according to [104] which states that "environmental factors including housing density, availability of clean water facilities (CWF), utilization of CWF, and quality of clean water are risk factors for diarrhea".

Other than that, criteria set by BAPPENAS and BPS in the study, education, number of dependents, and occupation also affect the existence of an uninhabitable house. Education plays an important role in human life, because education can be useful for a lifetime. The level of education of a person is closely related to the social conditions in society. Someone who has obtained a position is expected to be better in personality, abilities and skills so that they can get better at socializing and adapting in the midst of community life, thus making it easier for someone to meet their needs [105, 106]. From the research that has been done, it can be seen that the number of family members in the uninhabitable house, only able to afford elementary and junior high school

education. This shows that the role of parents in the importance of children's education is still low. The last level of education of parents only tends to be lower, which is only able to reach the conscious school level.

The low level of parental education can support the insights and knowledge that parents have about the importance of education which tends to be low, so that the desire to continue school to continue school up to the upper level also tends to be low. However, the higher the level of education the parents have, the higher the parents' insight into the importance of education for their children and the ability of parents to direct their children to continue their education to tertiary education [107, 108, 109]. This is in accordance with the opinion of Ki Hadjar Dewantara who stated that "regardless of the state of education, parents want their children to have higher education than themselves".

The results of research in the field show that the majority of family members who have the criteria for uninhabitable houses have the majority of family members [110, 111, 112] as many as 4 people with 10 respondents having that number of members. The number of family members is closely related to the socio-economic conditions in the community. Why is that, because if the number of members of a family is large, then it can be ascertained that the expenses incurred will increase to meet their daily needs.

The results of research from other samples, there are also a total of 6 family members who live in the house with the criteria the uninhabitable houses. Respondents who occupy the house, have a building floor area of 30 m². While to say uninhabitable houses, the house must be 48 m² in area. This of course does not meet the standard requirements for building floor area to be habitable. When viewed from the other side, the family which has 4 family members consists mostly of father, mother and 2 children. This proves that the family planning program launched by the government is running well. According to one respondent, he explained that he did not want to add any more family members, due to the cramped conditions of his house and inadequate financial conditions. This condition can also be seen from the location of the house that is uninhabitable houses for each respondent who is located in an area prone to disasters, so that when viewed from a study of social geography, this condition will be increasingly complex and clear that the physical and social conditions of an area also affect the existence of the uninhabitable houses this.

Social geography is a science that explains the interactions between humans and their social environment, namely other humans and groups of people around them. That is, humans in meeting their daily needs, both primary and secondary needs, will definitely take advantage of the surrounding environment. There are 3 concepts in social geography, namely space, process, and pattern. Geographically, space is the entire surface of the earth which is the layer of the biosphere, a place to live for living things, both humans, animals, plants and other organisms. In social geography, space has a deep meaning, namely:

1. As a place or container of objects or behavior.
2. As a place that can be used to carry out business activities
3. Something that can be arranged and utilized by and for humans.

Process is human action in adapting and making use of the environment. The process is divided into two, namely: macro and micro. A micro social process that emphasizes the activities of individuals and community groups, for example, moving someone's house from one place to another. Meanwhile, the macro process is a process that emphasizes society in general, for example the occurrence of migration, transmigration, urbanization, waves of refugees and so on.

Pattern is a process that occurs repeatedly, in this case the pattern of life and livelihood that is different from one place to another, which reflects the differences in the nature of the area and its inhabitants so that a different social landscape will be realized. Social landscape is a group of people or groups of people who live in a certain area or place and have the same idea of their environment.

IV. CONCLUSION

Based on the results of the research that has been done, it can be concluded that all houses are uninhabitable house that meets the requirements for building safety, and the minimum adequacy of building area, as well as the health of its occupants, especially in the research area, if it is viewed from the aspect of social geography in disaster-prone areas, it is included in the criteria set by the government, both physically and socially.

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