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Analysis of House Conditions and Optimization of Aid Funds Based on Criteria for Unlivable Houses in Lubuklinggau Timur II District, Lubuklinggau City

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ABSTRACT

This research addresses the problem of public knowledge of uninhabitable houses and the difficulty in identifying houses that do not meet community housing standards, to provide criteria for uninhabitable houses as well as optimize the rehabilitation assistance budget carried out by the Government. This research uses a quantitative descriptive method by collecting data through questionnaires, field observations, and documentation on 69 sample houses. The results of the analysis categorize the level of damage to the house into three categories, namely heavy, moderate, and light damage. From the research results of 69 sample houses, it was found that only 59 houses met the requirements for the uninhabitable house rehabilitation assistance program. In optimizing the allocation of aid funds, the level of damage to the house must be taken into account. With a more objective approach, rehabilitation housing programs can be more effective and provide greater benefits to people in need.

Keywords: *Identification Of Housing Standards; Criteria For Uninhabitable House; Optimization Of Rehabilitation Budget; Damage Categories.*

INTRODUCTION

Home, as a basic human need, plays an important role in the growth and well-being of life. However, the reality in many societies is often far from ideal. Many families struggle to have a comfortable home due to financial limitations. Furthermore, the problem of uninhabitable houses is often caused by residents' non-compliance or ignorance of applicable development standards, as well as limitations in house maintenance. According to [6], these factors contribute to the increase in the number of houses that do not meet occupancy requirements. House suitability standards, as stipulated in the Regulation of the Minister of Public Works for Public Housing of the Republic of Indonesia No: 29/PRT/M/2018, include aspects of structural durability, adequate sanitation, access to clean water, and minimum residential area per capita. Homes that fail to meet any of these standards are considered uninhabitable. In urban areas, this problem is often exacerbated by the location of houses in slum areas or areas that do not comply with spatial planning, increasing the risk for residents [3].

To overcome this problem, [7] suggest an approach that involves direct surveys of the locations of uninhabitable houses. This approach allows for effective and accurate data collection, essential in decision-making and distribution of aid to those who are entitled to it. However, often uninhabitable houses are only identified visually by the community, without

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considering appropriate technical criteria, causing inaccuracies in the distribution of aid [8]. In addition, [9] and [10] revealed that officers often face difficulties in identifying houses that meet these criteria. This often results in subjective and inaccurate assessments, raising concerns about the inaccuracy of program targets and decreasing public confidence in the uninhabitable housing assistance program.

According to [5] the requirements for a livable house include:

a. Security elements.
   A house as a place to live can provide a sense of security for its residents and the surrounding environment if its structure is adapted to the characteristics of the land where the house stands. Thus, the house structure must be able to handle the fixed loads and dynamic loads contained within it, including loads caused by natural factors such as earthquakes, wind, and floods.
b. Health elements.
   A house that meets comfort and health standards not only offers an adequate level of security for its occupants, but must also comply with requirements such as adequate natural ventilation and lighting, clean sanitation, and the use of building materials that are not only environmentally friendly but also do not hurt health. residents.
c. Elements of comfort.
   A house provides prosperity for its residents, including comfort in terms of circulation or mobility related to the layout of the rooms. Temperature comfort ensures protection from the heat of the day and the cold of the night. Visual comfort gives residents the freedom to carry out personal activities without having to worry about being seen from outside.

In addition, according to the National Water and Sanitation Information Services [12] and [13] implement a house that has standards in terms of habitable house requirements by safety standards, sufficient space and health for the occupants of the house. The criteria for a habitable house are as follows:

a. Building resilience.
   Compliance with the reliability criteria for basic parts such as foundations, sloofs, columns, ring beams, and roof frames. Dimensions, material mixtures, and relationships between structural components are aspects of the quality of building structural components. while non-structural building components include floors, walls, door and window frames, and roof coverings.
b. Sufficient living space.
   The minimum building area must be sufficient to provide enough space for each occupant to move around comfortably. With a minimum room height of 2.8 meters, the minimum adequate area per person is calculated to be 7.2m2. The size of the house is determined by the available land area and the ability to be independent.
c. Adequate sanitation facilities.
   Buildings used for bathing, washing, and latrines as well as septic tanks, rubbish bins, water management infrastructure, and appropriate handling of liquid waste are all included in proper sanitation. Sanitation can be provided for all family members in the house, yard, or community area at an appropriate distance according to the regulations.
d. Availability of drinking water that meets requirements.
   Availability of clean drinking water also requires easy access both in terms of time and distance to clean drinking water.

A livable house not only meets these four indications but also meets lighting and ventilation standards for health. Window openings must be at least 5% of the floor surface of the room

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so that air can circulate properly. Lighting equipment covers at least 10% of the building floor area taking into account sunlight.

The area of Lubuklinggau City is 401.50 KM2 or 40,140 Ha. Lubuklinggau City, which is located in the western part of South Sumatra province, is at $102^{0}40^{'}00^{"}$ - $103^{0}0^{'}00^{"}$ East longitude (BT) and $3^{0}4^{'}10^{"}$ - $3^{0}22^{'}30^{"}$ South latitude (LS). With borders as follows:

a. West of Bengkulu Province.
b. On the east side it borders the Musi Rawas Regency area.
c. On the south side it borders the Musi Rawas Regency area.
d. Meanwhile, on the north side it borders the Musi Rawas Regency area.

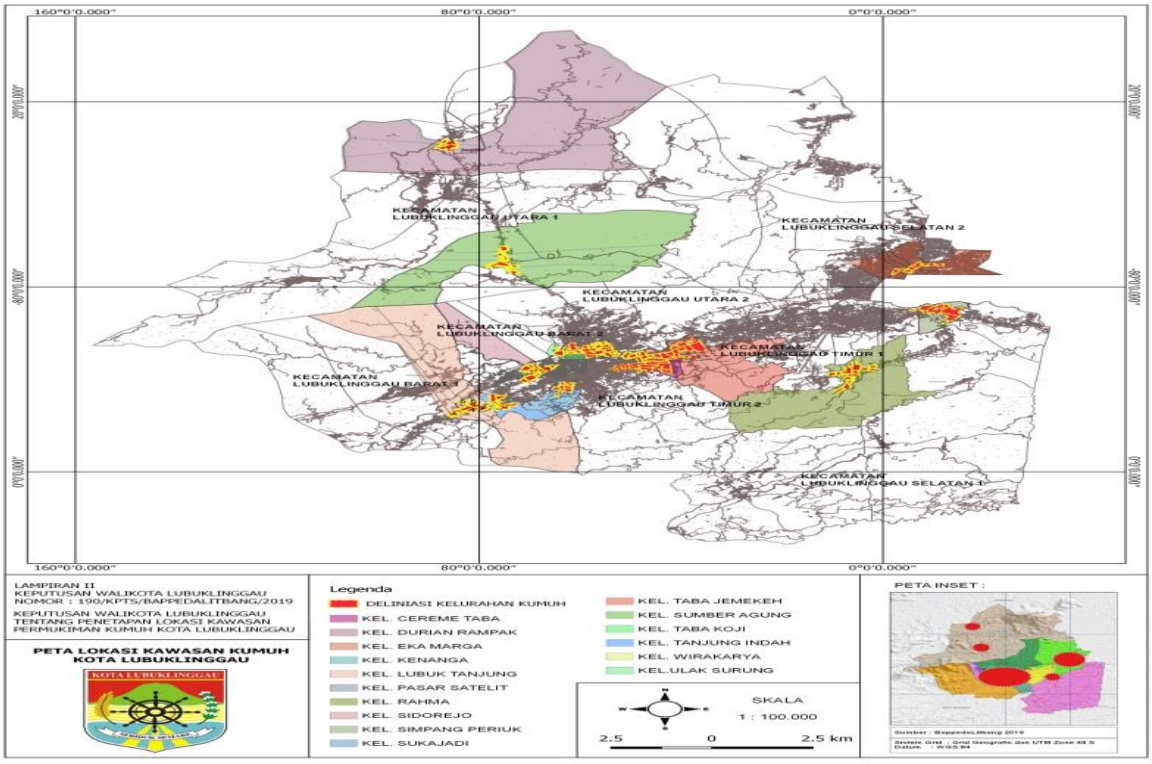

Figure 1. Location maps of residential areas are not suitable.

It is stated in Regional Regulation Number 1 of 2012 it is stated in the third part of Article 27 paragraph (1) that cultivation areas for residential areas are for high-density housing with an area of approximately 1,305 Ha, medium density with an area of approximately 2,275 Ha while for low density with area 1,669 Ha. According to [14]in dealing with slum areas in cities based on location, it is important to consider the characteristics of the surrounding environment. This will determine the appropriate plan, strategy, and form of treatment. Several factors need to be considered in handling it, namely land status, development and dynamics of the area, and community participation. To determine the slum area of Lubuklinggau City based on Decree Number: 190/KPTS/Bapedalitbang/2019 concerning Determining the Location of Unsuitable Residential Areas. The following is a map and table of locations of inappropriate residential areas in Lubuklinggau City

METHOD

This research implements a quantitative descriptive approach to study uninhabitable houses

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in the slum area of Lubuklinggau Timur II District, starting with a problem formulation that leads to an in-depth study of aspects of uninhabitability. The main objective is to identify ineligibility criteria and optimize the use of rehabilitation funds. We selected the research sample using a probability sampling method from 218 houses, which resulted in 69 houses as a sample with a standard error of 10%. The instruments used include a Guttman scale-based questionnaire and a checklist for field observations, which are designed to collect quantitative data regarding the physical condition of the house. The data collection process was carried out through distributing questionnaires to sample houses and careful field observations. The data obtained is then analyzed using statistical methods, allowing a more comprehensive understanding of the condition of uninhabitable homes and relevant information for rehabilitation interventions.

RESULTS AND DISCUSSION

Identification of House Conditions Based on RTLH Criteria

From the research results, it was found that of the 69 samples, only 59 samples had their land status and house ownership, while the remaining 10 sample houses did not belong to them. The basis for assisting in the rehabilitation of uninhabitable houses is ownership of one's land and house. The importance of land and house ownership is a crucial factor in dealing with inadequate housing. Owned houses have the potential to undergo repairs more easily, while rental or rented houses have their challenges regarding meeting suitability standards. For land and houses that are owned in your name, it will certainly be easy to handle them, because administratively they have fulfilled the requirements for the government in assisting the uninhabitable housing program. Meanwhile, if assistance is given to residents whose houses and land are not in their names, problems will arise in the future, one of which is that land and house owners will object if their land is built permanently because they are only temporarily living on the land/house owner's land. This research focuses on 59 houses whose land is owned by themselves. Where residential density is the ratio between the number of family members and the area of space in the house occupied by residents which is measured in M2 with a minimum limit of 7.2 M2/person. Of the 59 samples of uninhabitable houses, there are 44 houses, while 15 houses did not have additional rooms. Additional space was carried out in 44 houses to meet the criteria for residential density in uninhabitable houses by adding one room or room. When adding rooms or expanding a house, you need to pay attention to the number of family members living as well as the size of the land and the location of the additional rooms to be developed so as not to damage or reduce the aesthetics of the building in other rooms. This principle has been put forward in research conducted by [1].

This research conducted observations of 59 houses that had serious problems in the construction of the building structure. Several aspects of construction that do not have foundations, sloofs, columns, ring beams, and non-structural construction include floors made of cement, walls made of wood, windows, and doors made of class III wood, and not having air ventilation holes in windows and doors and there is a roof made of zinc that was leaking and rusting. The air circulation and lighting systems in the house also do not meet the specified standards. Lighting in the building is still below 10% of the building area, while air circulation is still below 5% of what was expected. This problem was seen in the sample houses, especially those that did not have ventilation in the door and window frames, which resulted in the room being dark and lacking in air circulation. In dealing with construction damage, buildings in uninhabitable houses are not the same, this is due to differences in

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construction damage based on field observation data for each house, some with heavy construction damage, moderate construction damage, and light construction damage. Of the 59 sample houses, there were 54 houses with heavy construction damage, 2 houses with moderate construction damage, and 2 houses with light construction damage. For houses with heavy construction damage to the roof, walls, floors, and windows, and houses without foundations. One important factor to consider is lighting and air circulation. To achieve this goal, it is necessary to adjust the size of the door and window frames to match the overall dimensions of the building. In this case, the right size of door and window frames will be designed to ensure that natural light can optimally enter the room and fresh air can flow properly. This finding is in line with previous research which shows that inadequate physical conditions of buildings must be repaired by building safety requirements [1].

Water is a natural element that has an important role in the lives of humans, plants, and animals. The demand for water not only increases with population growth but also due to the increased intensity of human use and needs [1]. Based on the results of this research, it was revealed that the sanitation and clean water conditions in the 59 samples were still inadequate. The majority of homes still face serious challenges in maintaining cleanliness and access to safe, clean water. The impact of inadequate sanitation conditions and clean water on the health and quality of life of the residents of these houses is very high, indicating that they are more vulnerable to diseases that can be prevented by sanitation facilities and clean water supplies in these houses. This provides a strong foundation for continuing efforts to improve sanitation and clean water for uninhabitable homes with a focus on developing better sanitation infrastructure and increasing access to good clean water. This is in line with previous research related to how to address the provision of adequate clean water for poor communities [2].

Analysis of House Conditions Based on RTLH Criteria

In the process of identifying uninhabitable houses, of the 69 sample houses, only 59 of them met the criteria for uninhabitable houses. These criteria include several important factors, such as residential density in one house, damage to house construction, availability of sanitation, inadequate quality of clean water, and poor air circulation and lighting. Based on Table.

A	B	C	D	E	F	G	H	I	J
1	1	1	1	1	1	1	6	100	uninhabitable in the heavy category
2	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
3	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
4	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
5	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
6	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
7	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
8	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
9	1	0	0	0	0	0	1	16,67	Uninhabitable in the low category
10	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
11	1	1	0	0	0	0	2	33,33	Uninhabitable in the low category

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12	1	1	1	0	1	1	5	83,33	Uninhabitable in the heavy category
13	1	1	0	0	1	1	4	66,67	Medium Category
14	1	1	1	0	1	1	5	83,33	Uninhabitable in the heavy category
15	1	1	1	0	1	1	5	83,33	Uninhabitable in the heavy category
16	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
17	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
18	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
19	1	1	0	1	1	1	5	83,33	Uninhabitable in the heavy category
20	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
21	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
22	1	1	0	1	1	1	5	83,33	Uninhabitable in the heavy category
23	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
24	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
25	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
26	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
27	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
28	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
29	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
30	1	1	0	1	1	1	5	83,33	Uninhabitable in the heavy category
31	1	0	1	1	1	1	5	83,33	Uninhabitable in the heavy category
32	1	1	0	1	1	1	5	83,33	Uninhabitable in the heavy category
33	1	1	0	1	1	1	5	83,33	Uninhabitable in the heavy category
34	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
35	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
36	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
37	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
38	1	0	1	1	1	1	5	83,33	Uninhabitable in the heavy category
39	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
40	1	1	0	1	1	1	5	83,33	Uninhabitable in the heavy category
41	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
42	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
43	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
44	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
45	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
46	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category

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47	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
48	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
49	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
50	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
51	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
52	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
53	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
54	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
55	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
56	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
57	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
58	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category
59	1	1	1	1	1	1	6	100	Uninhabitable in the heavy category

Table captions
A. Respondent.
B. Residential Density.
C. Building Damage.
D. No Access to Sanitation.
E. Unsuitable Clean Water.
F. Lack of Air Circulation.
G. Lack of room lighting.
H. Number of RTLH Criteria.
I. Damage Percentage.
J. The condition of the house is not habitable.

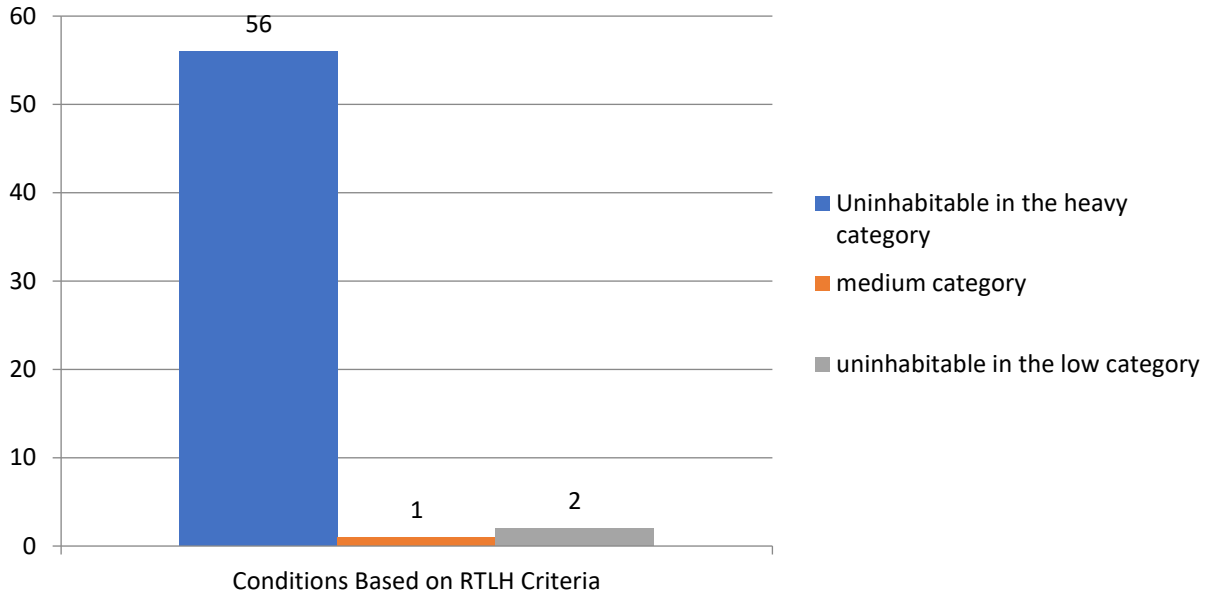

Figure 2. Analysis of house conditions, and criteria for houses that are uninhabitable.

Based on the picture above, there were 59 houses identified as uninhabitable. The uninhabitable houses were then divided into three categories based on the level of criteria for uninhabitable houses. These categories are as follows:
1. The housing category is uninhabitable in the heavy category.

The category of houses experiencing serious damage that affects some or all of the criteria for houses is uninhabitable with a percentage above 67%. This means that this house is categorized as an uninhabitable house with a serious category including poor construction, poor sanitation, inadequate clean water, as well as other problems such as air circulation and lighting. The number of houses in uninhabitable condition is 56 houses.

2. The house category is not suitable for habitation in the medium category.
   The housing category is in the medium category which is not as heavy as the first category, but still influences half of the criteria for uninhabitable houses with a presentation of 34% -67%. This means that several aspects of the house, such as sanitation or clean water, are adequate, but there are still problems with construction or air circulation and lighting that need to be fixed. The number of houses in uninhabitable condition is 1 house.
3. The housing category is uninhabitable in the low category.
   This category refers to houses in the low category which are relatively small with a percentage below 33%. In this case, only sanitation and clean water quality do not meet the requirements. This shows that the condition of the house does not fully meet standards, but the damage is not too serious and can be repaired with simple repairs. The number of houses with light damage was 2 houses.

Optimizing Government Assistance Funds

To improve the quality of housing for residents who live in uninhabitable houses, analysis of the level of house condition plays an important role. This analysis process has identified homes that unequivocally do not meet residential standards based on strict criteria. The next important step is to allocate appropriate funds, with an approach to urgent needs.

Fund allocation must be done carefully so that limited resources are used efficiently and effectively. The allocated funds are used to repair or rebuild houses by predetermined residential suitability standards by ensuring that the allocation of funds is based on clear needs and criteria. The government shows its commitment to creating a safer, healthier, and more livable environment for all its citizens. When implementing it in the field, it is necessary to create an RAB and drawings that suit the needs of each house. For this reason, a unit price for work is needed to calculate the required funds used and to help facilitate work in the field.

Based on the work unit price list, it makes it easier to calculate a job. The level of damage to houses is in the severe damage category where on average each house does not have foundations, sloofs, columns, ring beams, does not have a proper bathroom, there is no clean water source available, there is no septic tank and there is a lack of air circulation and room lighting. If the house does not have clean water, a well or drilled well will be built, connected to the PDAM network so that the need for clean water is met. Likewise, if there is no access to sanitation, proper sanitation is built which is communal or private sanitation, where all work implementation refers to the needs of each uninhabitable house to optimize assistance. With the assistance provided by the government amounting to Rp. 20,000,000,- it is very important to pay attention in the implementation so that the work is not met in terms of the criteria for an uninhabitable house or the house becomes incomplete and causes problems in the future. Apart from that, community self-sufficiency is also needed in implementing assistance for uninhabitable houses. This is confirmed by research related to the success of improving the quality of uninhabitable houses to become habitable houses [4].

The implementation of the assistance program to repair uninhabitable houses has succeeded

in improving the quality of inhabited houses. In the process, this program has ensured that the buildings are equipped with foundations, sloofs, columns, beam rings, and roof coverings and floors that are in good condition. Apart from that, this assistance program also pays attention to aspects of sanitation, air circulation, and adequate lighting, making the house more livable.

The successful implementation of the program can be seen in careful calculations, an effective approach, and efficient use of resources. This allows the program's success rate to increase significantly. This uninhabitable house rehabilitation assistance program not only improves the physical structure of the building but also aims to increase community independence in terms of participating in the uninhabitable house rehabilitation program carried out by the government.

CONCLUSION

From the results of the research that has been carried out, it can be concluded that this research was successful in identifying and analyzing the condition of uninhabitable houses in the target area. Of the 69 houses monitored, 59 of them were identified as meeting the criteria for uninhabitable houses. This analysis focuses on aspects such as land and house ownership, the need for additional space, the level of construction damage, sanitation and clean water conditions, as well as the quality of air circulation and lighting. In terms of damage, 2 houses were categorized as experiencing light damage, 1 house with moderate damage, and the majority, namely 56 houses, experienced heavy damage.

The use of rehabilitation assistance funds requires an analytical approach to determine appropriate and efficient allocations, to improve housing suitability standards. The main goal of this program is to create a safer and healthier environment for its residents. These conclusions not only reflect the initial objectives envisaged at the start of the research but also pave the way for the development of better policies and practices in the field of housing and community welfare.

Furthermore, this research offers a strong basis for further studies, such as evaluating the long-term impact of rehabilitation interventions, developing more effective funding allocation models, and exploring innovative intervention strategies. Through this approach, this research has the potential to make a significant contribution to the development of sustainable housing policies and improve the quality of life of people in slum areas.

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