

# Priority Determination of the Recipient of Rehabilitation Assistance for Uninhabitable Houses (RTLH) in Central Lombok Regency, Indonesia

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**ABSTRACT:** Rehabilitation of uninhabitable houses (RTLH) is a program for poor households that own houses that do not meet standards and aims to increase their standard of living by providing housing that meets standards. This study aims to: 1. determine the weight of the criteria that influence decision-making to determine the priority of recipients of RTLH assistance; 2. find out how to determine the priority of recipients of assistance; and 3. determine the determination of the handling strategy in determining the priority of recipients of RTLH assistance. This study uses the Analytical Hierarchy Process (AHP) method as a research methodology and uses related sources as the basis of the theory used. From the results of the analysis, it is obtained that: 1. the average weight that influences decision-making is 25.00%, which comes from the technical aspect; and 2. the average weight is 20.02%, which comes from the economic aspect. 2. Prioritization is determined by analyzing the resulting data from the questionnaire using the BPMSG AHP Excel template with multiple inputs with the condition that the CR value must be less than 10% ( $CR < 10\%$ ), so that the priority is said to be acceptable. 3. strategy in determining the priority of recipients of RTLH; that is, related agencies focus more on and prioritize providing assistance to communities that have technical and economic aspects that meet the requirements of beneficiaries than other aspects.

**Keywords:** priority, Uninhabitable House (RTLH), AHP, aspects.

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## I. INTRODUCTION

The rehabilitation program for uninhabitable houses (RTLH) is a program aimed at poor households, which have houses that do not meet standards for living in and aim to increase their standard of living fairly by having housing that meets standards [1]. The Housing and Settlement Area Office of Central Lombok Regency, West Nusa Tenggara Province, carries out housing matters related to the handling of uninhabitable houses, which is carried out through activities to improve the quality of self-help houses and the construction of new self-help houses given to groups of aid recipients. In the Central Lombok Regency Medium-Term Development Plan (RPJMD) for 2021–2026 [2], the target for handling uninhabitable houses is 2,000 housing units. This is due to the condition of Covid-19, which results in the Regional Government's budget being larger to deal with the consequences of Covid-19. With the limited budget for handling uninhabitable houses, the number of units handled also decreases, which has an impact on the number of beneficiaries. Recipients of uninhabitable housing assistance are people who live in unfavorable conditions, such as poverty. Poverty arises from the implication of social inequality, which is marked by social problems such as begging, unemployment, crime, and families who have uninhabitable homes and very low levels of health [3].

### Criteria for uninhabitable houses (RTLH)

Uninhabitable houses are defined as those whose physical and mental aspects do not meet the requirements. To support the function of the house as a good place to live, the physical requirements must be met, namely being safe as a place of refuge and mentally fulfilling a sense of comfort [4]. The degree of feasibility of a residential house can be measured in two aspects: (1) the physical quality of the house and (2) the quality of the housing facilities.

Based on Regulation No. 22/PERMEN/M/2008 [5], concerning Minimum Service Standards (SPM) for People's Housing in Provinces and Districts/Cities Criteria for an uninhabitable house must meet the following requirements:

a) Building safety includes: the lower structure (foundation); the middle structure (columns and beams); and the upper structure.

b) Health includes lighting, ventilation, and sanitation.

c) Adequacy of area minimum 7.2–12 m<sup>2</sup>/person.

The intended criteria for a livable house do not eliminate the use of local technology and building materials in accordance with local wisdom to use technology and building materials in building the criteria for a livable house.

The number of uninhabitable houses (RTLH) in Central Lombok that have been handled throughout 2015–2021 is 5,419 units from various funding sources, while the number of uninhabitable houses in the Strategic Plan (RENSTRA) document for the Housing and Settlement Area Office is 24,365 housing units [2]. However, in 2022, the target of reducing the RTLH in the 2021–2024 Regional Medium-Term Development Plan (RPJMD) will decrease due to Covid-19. This target reduction has an impact on the limited budget to deal with reducing the number of uninhabitable houses. Therefore, the determination of criteria for recipients of uninhabitable housing rehabilitation assistance (RTLH) is based on various aspects of eligibility criteria for recipients of assistance, namely socio-cultural, economic, technical feasibility criteria, and regional spatial planning (land allotment). From the background of the problems above, the researcher was interested in knowing the priority order of the factors that influenced the selection of criteria and priority alternatives for aid recipients so that they could become a guide in determining priority criteria and alternatives for aid activities of the same type.

Recipients of uninhabitable housing assistance (RTLH) are closely related to several aspects that affect life, such as socio-cultural, economic, technical, and spatial aspects of an area. And these aspects will be studied in relation to determining priority recipients of uninhabitable housing assistance (RTLH). These aspects include [6]:

- 1) Social aspect
- 2) Economic aspect
- 3) Technical aspects
- 4) Aspects of regional spatial planning
- 5) Aspects of the Location of Assistance for Uninhabitable Houses (RTLH)

### **Analytical Hierarchy Process (AHP)**

Analytical Hierarchy Process (AHP) is a decision-making algorithm for multi-criteria problems (Multi Criteria Decision Making, or MCDM) developed by Saaty [7]. Multi-criteria problems in AHP can be described in the form of a hierarchy consisting of three main parts: the goals or goals of decision-making, assessment criteria, and alternative choices. The multi-criteria problem is then modeled in a hierarchical structure, as shown in Figure 1. After that, the pairwise comparison stage begins to determine the respective weights of each criterion and alternative. Pairwise comparisons were made based on the subjective preferences of decision-makers. For the assessment using a comparison scale of 1–9 according to Saaty [8].

Hariyadi [9], in his research "An analysis of the damage level and reconstruction priority of elementary school buildings in the Central Lombok District," found that from the research that had been compiled, the level of damage to elementary school buildings in the Central Lombok Regency area was grouped into two categories, namely moderate damage and severe damage.

Syamsuri [10], in his research entitled "Study of Supplier Selection Instruments Using the Analytical Hierarchy Process (AHP) Method in Self-Help Home Assistance Activities," selects suppliers using six main criteria, namely: capital, business license, price, quality of goods, mode of transportation, and store distance. The results of the assessment carried out showed that the nodal criterion, with a value of 86.8%, was the highest-ranking criterion.

Based on the background of the problems above, it is interesting to know the priority order of the factors that influenced the selection of criteria and priority alternatives for aid recipients so that they could become a guide in determining priority criteria and alternatives for aid activities of the same type [11][12]. The objectives to be achieved in this study are as follows:

- 1) Determining the weight of the criteria that influence decision-making to determine priority recipients of uninhabitable housing rehabilitation assistance (RTLH) in Central Lombok Regency using the Analytical Hierarchy Process (AHP) method.
- 2) Determining the Priority of Recipients of Rehabilitation Assistance for Uninhabitable Houses (RTLH) in Central Lombok Regency.
- 3) Determination of handling strategies in determining priority recipients of uninhabitable housing rehabilitation assistance (RTLH).

## **II. RESEARCH PROGRAM**

The research locations used as case studies are as many as 5 sub-districts, namely Praya Tengah, Praya Barat Daya, Praya Barat, Batukliang Utara, and Pujut subdistricts. The consideration for selecting the sample

locations for this research is that these locations have received the most uninhabitable houses in the last five years (2017–2021) [13].

The following are the procedures and steps of this research, which can be explained as follows:

1. Problem formulation. Identifying problems is followed by setting research objectives so that the research becomes clear and directed.
2. Literature study. As a means of developing insights and complementing theory, the analysis of this final research requires a lot of supporting literature studies.
3. Secondary data collection.
4. Primary and secondary data collection.
5. Data Processing. The data obtained was processed using the Analytical Hierarchy Process (AHP) method using the Ques AHP 5 res application.
6. Result and Discussion. From the data that has been obtained, a result and discussion will be carried out.

### III. RESULTS AND DISCUSSION

The data sources used in the AHP analysis are survey methods and direct interviews to find out the situation and formulate the focus of problems that occur in each aspect of management; besides that, a literature study is also carried out based on the technical guidelines used. Questionnaire data were then analyzed using the BPMSG AHP Excel Template with multiple inputs. This application operates in MS Excel. There are 20 worksheets for pairwise comparison input, sheets for combining all assessments, summary sheets for displaying results, sheets with reference tables (index, random, GCI geometric consistency index limit, rating scale), and eigenvector sheets with the EVM method. So by using this program, the required analysis results, such as pairwise comparison matrices, eigenvector values, and consistency index (CI), can be obtained. The AHP analysis display is shown in Fig. 1.

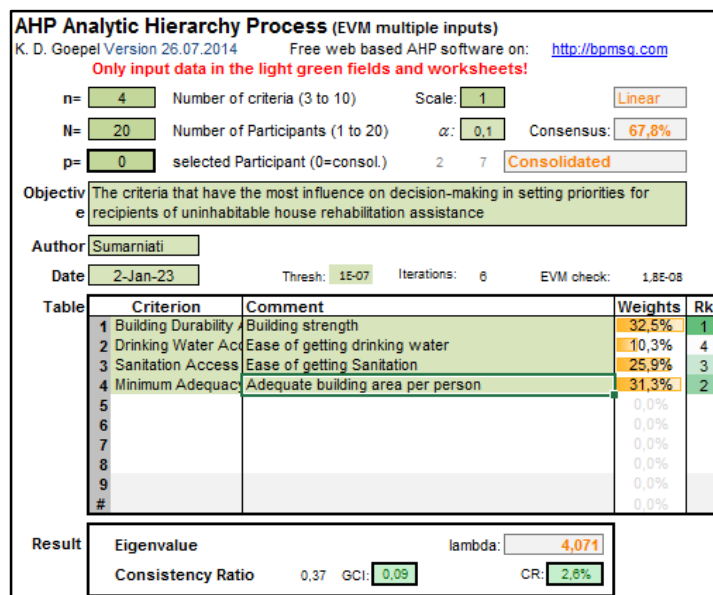


Fig. 1 Pairwise comparison analysis between technical aspect criteria

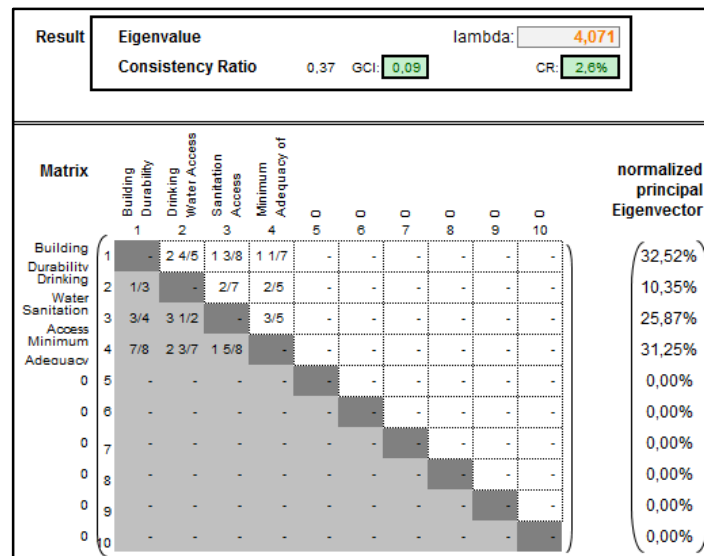
The next step is to make a pairwise comparison matrix using the eigenvector value and the consistency ratio value between the criteria for each aspect. For example, the following result of the technical aspect.

Based on the results of the research data of 25 respondents, the priority criteria are shown in the matrix in Fig. 2. The comparison is based on the results of the answers from the respondents by assessing the level of importance between the criteria, so that the priority weight for the 1st criterion is obtained, namely the Assessment of Building Resilience with a weight of 32.5%; the 2nd priority is Assessment of Access to Drinking Water with a weight of 10.3%; the 3rd priority level is Assessment of Access to Sanitation with a weight of 25.9%; and the 4th priority level is Assessment of Minimum Adequacy of Building Area with a weight of 31.3%.

From the results of the AHP analysis between the criteria, it was obtained that the CR value of 2.6% <10% was acceptable, meaning that the scoring by the respondents in the comparison between elements had been carried out consistently. To find out the results of further calculations, are shown in Table 2.

**Table 1. Criteria for technical aspects that influence decision-making**

No	Criteria	Comment	Weight
1	Building Durability Assessment	Building strength	32,5%
2	Drinking Water Access Assessment	Ease of getting drinking water	10,3%
3	Sanitation Access Assessment	Ease of getting Sanitation	25,9%
4	Minimum Adequacy of Building Area Assessment	Adequate building area per person	31,3%



**Fig. 2 Pairwise comparison matrix between technical aspects**

Based on the analysis using the AHP method, the average weight of each aspect is obtained, namely:

a) The technical aspect has an average weight of 25.00%, and the results of the CR value analysis are 2.60%. So that the value of CR is 10%, it is acceptable.

b) The economic aspect has an average weight of 20.02%, and the results of the CR value analysis are 4.30%. So that the value of CR is 10%, it is acceptable.

c) Aspects of Assistance Locations have an average weight of 33.00%, and the results of the CR value analysis are 13.4%. So that the CR value is > 10%, then it is not accepted.

d) The social aspect has an average weight of 33.30%, and the results of the CR value analysis are 12.90%. So that the CR value is > 10%, then it is not accepted.

e) Spatial Planning and Regions have an average weight of 33.30%, and the results of the CR value analysis are 13.10%. So that the CR value is > 10%, then it is not accepted.

According to the findings of this analysis, it was found that the amount of weight that influences decision-making to set priorities for recipients of Rehabilitation of Uninhabitable Houses (RTLH) assistance in Central Lombok Regency, namely an average weight of 25.00% originating from the technical aspect and an average weight of 20.02% sourced from the economic aspect, of the two average weights, it has a CR value of 10% and is acceptable, which means that the scoring by the respondents in comparisons between elements is carried out consistently.

**Table 2. The results of the AHP analysis between criteria from technical aspects, economic aspects, assistance location aspects, social aspects, spatial aspects, and regional aspects.**

Criteria	Comment	Weight	Average Weight	CR	Explanation
<b>Technical Aspects</b>					
Building Durability Assessment	Building strength	32,50%	25,00%	2,60%	CR<10% = accepted
Drinking Water Access Assessment	Ease of getting drinking water	10,30%			
Sanitation Access Assessment	Ease of getting Sanitation	25,90%			
Minimum Adequacy of Building Area Assessment	Adequate building area per person	31,30%			
<b>Economic Aspects</b>					
Job	Activities that produce goods/services	8,70%	20,02%	4,30%	CR<10% = accepted
Education	Development of self-skill	8,90%			
Income	Income in the implementation of activities	21,30%			
Owned	Control over land and residence	31,30%			
Type of residence	Place to do activities	29,90%			
<b>Assistance Location Aspects</b>					
Seedy Village	Village conditions with bad and unhealthy conditions	42,11%	33,00%	13,4%	CR>10% = not accepted
Tourist Village	Villages with the Form of Unity between accommodation, attractions, tourist supporting infrastructure	14,00%			
Stunting Village	Villages with children experiencing disturbances due to malnutrition and inadequate psychosocial conditions	42,90%			
<b>Social Aspects</b>					
Tribal Conditions	Ethnic groups are part of a whole nation	26,80%	33,30%	12,90%	CR>10% = not accepted
Language Conditions	The ability to communicate with words or gestures	13,60%			
Norm	Rules in society	59,50%			
<b>Spatial Aspects</b>					
Ethnic Group	Ethnic groups are part of a whole nation	26,80%	33,30%	13,10%	CR>10% = not accepted
Language Conditions	The ability to communicate with words or gestures	13,60%			
Norm	Rules in society	59,50%			

In this study, prioritization was determined by analyzing the resulting data from the questionnaires obtained. Then the data was analyzed using the BPMSG AHP Excel template with multiple inputs. So by using this program, the required analysis results, such as pairwise comparison matrices, eigenvector values, and Consistency Index (CI), can be obtained. The conditions that must be met in determining priorities using the AHP analysis method are that the CR value must be less than 10% (CR<10%), so that the priority is said to be acceptable. In this study, priority criteria were obtained, namely from the technical aspect with a CR value of 2.60% and the economic aspect with a CR value of 4.30%. In other words, aspects that have a CR value of <10% are the top priority for recipients of Uninhabitable House Rehabilitation (RTLH) assistance in Central Lombok Regency.

The strategy for determining priorities for recipients of uninhabitable housing rehabilitation assistance (RTLH) is that, in this case, the relevant agencies focus more on providing assistance to people who have technical and economic aspects that meet the requirements of beneficiaries than other aspects. Because these aspects are top priorities based on the results of the analysis obtained.

#### IV. CONCLUSION

Based on the results of research conducted using the AHP method, the following conclusions can be drawn:

1. The amount of weight that influences decision making to determine priority recipients of assistance, namely from an average weight of 25.00% originating from the Technical Aspect and an average weight of 20.02% originating from the Economic Aspect. Of the two average weights, it has a CR value of <10% and is acceptable, which means that the scoring by respondents in comparisons between elements is carried out consistently.
2. Prioritization was decided by examining the results of the questionnaires. The data was then examined using the AHP Excel template, which had many inputs. The CR value must be less than 10% (CR<10%) in order for the priority to be considered acceptable when establishing priorities utilizing the AHP analysis

method. Priority criteria were obtained in this study, specifically from the technical perspective with a CR value of 2.60% and the economic aspect with a CR value of 4.30%. In other words, clients of Uninhabitable House Rehabilitation (RTLH) support in Central Lombok Regency prioritize features with a CR value of 10%.

3. The method for identifying priorities for RTLH rehabilitation assistance recipients is that in this case, the relevant authorities focus more on giving help to communities with technical and economic features that fit the needs of beneficiaries than on other aspects. Because the findings of the analysis show that these are the top priorities.

#### REFERENCES

- [1] N. Handayani, "Menyimak Kehidupan Keluarga 'Miskin,'" *J. Anal. Sos.*, vol. 14, no. 2, pp. 1–12, 2009.
- [2] Anonymous, *Rencana Pembangunan Jangka Menengah Daerah Kabupaten Lombok Tengah Tahun 2021 - 2026*, vol. 1, no. 1. Pemkab Lombok Tengah, 2021.
- [3] R. Fathimah Muharami, "Respon Masyarakat Terhadap Pelaksanaan Program Bantuan Rumah Tidak Layak Huni (RTLH) Dari Dinas Sosial Di Kecamatan Mungka Kabupaten Lima Puluh Kota Provinsi Sumatera Barat," *J. Ris. Mhs. Dakwah dan Komun.*, vol. 1, no. 1, pp. 214–221, 2019.
- [4] T. Sugihartono, "Implementasi Sistem Pendukung Keputusan Penerima Bantuan Rumah Tidak Layak Huni Berbasis Web," *J. Sisfokom (Sistem Inf. dan Komputer)*, vol. 7, no. 1, pp. 52–56, 2018, doi: 10.32736/sisfokom.v7i1.299.
- [5] Kementerian PUPR, "Permenpera No: 22/2008 tentang Standar Pelayanan Minimal Bidang Perumahan Rakyat Daerah Provinsi dan Daerah Kabupaten/Kota," p. 33, 2008, [Online]. Available: <http://storage.jak-stik.ac.id/ProdukHukum/PerumahanRakyat/Permen 22 Tahun 2008.pdf>
- [6] K. Risnawati, "Analisis Konsep Pencegahan Permukiman Kumuh Di Kabupaten Soppeng," *J. Al-Haqārah Al-Islāmiyah*, pp. 38–52, 2022.
- [7] T. L. Saaty, *Decision Making for Leaders: The Analytic Hierarchy Process for Decisions in a Complex World*. RWS Publications, 2012.
- [8] T. L. Saaty, *Fundamentals of Decision Making and Priority Theory*. RWS Publications, 2000.
- [9] Hariyadi; Saifullah; Akmaluddin, "An analysis of the damage level and reconstruction priority of elementary school buildings in the Central Lombok District," in *3rd Borobudur International Symposium on Science and Technology 2021*, AIP Publishing, 2023, pp. 1–6. doi: 10.1063/5.0120740.
- [10] K. Syamsuri, S. Murtiadi, and Akmaluddin, "Kajian Instrumen Pemilihan Supplier Menggunakan Metode Analytical Hierarchy Process (AHP) Pada Kegiatan Bantuan Rumah Swadaya," *ejurnal binawakya, ISSN 1978-3787*, vol. 16, no. 2, pp. 6427–6438, 2021.
- [11] T. S. Valerie Belton, *Multiple Criteria Decision Analysis: An Integrated Approach*, 1st ed. New York: Springer New York, NY, 2002. doi: 10.1007/978-1-4615-1495-4.
- [12] F. Q. Gani, "Analisis Keberlanjutan Energi Pada Industri Gula Menggunakan Multi-Criteria Decision Analysis (MCDA)," ITS Surabaya, Surabaya, 2017. [Online]. Available: <https://core.ac.uk/outputs/291465569>
- [13] Anonymous, *Lombok Tengah Regency in Figures 2023*. Praya, 2023.