Risk Analysis of Housing Rehabilitation Program for Flood Disaster Victims in South Kalimantan Province

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Abstract: The South Kalimantan Province saw a very high number of RTLH in 2021 as a result of floods that impacted 11 of the 13 districts and cities in the province. Additionally, the main justification for initiating the housing repair program, particularly for flood catastrophe victims, was the Minimum Service Standards (SPM) for Basic Services, which the government is required to offer to all citizens. Thus, the purpose of this study is to evaluate the main risk variables that must be taken into account and develop risk management plans for the House Rehabilitation Program for Flood Disaster Victims in the Province of South Kalimantan. Interviews, observations, and surveys using questionnaires provide the data for this study's analysis. Purposive sampling was used in the selection of the responders. Materials, labor, administration and finance, the physical and environmental characteristics of the work site, social conditions and community involvement, communication and coordination, and 28 other categories make up the variables employed. Prior to calculating the risk level, the analysis entails risk assessment using probability and impact measurements as well as the severity index technique. Administrative, technical, and environmental factors are the most common factors, according to the research findings. These factors include medium-risk items like: delays in material delivery (R1), lack of labor (R7), changes in the Decree on the determination of aid recipients (R12), untimely payments (R14), delays in the creation of beneficiary savings books (R15), server disruptions in the aid disbursement application (R16), short program contracts (R18), weather (R19), hard-to-reach locations (R21), and recipients not being present (R28). To reduce the impact of these risks, more careful planning, improved digital system integration, and intense cross-sector collaboration are therefore necessary.

Keywords: Mitigation, Dominant Risk, RTLH, Risk Analysis.

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I. INTRODUCTION

A home serves as both a place to live and a way to raise a family, making it a basic human necessity. Being able to live in a home is a fundamental right that needs to be met in accordance with accepted standards. In actuality, though, some people-particularly the impoverished-still lack a livable home. Law Number 1 of 2011 concerning Housing and Residential Areas, Article 40 of Law Number 39 of 1999 concerning Human Rights (HAM), and Article 28 H paragraph (1) of the 1945 Constitution of the Republic of Indonesia (UUD RI) all contain provisions governing the right to housing. According to these regulations, the state is in charge of providing for everyone's requirements, including the impoverished, who have the right to live in a decent home at a reasonable cost. To carry out this goal, the government, through the Ministry of Public Works and Public Housing (PUPR), works with banks and the private sector to create a program that meets housing needs and lowers Indonesia's poverty rates.

The Public Housing and Settlement Area Service (Disperkim) of South Kalimantan Province is required to meet the Housing and Settlement Development indicators in the 2020–2024 National Medium-Term Development Plan (RPJMN), specifically the number of households occupying decent and affordable housing, in order to support this policy. Slums and uninhabitable dwellings (RTLH) are major problems in the housing sector in the 2020–2024 RPJMN. In 2021, 39,1% of households lived in RTLH, while 60,9% of households occupied housing that satisfies all qualifying requirements.

Each member of society has a very different ability and capability to provide housing; some of these households are even classified as uninhabitable properties. The flood that swept over much of South Kalimantan Province in 2021 was one of the reasons for the relatively high rate of RTLH; in

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11 of the 13 districts and cities, there was infrastructure damage that was harmful to the community and even caused fatalities. According to information on flood-affected facilities made public by the South Kalimantan Provincial Government, 1,418 educational institutions, 847 houses of worship, 184 medical facilities, 1.693 kilometers of roadways, and 128 bridges were all drowned, along with 104.530 homes. There were 7.177 homes affected by the flood disaster; of these, 5.179 had minor damage, 1.318 had moderate damage, 652 had minor damage, and 28 had been lost. As a result, the South Kalimantan Governor's Decree Number: 188.44/058/KUM/2021 was issued regarding the assessment of the province's flood disaster emergency response status.

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II. RESEARCH METHOD

A. Research Method and Samples

A combination of qualitative and quantitative methods is employed in this study in order to examine the main risk factors and identify the handling strategies that need to be considered in the Home Rehabilitation Program for Flood Disaster Victims in South Kalimantan Province. This study was intended to be non-experimental, meaning that it doesn't involve treating or conducting experiments on research objects. As a representation of the research sample, a research instrument was created to detect risks using variables formulated in the form of statements (questionnaires), the outcomes of communication, and interaction with stakeholders and supervisors. As a result, this study falls under survey research and is not experimental. The South Kalimantan Provincial Disperkim's officials, consultants, and field facilitator team participated in this study as respondents. The author distributes questionnaires and conducts interviews with 30 respondents who are deemed representative of each risk that arises during the handling of uninhabitable houses in the Banjarbakula Area in order to use a representative sample because of time constraints.

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B. Data Collection

Both primary and secondary data are used in this investigation. The findings of observations, interviews, and the distribution of questionnaires with questions about respondents, Likert scales, and statement items were used to gather primary data. Validity and reliability tests will be conducted specifically for the questionnaire data until they are genuinely valid and reliable, at which point analysis will In the meantime, secondary data from earlier begin. research and the South Kalimantan Provincial Disperkim were also employed in this study. Following the collection of all research data, dominant risk factor analysis is used to analyze the data. Mitigation methods for research difficulties are then determined based on the analysis's findings.

C. Data Analysis

Data tabulation is done before data processing or analysis is done. Primary data and secondary data are the two types of data that are collected through surveys and interviews. This study's data processing makes use of the Probability Impact Matrix and risk analysis. Since the data generated is respondent perception data, validity and reliability tests are performed on the data before these analyses are conducted.

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RISK IMPACT CRITERIA							
Index Impact Description Impact on strategic objectives and performance (qualitat							
1	Insignifican	Very Low	Less than 1 week				
2	2 Minor Low 1 to less than 2 weeks		1 to less than 2 weeks				
3	3 Moderate Medium 2 to less than 3 weeks		2 to less than 3 weeks				
4	Significant	High	3 to less than 4 weeks				
5	Catastrophic	Verry High	4 weeks or more				

Table 2: Risk Probability Criteria

RISK PROBABILITY CRITERIA							
Index	Probability	Description	Percentage (%)				
1	Very Small	Very rare	0% to 10%				
2	Small	Rarely occurs	11% to 30 %				
3	Medium	Sometime occurs	31% to 60%				
4	Large	Often occurs	61% to 90%				
5	Very Large	Very often occurs	91% to 100%				

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	Table 3: Statement Items in Questionnaire					
No	Statement Items					
1	Material					
	a. Delay in material delivery (R1)					
	b. Poor material quality (R2)					
	c. Inappropriate volume and type of material (R3)					
	d. Excessive use of material/waste material (R4)					
	e. Theft of material (R5)					
	f. Material supplier experiencing financial problems (R6)					
2	Labor					
	a. Lack of labor availability (R7)					
	b. Lack of labor skills (R8)					
	c. Poor Occupational Health and Safety (K3) procedures (R9)					
3	Administration and Finance					
	a. Incomplete recipient administration files/data (R10)					
	b. Disbursement of assistance based on BNBA data (R11)					
	c. Validation of old recipient determination decree (R12)					
	d. Changes to the recipient determination decree (R13)					
	e. Untimely payment method (R14)					
	f. Making a savings book for aid recipients who are waiting for the aid recipient's decree to be ratified (R15)					
	g. Application server for disbursement that often experiences disruptions (R16)					
	h. Lack of control over the work implementation schedule (R17)					
	i. Short program contracts/activities (R18)					
4	Natural Conditions and Geography of the Work Location					
	a. Weather conditions (R19)					
	b. Natural disasters (R20)					
	c. Difficult to reach location conditions (R21)					
	d. Poor location and site conditions (R22)					
5	Social Conditions and Community Participation					
	a. Cultural conditions & customs of the community at the project location (R23)					
	b. Villages experiencing political conflict (R24)					
	c. Lack of active participation from the community (R25)					
6	Communication and Coordination					
	a. Lack of communication and coordination between implementers and recipients of activities (R26)					
	b. Lack of communication and coordination between implementing parties (R27)					
	c. Aid recipients are absent for a long time (R28)					

D. Validity and Reliability Test

Validity testing is done by measuring the correlation between variables with the total score of the variable. The steps to test construct validity are:

- Calculating the total score/value of respondents' answers in each statement/variable.
- Finding the correlation between each statement/variable item and the total score using Spearman's Rank correlation.
- Looking at the p-value (significance α) to determine the validity of each statement/variable item at a p-value α of less than α of 5%.

A statistical metric called the P-value, or probability value, is used to assess how significant the findings of a hypothesis test are. The chance of the observed results or more extreme outcomes occurring if the null hypothesis is correct is indicated by the P-value. The likelihood of getting the same or more extreme actual findings than those observed, provided that the null hypothesis (HO) is true, is another way to interpret the P-value. The results obtained are highly unlikely to occur if the null hypothesis is true, according to a p-value of less than 0,05 or less than 0,01, on the other hand, if the p-value is greater than 0,05, the results obtained are reasonably consistent with the null hypothesis.

It can be said that the statement or variable included in the questionnaire has measured the intended concept (the measurement results obtained by using the statement or variable in the questionnaire have truly stated the results to be measured) if the p-value of the Spearman rank correlation on each statement item or variable is less than the 5% α value.

An index that indicates how much a measuring device can be depended upon or trusted is known as a reliability test. When queried again, a trustworthy measurement device will yield the same results. One can quantify reliability in a number of ways, including:

- The same questionnaire is administered to respondents at several times for repeated measures.
- Using a parallel approach, the same respondents were given two questionnaires.
- The results are compared to other statements in the questionnaire once the measurement is completed once.

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The most popular approach involves taking a single measurement and using the alpha-cronbach value to compute the dependability measure. The more trustworthy the questionnaire and the data collected, the higher the alpha-cronbach value. The formula for alpha-cronbach is:

$$r_{11} = \left(\frac{k}{k-1}\right) \left(1 - \frac{\sum_{i=1}^{p} \sigma_{i}^{2}}{\sigma_{i}^{2}}\right)$$
(1)

When is Reliability, k is number of statements, σ_i^2 is variance of each variable, i is 1, 2, ..., p, and σ_t^2 is the variance of each variable.

E. Risk Analysis

The Severity Index approach was used to examine the data in order to classify risk variables according to the size of the impact (I) and probability (P) values. The following formula is used to determine the Severity Index.:

$$SI = \frac{\sum_{i=0}^{4} a_i \cdot x_i}{4\sum_{i=0}^{4} x_i} \ge 100$$
(2)

Where SI is the Severity Index, xi is the frequency of respondents, ai is the assessment constant, and i is 0,1,2,3,4,...n with x0, x1, x2, x3, x4 being the frequencies of respondents. With a0 = 0 for SJ/SR answers, a1 = 1 for J/R answers, a2 = 2 for C/S answers, a3 = 3 for S/T answers dan a4 = 4 for SS/ST answers.

To facilitate risk analysis using a probability and impact matrix, the Severity Index calculation results are converted into a Likert scale after a value representing the respondent's response in the form of a likelihood category and impact is obtained.

➢ Risk Probability Measurement Scale (P):

- Very Rare (SJ) = 1
- Rare (J) = 2
- Quite (C) = 3
- Often (S) = 4

- Very Often (SS) = 5
- Risk Impact Measurement Scale on Cost, Time, and Quality Aspects (I):
- Very Low (SR) = 1
- Low (R) = 2
- Medium (S) = 3
- High (T) = 4
- Very High (ST) = 5

Furthermore, the severity index value is converted to the probability and impact assessment scale to determine the risk category based on the magnitude of the SI value (%) categorized into the following Likert scale:

- Very Rare/Low (SJ/SR) = 0,00 < SI <12,5
 Rare/Low (J/R) = 12,5 < SI <37,5
- Sufficient/Moderate (C/S)= 37,5 < SI <62,5
- Frequent/High (S/T) = 62,5 < SI < 87,5
- Very Frequent/Very High (SS/ST) = 87,5 < SI < 100

After knowing the probability and impact assessment scale of the risk, then multiply it into the Probability and Impact Matrix to get the value of each risk level and response in facing the risk. According to (Hilson, 2002) To calculate the risk level, the formula can be used:

$$\mathbf{R} = \mathbf{P} \mathbf{x} \mathbf{I} \tag{3}$$

If I is the Impact Level of the risk happening, P is the Probability of the risk happening, and R is the Risk Level. Thus, the degree of danger can be divided into three tiers, which include:

- Low Risk: This type of risk can be disregarded or accepted if it materializes.
- Medium Risk: either a high impact with a low likelihood of occurrence or a low impact with a high probability level.
- High Risk: This type of risk has a significant influence on the project and a high likelihood of happening.

Figure I displays the risk level determined by the probability impact matrix.



Fig 1: Risk Level based on Probability Impact Matrix (Mutiara, 2024)

following frequency of responses pertaining to the

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III. **RESULT AND DISCUSSION**

A. Respondents' Answer Results

The data tabulation findings indicate that the respondents' replies are

Table 4: Program Risk Frequency					
Statement Items Answer Frequen					
	1	2	3	4	5
Material					
a. Delay in material delivery (R1)	3	5	18	3	1
b. Poor material quality (R2)	4	8	17	1	0
c. Inappropriate volume and type of material (R3)	11	10	8	1	0
d. Excessive use of material/waste material (R4)	9	15	4	2	0
e. Theft of material (R5)	16	10	2	0	2
f. Material supplier experiencing financial problems (R6)	9	13	7	1	0

program's impacts and risks.

	c. Inappropriate volume and type of material (R3)	11	10	8	1	0
	d. Excessive use of material/waste material (R4)	9	15	4	2	0
	e. Theft of material (R5)	16	10	2	0	2
	f. Material supplier experiencing financial problems (R6)	9	13	7	1	0
2	Labor					
	a. Lack of labor availability (R7)	4	3	17	6	0
	b. Lack of labor skills (R8)	7	10	11	2	0
	c. Poor Occupational Health and Safety (K3) procedures (R9)	6	8	11	4	1
3	Administration and Finance					
	a. Incomplete recipient administration files/data (R10)	3	9	9	9	0
	b. Disbursement of assistance based on BNBA data (R11)	8	2	8	8	4
	c. Validation of old recipient determination decree (R12)	9	4	12	2	3
	d. Changes to the recipient determination decree (R13)	3	9	12	6	0
	e. Untimely payment method (R14)	4	8	11	6	1
	f. Making a savings book for aid recipients who are waiting for the aid recipient's decree to be	4	8	6	10	2
	ratified (R15)					
	g. Application server for disbursement that often experiences disruptions (R16)	2	7	12	8	1
	h. Lack of control over the work implementation schedule (R17)	2	12	13	3	0
	i. Short program contracts/activities (R18)	3	5	13	6	3
4	Natural Conditions and Geography of the Work Location					
	a. Weather conditions (R19)	1	2	15	9	3
	b. Natural disasters (R20)	7	9	12	1	1
	c. Difficult to reach location conditions (R21)	3	18	0	4	5
	d. Poor location and site conditions (R22)	4	7	13	5	1
5	Social Conditions and Community Participation					
	a. Cultural conditions & customs of the community at the project location (R23)	6	9	12	3	0
	b. Villages experiencing political conflict (R24)	8	9	12	1	0
	c. Lack of active participation from the community (R25)	4	12	12	1	1
6	Communication and Coordination					
	a. Lack of communication and coordination between implementers and recipients of activities	9	14	4	2	1
	(R26)					
	b. Lack of communication and coordination between implementing parties (R27)	8	17	3	1	1
	c. Aid recipients are absent for a long time (R28)	7	11	0	9	2

The mode of responses, as determined by the foregoing responses from the respondents, is 2 very rare

dangers, 6 rare risks, 16 sometimes occurring risks, 1 frequent risk, and 0 frequent risks.

	Table 5: Program Impact Frequency					
No	No Statement Items					:y
		1	2	3	4	5
1	Material					
	a. Delay in material delivery (R1)	6	15	0	5	4
	b. Poor material quality (R2)	6	18	0	2	4
	c. Inappropriate volume and type of material (R3)	9	13	0	4	4
	d. Excessive use of material/waste material (R4)	8	16	0	3	3
	e. Theft of material (R5)	12	10	0	4	4
	f. Material supplier experiencing financial problems (R6)	10	15	0	3	2
2	Labor					
	a. Lack of labor availability (R7)	5	16	0	6	3

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	b. Lack of labor skills (R8)	5	18	0	4	3
	c. Poor Occupational Health and Safety (K3) procedures (R9)	7	17	0	3	3
3	Administration and Finance					
	a. Incomplete recipient administration files/data (R10)	7	16	0	5	2
	b. Disbursement of assistance based on BNBA data (R11)	7	14	0	6	3
	c. Validation of old recipient determination decree (R12)	7	12	0	9	2
	d. Changes to the recipient determination decree (R13)	6	14	0	8	2
	e. Untimely payment method (R14)	7	11	0	9	3
	f. Making a savings book for aid recipients who are waiting for the aid recipient's decree to be	6	15	0	6	3
	ratified (R15)					
	g. Application server for disbursement that often experiences disruptions (R16)	5	14	0	7	4
	h. Lack of control over the work implementation schedule (R17)	7	14	0	6	3
	i. Short program contracts/activities (R18)	3	17	0	8	2
4	Natural Conditions and Geography of the Work Location					
	a. Weather conditions (R19)	4	14	0	10	2
	b. Natural disasters (R20)	5	9	0	12	4
	c. Difficult to reach location conditions (R21)	3	18	0	4	5
	d. Poor location and site conditions (R22)	5	18	0	3	4
5	Social Conditions and Community Participation					
	a. Cultural conditions & customs of the community at the project location (R23)	8	20	0	1	1
	b. Villages experiencing political conflict (R24)	7	19	0	2	2
	c. Lack of active participation from the community (R25)	5	21	0	1	3
6	Communication and Coordination					
	a. Lack of communication and coordination between implementers and recipients of activities	7	19	0	1	3
	(R26)					
	b. Lack of communication and coordination between implementing parties (R27)	5	20	0	3	2
	c. Aid recipients are absent for a long time (R28)	7	11	0	9	3

Similarly, when it comes to program risk and the influence it has on the program particularly time risk it is evident that most respondents believe that program risk has little to no effect. Additionally, as can be shown from the program impact response mode, there is one risk with a very low impact (material theft, R5) and one risk with a big impact (natural disaster, R20). All of the dangers have little effect, with the exception of the two. To guarantee the entire program risk and impact, more research is necessary.

B. Validity and Reliability Test Results

With the aid of IBM SPSS Statistics statistical software, the test was carried out. The reliability of the variable was assessed using Cronbach Alpha, while the validity of the variable was tested using the Spearman rank correlation between statement items and the total score in one factor.

Table 6: Program Risk Validity Test Results				
No	Statement Items	p-value		
1	Material			
	a. Delay in material delivery (R1)	0,003		
	b. Poor material quality (R2)	0,000		
	c. Inappropriate volume and type of material (R3)	0,000		
	d. Excessive use of material/waste material (R4)	0,000		
	e. Theft of material (R5)	0,004		
	f. Material supplier experiencing financial problems (R6)	0,001		
2	Labor			
	a. Lack of labor availability (R7)	0,000		
	b. Lack of labor skills (R8)	0,000		
	c. Poor Occupational Health and Safety (K3) procedures (R9)	0,000		
3	Administration and Finance			
	a. Incomplete recipient administration files/data (R10)	0,002		
	b. Disbursement of assistance based on BNBA data (R11)	0,000		
	c. Validation of old recipient determination decree (R12)	0,000		
	d. Changes to the recipient determination decree (R13)	0,001		
	e. Untimely payment method (R14)	0,000		
	f. Making a savings book for aid recipients who are waiting for the aid recipient's decree to be ratified	0,001		
	(R15)			
	g. Application server for disbursement that often experiences disruptions (R16)	0,005		
	h. Lack of control over the work implementation schedule (R17)	0,001		

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	i. Short program contracts/activities (R18)	0,000		
4	Natural Conditions and Geography of the Work Location			
	a. Weather conditions (R19)	0,000		
	b. Natural disasters (R20)	0,000		
	c. Difficult to reach location conditions (R21)	0,000		
	d. Poor location and site conditions (R22)	0,000		
5	Social Conditions and Community Participation			
	a. Cultural conditions & customs of the community at the project location (R23)	0,000		
	b. Villages experiencing political conflict (R24)	0,000		
	c. Lack of active participation from the community (R25)	0,000		
6	Communication and Coordination			
	a. Lack of communication and coordination between implementers and recipients of activities (R26)	0,000		
	b. Lack of communication and coordination between implementing parties (R27)	0,000		
	c. Aid recipients are absent for a long time (R28)	0,000		

All of the p-values generated by table 6 are less than the 5% α value, indicating that there is strong evidence to reject H0. Therefore, it can be said that all of the variables in the risk probability and risk impact are stated as significant or valid, indicating that each component has been measured and interpreted accurately, as well as the outcomes of testing the program impact. Additionally, a reliability test is conducted to demonstrate the degree of trustworthiness or dependability of a measuring device (Singarimbun et al., 1989).

The ability to produce comparatively consistent measurement results over time should be a feature of every measuring device. The alpha-cronbach reliability test is employed, and the social research limit is 0,6. This indicates that the measuring device under examination is dependable if the alpha-cronbach value is greater than 0,6. The alphacronbach value derived from data analysis can be used to classify reliability into multiple categories, including:

- The reliability is perfect if the alpha-cronbach value is higher than 0,90.
- Reliability is strong if the alpha-cronbach value falls between 0,70 and 0,90.
- The dependability is moderate if the alpha-cronbach value falls between 0,50 and 0,70.
- Reliability is low if the alpha-cronbach value is less than 0,50.

No	Statement Items	Alpha-Cronbach Value			
		Risk Probability	Risk Impact		
1	Material	0,772	0,925		
2	Labor	0,701	0,815		
3	Administration and Finance	0,814	0,957		
4	Natural Conditions and Geography of Work Location	0,647	0,882		
5	Social Conditions and Community Participation	0,818	0,848		
6	Communication and Coordination	0,698	0,9		

Given that every alpha-cronbach value in Table 7 is more than 0,6, it may be concluded that the measuring scale employed in this investigation is dependable. Stated differently, the reliability of the risk probability and risk effect components indicates how much a measuring device can be relied upon or trusted to produce reasonably consistent measurement results across time.

C. Risk Analysis

The Severity Index (SI) approach is used to analyze data in order to identify the probability (P) and effect (I) categories. All respondents' responses are used to generate the Severity Index (SI), and the findings are shown in Table 8.

Table 8: SI Calculation Results for Risk Measurement						
No	Statement Items	SI	Category	Scale of		
		(%)		Measurement		
1	Material					
	a. Delay in material delivery (R1)	45	Enough	3		
	b. Poor material quality (R2)	37,5	Enough	3		
	c. Inappropriate volume and type of material (R3)	24,17	Rarely	2		
	d. Excessive use of material/waste material (R4)	24,17	Rarely	2		
	e. Theft of material (R5)	18,33	Rarely	2		
	f. Material supplier experiencing financial problems (R6)	25	Rarely	2		
2	Labor					
	a. Lack of labor availability (R7)	45,83	Enough	3		
	b. Lack of labor skills (R8)	31,67	Rarely	2		

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	c. Poor Occupational Health and Safety (K3) procedures (R9)	38,33	Enough	3		
3	Administration and Finance					
	a. Incomplete recipient administration files/data (R10)	45	Enough	3		
	b. Disbursement of assistance based on BNBA data (R11)	48,33	Enough	3		
	c. Validation of old recipient determination decree (R12)	38,33	Enough	3		
	d. Changes to the recipient determination decree (R13)	42,5	Enough	3		
	e. Untimely payment method (R14)	43,33	Enough	3		
	f. Making a savings book for aid recipients who are waiting for the aid recipient's	48,33	Enough	3		
	decree to be ratified (R15)					
	g. Application server for disbursement that often experiences disruptions (R16)	49,17	Enough	3		
	h. Lack of control over the work implementation schedule (R17)	39,17	Enough	3		
	i. Short program contracts/activities (R18)	50,83	Enough	3		
4	Natural Conditions and Geography of the Work Loc	Natural Conditions and Geography of the Work Location				
	a. Weather conditions (R19)	59,17	Enough	3		
	b. Natural disasters (R20)	33,33	Rarely	2		
	c. Difficult to reach location conditions (R21)	41,67	Enough	3		
	d. Poor location and site conditions (R22)	43,33	Enough	3		
5	Social Conditions and Community Participation					
	a. Cultural conditions & customs of the community at the project location (R23)	35	Rarely	2		
	b. Villages experiencing political conflict (R24)	30	Rarely	2		
	c. Lack of active participation from the community (R25)	35,83	Rarely	2		
6	Communication and Coordination					
	a. Lack of communication and coordination between implementers and recipients	26,67	Rarely	2		
	of activities (R26)					
	b. Lack of communication and coordination between implementing parties (R27)	25	Rarely	2		
	c. Aid recipients are absent for a long time (R28)	38,33	Enough	3		

Table 9: SI Calculation Results for Risk Impact Measurement

No	Statement Items	SI	Category	Scale of			
		(%)		Measurement			
1	Material	Material					
	a. Delay in material delivery (R1)	38,33	Medium	3			
	b. Poor material quality (R2)	33,33	Low	2			
	c. Inappropriate volume and type of material (R3)	34,17	Low	2			
	d. Excessive use of material/waste material (R4)	30,83	Low	2			
	e. Theft of material (R5)	31,67	Low	2			
	f. Material supplier experiencing financial problems (R6)	26,67	Low	2			
2	Labor						
	a. Lack of labor availability (R7)	38,33	Medium	3			
	b. Lack of labor skills (R8)	35	Low	2			
	c. Poor Occupational Health and Safety (K3) procedures (R9)	31,67	Low	2			
3	Administration and Finance						
	a. Incomplete recipient administration files/data (R10)	32,5	Low	2			
	b. Disbursement of assistance based on BNBA data (R11)	36,67	Low	2			
	c. Validation of old recipient determination decree (R12)	39,17	Medium	3			
	d. Changes to the recipient determination decree (R13)	38,33	Medium	3			
	e. Untimely payment method (R14)	41,67	Medium	3			
	f. Making a savings book for aid recipients who are waiting for the aid recipient's	37,5	Medium	3			
	decree to be ratified (R15)						
	g. Application server for disbursement that often experiences disruptions (R16)	42,5	Medium	3			
	h. Lack of control over the work implementation schedule (R17)	36,67	Low	2			
	i. Short program contracts/activities (R18)	40,83	Medium	3			
4	Natural Conditions and Geography of the Work Location						
	a. Weather conditions (R19)	43,33	Medium	3			
	b. Natural disasters (R20)	50,83	Medium	3			
	c. Difficult to reach location conditions (R21)	41,67	Medium	3			
	d. Poor location and site conditions (R22)	35,83	Low	2			
5	Social Conditions and Community Participation						
	a. Cultural conditions & customs of the community at the project location (R23)	22.5	Low	2			

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	b. Villages experiencing political conflict (R24)	27,5	Low	2	
	c. Lack of active participation from the community (R25)	30	Low	2	
6	Communication and Coordination				
	a. Lack of communication and coordination between implementers and recipients	28,33	Low	2	
	of activities (R26)				
	b. Lack of communication and coordination between implementing parties (R27)	30,83	Low	2	
	c. Aid recipients are absent for a long time (R28)	41,67	Medium	3	

The Severity Index (SI) approach is used to analyze data in order to identify the probability (P) and effect (I) categories. All respondents' responses are used to generate the Severity Index (SI), and the findings are shown in Table 8. This suggests that there are more hazards in the Sufficient category than in the Rare group, which means that these risk items are more likely to result in the risk happening. Table 10 shows that 12 risk items have a risk impact in the

Medium category, while 16 other risk items have a risk impact in the Low category. This is somewhat different from the SI calculation results on the risk impact.

The Probability Impact Matrix is then used to determine the risk level category of the risk item once the risk level value has been determined.

Table 10: Risk Level Value and its Category

No	Statement Items	Р	Ι	R= PxI	Category
1	Material				
	a. Delay in material delivery (R1)	3	3	9	Medium
	b. Poor material quality (R2)	3	2	6	Medium
	c. Inappropriate volume and type of material (R3)	2	2	4	Low
	d. Excessive use of material/waste material (R4)	2	2	4	Low
	e. Theft of material (R5)	2	2	4	Low
	f. Material supplier experiencing financial problems (R6)	2	2	4	Low
2	Labor				
	a. Lack of labor availability (R7)	3	3	9	Medium
	b. Lack of labor skills (R8)	2	2	4	Low
	c. Poor Occupational Health and Safety (K3) procedures (R9)	3	2	6	Medium
3	Administration and Finance				
	a. Incomplete recipient administration files/data (R10)	3	2	6	Medium
	b. Disbursement of assistance based on BNBA data (R11)	3	2	6	Medium
	c. Validation of old recipient determination decree (R12)	3	3	9	Medium
	d. Changes to the recipient determination decree (R13)	3	3	9	Medium
	e. Untimely payment method (R14)	3	3	9	Medium
	f. Making a savings book for aid recipients who are waiting for the aid recipient's decree	3	3	9	Medium
	to be ratified (R15)				
	g. Application server for disbursement that often experiences disruptions (R16)	3	3	9	Medium
	h. Lack of control over the work implementation schedule (R17)	3	2	6	Medium
	i. Short program contracts/activities (R18)	3	3	9	Medium
4	Natural Conditions and Geography of the Work Location				
	a. Weather conditions (R19)	3	3	9	Medium
	b. Natural disasters (R20)	2	3	6	Low
	c. Difficult to reach location conditions (R21)	3	3	9	Medium
	d. Poor location and site conditions (R22)	3	2	6	Medium
5	Social Conditions and Community Participation				
	a. Cultural conditions & customs of the community at the project location (R23)	2	2	4	Low
	b. Villages experiencing political conflict (R24)	2	2	4	Low
	c. Lack of active participation from the community (R25)	2	2	4	Low
6	Communication and Coordination				
	a. Lack of communication and coordination between implementers and recipients of	2	2	4	Low
	activities (R26)				
	b. Lack of communication and coordination between implementing parties (R27)	2	2	4	Low
	c. Aid recipients are absent for a long time (R28)	3	3	9	Medium

In total, the danger level with the low risk category is represented by 11 items, while the risk level with the medium risk category is represented by 17. Furthermore, this study did not identify a high-risk category for the risk level. Ten low-risk items happened in low-risk effects with a rare danger probability, whereas one item occurred in a medium-risk impact with a rare risk probability, according to the Probability Impact Matrix. Even though there is little

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chance of it happening, the parties must still keep an eye on each other to prevent undesirable outcomes. The information in Table IV.8 is grouped according to the degree of risk and the effect of that risk on the program.

- The Study's Risk Factors were then Divided into Four (Four) Categories, Which are as Follows:
- Group I, which consists of 11 medium-risk goods and risk variables with medium-risk impacts.
- Group II, which consists of six medium-risk items/risk factors with minimal risk impact.
- Group III, which consists of one item or risk factor with a moderate impact and a low risk level.
- Group IV, which consists of ten low-risk goods and risk variables with minimal risk impact.

The risk in group I, which consists of 11 risk variables at the medium/moderate risk level with a medium risk impact, was identified as the one group to be managed based on the risk grouping results.

D. Mitigation Strategy

To make sure that the mitigation strategy can be accepted, comprehended, and implemented by all parties involved, validation was done from the created plan to the consultant, specifically the business owner, and the Disperkim party, represented by the Head of the Housing Division (Kabid) and the Head of the Housing Provision Section (Kasi). The following are the validation results, which also attempt to assess the viability, efficacy, and room for improvement of the suggested approach.

- Material Delivery Delays (R1) and Late Payment (R14)
- For the purpose of preventing payment and material delivery delays, Disperkim must work more closely with the party in charge of SK confirmation.
- In order to expedite the fund transfer procedure after the SK is approved, Disperkim must reach a deal with the bank.
- In order to ensure that the products are supplied on time, Disperkim and the consultants reach an agreement with the shop owner and set up a delivery schedule.
- ➤ Insufficient Manpower Availability (R7)
- Depending on the number of recipient homes, consultants must determine the number of personnel required for program execution in the field.
- The Governor's Legalization Process Caused the Decree to Be Approved Late (R12)
- While waiting for the official Decree to be confirmed, Disperkim creates a temporary replacement document for the Governor's Decree so that it can be processed to continue moving activities.

- Modifications to the Decree on Assistance Recipients (R13)
- To provide a seamless verification process, consultants promptly update recipient data via an integrated system.
- To avoid overlap with related stakeholders, Disperkim and the Consultant reach an agreement prior to the Decree's ratification.
- To ensure that work is not delayed by data changes, the consultant creates a list of backup beneficiaries of help.
- Assistance Recipients' Savings Books Are Not Completed on Time (R15)
- To expedite the creation of savings books, Disperkim and the Consultant make the most of mobile banking apps or electronic banking systems.
- In order to guarantee that savings books can be prepared as soon as the Decree is ratified, Disperkim and the Consultant establish a direct line of communication with the bank.
- Disruption of the Assistance Disbursement Application's Server (R16)
- Disperkim suggests expanding servers or updating server capacity to prevent outages when SKPD uses the program concurrently.
- To expedite the procedure, Disperkim gets ready and adds more officers to the data input team.
- Contract for Short Programs (R18)
- To prevent delays, Disperkim creates a more organized and transparent administration strategy.
- Climate Situation (R19)
- In the event that the weather is unfavorable, the consultant supplies protective gear (such as tents, tarpaulins, or rain covers) to ensure that work can continue safely.
- To account for inclement weather, the consultant creates a contingency plan and Disperkim prolongs the implementation period.
- Location Conditions That Are Hard to Access (R21)
- The consultant rents a car that is appropriate for the terrain and places that are hard to get to.
- To facilitate the mobility process, Disperkim and the consultant offer more effective alternate routes and supply materials in smaller formats.
- ➤ Absence of Aid Recipient (R28)
- To ensure that they may be held accountable for finishing the work within the predetermined time frame and requirements, aid recipients must be present when Disperkim and Consultants perform socializing regarding the house rehabilitation program.

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IV. CONCLUSION

- The Following Conclusions Were Reached from this Study Following Examination and Discussion:
- The following are the main risk factors for the Home Rehabilitation Program for Flood Victims' implementation in South Kalimantan Province: administrative, technical, and environmental difficulties:
- ✓ Administrative risks include things like late SK ratification, changes to aid recipients' SK, late payments, delayed savings book creation, application server outages, and short program contracts;
- ✓ Technical risks include things like labor shortages and material delivery delays;
- ✓ Environmental and terrain risks include things like bad weather, hard-to-reach places, and absent aid recipients.
- Administrative dependencies, logistical limitations, and • erratic environmental circumstances are the program's main risk considerations. This suggests that in order to reduce the impact of these risks, more sophisticated planning, improved digital system integration, and rigorous cross-sector collaboration are required. Implementing the program more quickly and effectively will be greatly impacted by concentrating on reducing administrative and technical risks. In order to guarantee that the program can function more effectively in spite of limitations, the suggested mitigation strategy consists of coordination steps, digitalization, resource optimization, and operational adjustments. Technology and party coordination are the primary means of speeding up problem solving.

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