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# Risk Management Analysis Of Community Based Environmental Sanitation Project In The Public Housing Service And Sumbawa District Housing Area

Israjunna<sup>1\*</sup>, Salsabilla<sup>2</sup>, M.Ziaul Fikar<sup>3</sup>, Fitria Ramdhani<sup>4</sup>, M. Nauval Murtada Fasih<sup>5</sup>, Nur Alimah Fadilah<sup>6</sup>, Takwa Rina Ahmad<sup>7</sup>, Muhammad Faisal<sup>8</sup>, Anisaturahma Ningrum<sup>9</sup>, Irawati<sup>10</sup>.

<sup>1-10</sup> Bima Muhammadiyah University. Jln. Orchid No. 16 Nae Subdistrict, Kec. West Rasanae Bima City \*Corresponding author: *israjunna@gmail.com* 

# **ABSTRACT**

Government program for Community-Based Environmental Sanitation (SLBM) is expected to help prevent environmental pollution, where this program is implemented directly by the community in a self- managed manner from the government for the community and managed by the community. A Community- Based Environmental Sanitation Project (SLBM) that is managed independently will certainly arise a number of risks, both problem in the implementation of WWTP construction and problems with the use of Special Allocation Funds (DAK) and also the level of ability of the Community Self-Helf Groups (KSM) themselves. The results of the analysis od Descriptive Statistic, Averages and Standard Deviations show that the most dominant results occur in the SLBM project are the Risk Sources of the WWPT project implementation for the highest risk Frequency, the impact of cost on labor risk is the highest impact of risk on cost, and the level of ability is the most the highest level of the Self-Help Group is the level of organizational ability.

#### Keywords:

KSM; Management; Risk; SLBM

## INTRODUCTION

Pollution of wastewater as one of the impacts of development in various fields besides providing benefits for people's welfare. In addition, the increase in environmental pollution is also caused by the increasing number of residents and their activities. (Indonesian Ministry of Health, Technical Guidelines for IPAL 2014). The government program for Community Based Environmental Sanitation (SLBM) is expected to help in preventing environmental pollution, where the program is carried out directly by the community self-managed from the government to the community and managed by the community.

Self-managed by ordinary people who do not prioritize the community's background in recruiting management members or Community Self-Help Groups (KSM) will cause a variety of risks both in terms of the ability of self-help groups (KSM) and the emergence of various risks during the installation construction project. Wastewater treatment (WWTP) such as risk is less cost effective, because the SLBM project really relies solely on the community. The author's interest in conducting research here is to determine the level of ability of the SLBM Special Allocation Fund (DAK) project management by the CBOs and risks in implementation from the start of the contract to the end of the project because of community performance doubt and need to be emphasized the stage of selecting managers or Human Resources (HR) who are competent except those from the area to be sanitized. (JUKLAK DAK SLBM in 2014)

This research is only focused on the Wastewater Treatment Plant (WWTP) project by the author, from the results of this study it is expected to be able to help the Government of Indonesia which is committed to achieving the Millennium Development Goals' target in the Water and Sanitation sector (WSS-MDG). Based on the facts described in the background, the authors are interested in conducting research with the title "Risk Management Analysis of Community- Based Environmental Sanitation projects in the Public Housing Service and Sumbawa District Housing Areas.

#### **METHOD**

### A. Research design

There are several types of research methods commonly used in research, among others, are research and development methods, experiments, quantitative, qualitative, descriptive, history. The method that we

use in discussing the problems in this study is to use a qualitative descriptive analysis method to determine the risks that most affect the project objectives in each contract and the discussion of risk management.

# **B.** Research variables

Variables are conditions or characteristics that are manipulated, controlled, or observed by researchers. There are two types of variables, namely the independent variable and the dependent variable. Independent variables are independent variables, namely variables that affect the dependent variable. While the dependent variable is the dependent variable, which is the variable that is influenced by independent variables.

# C. Population and research samples

The Population in this study is a project that uses self-managed contract documents, which are explained in Chapter 2 about self-management contract documents generally carried out by the government and the community, for example in the Waste Water Treatment Plant (DAL) from the Government and carried out in Community Based Sanitation (SLBM), the research location in Sumbawa District, West Nusa Tenggara.

## D. Research data collection

The method of collecting data in this study was by distributing questionnaires to respondents from the Self-Help Group and Field Facilitators. The media used in this study are questionnaires given to Self-Help Groups and Field Facilitators or project implementers to get answers about what risks are likely to occur in the implementation of construction projects, the impact on costs and the level of ability of the CBO itself.

#### RESULTS AND DISCUSSION

# A. Frequency Analysis of Risk Sources

In this research, questionnaires were given to 14 respondents from Community Self-Help Groups and Field Facilitators. This questionnaire is given directly by the researcher to the respondent, with the aim that if the respondent feels unclear in filling out the questionnaire, he can ask the researcher.

No	Sources of Risk	MEAN	SD	RANK
1	Material and Equipment Risk	2,89	0,48	2
2	Labor Risk	2,79	0,68	3
3	Risks of IPAl Project Implementation	3,06	0,32	1
4	Risk of Making DED & RAB	2,49	0,72	5
5	Design Risk	2,68	0,48	4

Table 1. Ranking Results from Frequency Analysis of Risk Sources

Table 1 presented shows the results of the risk source frequency analysis in the Community Based Environmental Sanitation (SLBM) project. From this table, it can be seen that there are several sources of risk identified in the implementation of the project. For example, risks related to materials and equipment have a mean value (MEA) of 2.89, indicating a significant level of risk. In addition, risks related to labor are also a concern with an MEA of 2.79. However, the risk of implementing an IPAl project stands out as the highest risk with an MEA of 3.06. This shows the importance of paying attention to these risks in planning and implementing SLBM projects to minimize their negative impacts. Thus, the analysis in the table provides useful insights into SLBM project risk management.

# B. Analysis of the Impact on Costs Due to Risk

The table above presents an analysis of the level of capability of Community Self-Help Groups (KSM) in community-based environmental sanitation construction projects. From this table, it can be seen that there are several sources of risk identified in the project. For example, risks related to materials and equipment have an MEA value of 2.54, ranking it 4th in the analysis. In addition, labor-related risks have an MEA of 2.79, ranking it first in the analysis. This shows the importance of paying attention to the risks associated with the workforce in the project. In addition, project implementation risks are also in focus with an MEA of 2.73, placing it in second place in the analysis. Thus, the analysis in table B provides useful insights in managing the risks associated with community-based environmental sanitation projects.

Table 2. Ranking Results from Impact Analysis of Risk Sources

No	Sources of Risk	MEAN	SD	RANK
1	Material and Equipment Risk	2,54	0,75	4
2	Labor Risk	2,79	0,95	1
3	Project Implementation Risks IPAl	2,73	0,54	2
4	Risk of Making DED & RAB	2,54	0,73	5
5	Design Risk	2,61	0,56	3

## C. Analysis of the Capacity Level of Community Self-Help Groups

Table 3 describes the results of the frequency analysis of risk sources in the Community Based Environmental Sanitation (SLBM) project in the Public Housing Service area and Sumbawa Regency. From this table, it can be seen that there are several sources of risk identified in the implementation of the project. For example, risks related to materials and equipment have an MEA value of 2.89, indicating a significant level of risk. In addition, risks related to labor are also a concern with an MEA of 2.79. IPAl project implementation risk stands out as the highest risk with an MEA of 3.06, indicating the importance of effective risk management in such projects. Additionally, the risk associated with creating DED & RAB has an MEA of 2.49, ranking it fifth in the analysis. Design risk is also a concern with an MEA of 2.68, ranking it fourth in the analysis. The analysis in table C provides a clear picture of the main risk sources that need to be considered in SLBM projects. By understanding these risks, stakeholders can take appropriate steps to reduce their negative impacts and increase the success of community-based environmental sanitation projects. Thus, table C provides a useful insight into managing the risks associated with the project.

Table 3. Ranking Results from Analysis of Self-Help Group Capability Levels Public

No	Ability Description	MEAN	SD	RANK
1	Control Review Rules Group Play	3,03	0,49	3
2	Controlling Group Conditions non-governmental	3,08	0,50	2
3	Organizational	3,25	0,73	1
4	Administration	2,90	1,22	5
5	Capital	2,61	0,78	7
6	Activities	2,90	0,71	6
7	Presence in Society	2,95	0,92	4

# CONCLUSION

Based on logical exposures and the above significance, it can be concluded that this study will provide a theoretical contribution to the development of risk management for community-based sanitation projects. Research provides space for developing models and risk management methods.

Based on the study, the suggestions in this research are:

- 1. For all actors in community-based environmental sanitation construction, it is best to carry out risk management in accordance with applicable regulations so as to reduce the impact of losses due to these risks, as well as take appropriate action in dealing with these risks, not forgetting to always refer to the applicable JUKNIS.
- 2. To the regional government as the project owner to provide further training for community self-help groups (KSM) and field facilitators (TFL) to create unity in working on community-based environmental sanitation construction projects.
- 3. It is hoped that this research will be used as a benchmark for problems in future programs so as not to return the same errors.

4. This research can be further developed by conducting research in other areas in Indonesia which have quite large potential risks in developing community-based environmental sanitation construction projects.

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# REFERENCES

- Ciptakarya.pu.go.id/DAK/Juklak. 2016. meaning of KSM, SLBM, DAK, IPAL, (accessed on Wednesday 05 July 2017, at 18:30), Ministry of PUPR, Jakarta.
- Ervianto, W. I. 2004. Theory Application of Construction Project Management. Andi Offset Publisher, Yogyakarta.
- Fandopa, R. 2012 Risk management in the implementation of the PT Hanafi, M. 2006. Risk Management, Yogyakarta: Publishing and Printing Unit of YKPN College of Management.
- Ministry of Public Works and Public Housing, 2014. Guidelines for the Implementation of Special Allocation funds for Community-Based Environmental Sanitation in 2014, Ministry of PUPR.
- Ministry of Public Works and Public Housing, 2016. Training of Field Facilitators (TFL) for Special Allocation Funds (DAK) for Sanitation Infrastructure Sub-Sector, Ministry of PUPR, Bali-NTB.
- Ministry of Public Works and Public Housing, 2017. Technical Instructions for the Development of KSM Community Self-Help Groups, PNPM Mandiri Urban Community Empowerment National Program.
- Kurniawan, B. Y. 2011. Construction Risk Analysis in the Petra Square Surabaya Apartment Development Project. September Tenth Institute of November. Surabaya. Project Management Institute, Inc. Four Campus Boulevard, Newton Square, Pennsylvania 19073- 3299 USA. an American Nacional Standard, 2004. ANSI/PMI 99-001)
- Project management body of knowledge (PMBOK Guide. project management body of knowledge (PMBOK Guide)-Fifth Edition, Inc. 2013. 14 Campus Boulevard, Newton Square, Jorge Diego Fuentes Sanchea. Pennsylvania 19073-3299 USA.
- Suwandi, P. A. P. 2010. Risk Management Study on Projects Using Lump Sum Contract Systems and Unit Price Contract Systems (Case Studies on Road and Bridge, Building, Waterworks Projects). eprints.undip.ac.id
- Yaved, J. E. G. 2016. Study of Risk Management on Construction Projects for Contractors in Sorong City

# **BIOGRAPHIES OF AUTHORS**



Salsabillah, The author was born in Bima, West Nusa Tenggara on October 31 2005, is a talented student from the Civil Engineering Study Program in Engineering and Computer Science, Bima Muhammadiyah University. With burning enthusiasm, the author has been actively involved in technological innovation activities at the local level, such as Bima City and NTB Province, through programs organized by the regional Research and Innovation Agency. Not only that, the author has also stepped up to the international level by participating in the International Conference held by the University of Muhammadiyah Malang. His participation in this conference shows his interest and dedication in sharing knowledge and networking with scientists and professionals at the global level. With extraordinary passion and enthusiasm, the author is ready to continue exploring the world of technology and contribute to future technological developments. She can be connected at email: slsblhcaca31@gmail.com



Israjunna, S.T., M.T. The author comes from Batu Tering Village, Sumbawa Regency, Indonesia, is a lecturer in Civil Engineering at the Faculty of Engineering, Bima Muhammadiyah University. The author was born on February 1 1992 and has completed his undergraduate education at the Department of Civil Engineering, Samawa University in 2016, and continued his master's education at the Master of Civil Engineering in Construction Management, Atma Jaya University, Yogyakarta in 2018. The author has a variety of work experiences and achievements, including as Head of the PUSDATIN LPPM UNSA Division, Construction Expert Team in various institutions such as the Sumbawa District Prosecutor's Office and Sumbawa Inspectorate, as well as Head of the Sumbawa BNNK IBM Team. He was also Chair of the Building Construction Expert Team II at Bima Muhammadiyah University, Chair of the Civil Engineering Study Program at the same university, and won first place in the NTB Province TTG Competition. With his work experience and achievements, the author has demonstrated dedication and commitment in the field of construction and project management. Through the various roles he has held, he continues to contribute to the development and improvement of quality in the various institutions and projects he is involved in. Israjunna's expertise and experience in construction management, project risk management and building construction have made him an influential and respected figure in academic and professional circles in the field of Civil Engineering. If you are interested in collaborating or getting more information about the research carried out by the author, you can contact him via email: israjuna@gmail.com



M. Ziaul Fikar S.Si.,M.Eng, The author is a lecturer in Civil Engineering who was born in Nata on April 21 1992. He completed his Bachelor's degree in Physics FMIPA at Mataram University and continued on to the Master's degree in Physics Engineering at Gadjah Mada University. Currently, the author works as a lecturer at the Faculty of Civil Engineering, Bima Muhammadiyah University. In his career, the author has teaching experience at SMP 1 Palibelo in 2021-2023 before joining as a Civil Engineering Lecturer at Bima Muhammadiyah University. As a researcher, he specializes in the fields of Geophysics, Geoelectricity, Seismics and New Renewable Energy. Apart from that, the author has also received awards for his contributions to the world of education and research. With a strong educational background and deep research interests, M. Ziaul Fikar continues to be committed to developing science and technology in the field of Civil Engineering. If you are interested in collaborating or getting more information about the research carried out by the author, you can contact him via email <a href="mailto:ziaul.fikar210492@gmail.com">ziaul.fikar210492@gmail.com</a>.



Fitria Ramdhani, The author was born in Bima, West Nusa Tenggara on October 23, 2005. As a student of the Civil Engineering Study Program at the Faculty of Engineering and Computer Science, University of Muhammadiyah Bima, the author has high enthusiasm and dedication in the field of technology. In addition to pursuing his studies, the author is also active in participating in competition activities. He once participated in the Appropriate Technology activity organized by the Bima City Regional Research and Innovation Agency, showing his interest in applying engineering knowledge for the benefit of the community. In addition, the author also participated in the International Conference held by Muhammadiyah University of Malang, showing his interest in engineering. The author with his enthusiasm continues to hone his skills and try to achieve achievements in various competitions. She can be connected at email: <a href="mailto:ftrmdhn4@gmail.com">ftrmdhn4@gmail.com</a>



M.Naufal Murtada Fasih, The author was born in Bima, West Nusa Tenggara on February 22, 2006. As a student of the Civil Engineering Study Program at the Faculty of Engineering and Computer Science, University of Muhammadiyah Bima, the author has high enthusiasm and dedication in the field of technology. In addition to pursuing her studies, the author is also active in various competition activities. He once participated in an appropriate technology activity organized by the Bima City Regional Research and Innovation Agency, showing his interest in applying engineering knowledge for the benefit of the community. In addition, the author also participated in the National Bridge Competition organized by Politeknik Negeri Semarang, showing his interest in structural engineering. With his burning passion, the author continues to hone his skills and try to achieve achievements in various technology competitions. He can he connected email: noeldirgantara33@gmail.com



Nur Alimah Fadillah, The author, a student born in Bima, West Nusa Tenggara on August 7, 2004, is currently pursuing her career in the Civil Engineering Study Program at the Faculty of Engineering and Computer Science, Muhammadiyah Bima University. In addition to focusing on her studies, the author is also actively involved in self- development activities, such as her participation in appropriate technology activities organized by the Bima City Regional Research and Innovation Agency. This shows the author's high commitment and dedication in applying his knowledge and skills for the advancement of technology in the surrounding environment. The author is ready to continue to make achievements and make positive contributions in the academic and technological world. She can be connected at email: Nafdn27@gmail.com



Takwa Rina Ahmad, writer was born in Bima, West Nusa Tenggara on October 9 2000, the writer is a figure who exudes enthusiasm and achievement at every step. As a student with a dedicated spirit, the author is currently pursuing his career in the civil engineering study program at the Faculty of Engineering, Muhammadiyah Bima University. Apart from making academic achievements, the author has also made a brilliant mark in the world of work. Valuable experience as admin staff at Yogyakarta International Airport's Xpressair airline and as a receptionist at the Marina Iin Hotel in Bima City has completed his professional journey. The author's toughness and fighting spirit are also reflected in the various competitions he participates in. His success in winning second place in the school level 100-400 meter distance running competition shows his determination and speed in achieving his goals. In the field of English, the author also made achievements by winning a silver medal in the national English Language Olympiad among students, indicating his ability to communicate across cultures brilliantly. Not only that, as the 1st hopeful winner in the Bima City level TTG competition, Rina continues to prove that her talent and dedication goes beyond existing boundaries. She can be connected at email : takwarinaa@gmail.com



Muhammad Faizal, The author, born in Bima, West Nusa Tenggara on November 20, 2006, is a student full of passion and creativity in the field of engineering. Currently, the author is pursuing studies in the Civil Engineering Study Program at the Faculty of Engineering and Computer Science, Universitas Muhammadiyah Bima, where he continues to hone his abilities and talents. Besides focusing on education, the author is also active in various challenging competition activities. One of his brilliant achievements was when he participated in the Appropriate Technology activity organized by the Bima City Regional Research and Innovation Agency. Through her participation in the activity, the author not only demonstrated her proficiency in applying technology for the benefit of society, but also inspired others with her innovative ideas. With his burning passion and boundless creativity, Faizal continues to strive to make a positive contribution in the engineering world and become an agent of change that has a wide impact on society. He can be connected at email: m.faizal 20@icloud.com



Anisaturahmah Ningrum, the author is a student of the Nutrition study program at the Faculty of Health, Bima Muhammadiyah University, born in Bima on July 7 2001. Apart from pursuing his studies, the author has had a strong interest in rock climbing since junior high school. With experience as an administrator and officer at a clinic, as well as being involved in sports activities at the national level, the author has achieved various brilliant achievements in the sport of rock climbing. He won 2nd place in the West Nusa Tenggara Student Rock Climbing Competition in 2017, gold, silver and bronze medal winner at the 2018 and 2023 Provincial Sports Week (POPROV), as well as the certificate holder for the Bali-Nusra National Championship in the Climbing Competition The cliff of 2020. She can be connected at email: annisaturahmahningrum@gmail.com



Irawati, The author is a student in the Nutrition study program at the Faculty of Health, Bima Muhammadiyah University, born in Bima, West Nusa Tenggara on August 4 2005, and has been active in research activities to improve student health. Through research on the diversification of healthy food at SMP 6 Bima City and anemia prevention research at SMP 15 Oi Fo'o Bima City, as well as social service activities in Nitu Village, the author has shown commitment to making a positive contribution to society. With high enthusiasm, the author continues to strive to create a positive impact on the surrounding environment and society at large, showing deep concern for the health and welfare of all. The author's participation in research on the diversification of healthy foods and prevention of anemia not only reflects dedication to the health sector, but also shows concern for the welfare of students. Through social service activities in Nitu Village, the author has also made a real contribution in helping the local community. By actively engaging in these various activities, the author not only shows his academic abilities, but also his enthusiasm for sharing knowledge and making a positive impact on the surrounding environment. She can be connected at email: watiira2407@gmail.com