



## PRE-CRISIS STUDY OF VULNERABLE GROUPS IN THE NALO TANTAN HEALTH CENTER AREA, MERANGIN DISTRICT

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## **ABSTRACT**

*Flooding in Jambi in 2019 was quite high, according to BNPB. However, from 2018 to 2020, flooding in Merangin Regency experienced ups and downs. According to data from the Nalo Tantan District Health Center, there are 1,058 parents, 281 pregnant women and 522 children under five who are included in the vulnerable group. By preparing and preventing flood disasters, the risk and consequences of flood disasters that often occur in Nalo Tantan District can be reduced. The aim of this research is to look at mapping areas that may be affected by flooding. The ecological study design method used by researchers is a spatial approach assisted by a geographic information system computer program. The results using spatial analysis showed that the highest distribution of vulnerable groups including children under five, pregnant women and the elderly in Nalo Tantan District was in Sungai Ulak village and the lowest number was in Telun village. There is a distribution of the number of vulnerable groups in Nalo Tantan District spread across several villages in large numbers. It is hoped that health workers will be more responsive and skilled in dealing with vulnerable groups, especially in villages with the largest number of vulnerable groups.*

Keywords: Spatial analysis, vulnerable groups, flood disaster.

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## **INTRODUCTION**

Flood disasters are among the biggest disasters in the world. Based on data obtained from the Agency for the Study and Application of Technology (BPPT, 2010), flood incidents and victims rank first in the world compared to other natural disasters, reaching 55%. Some large cities, important industrial areas and fertile agricultural areas in the world are located in flood plains such as New York, Tokyo, Osaka, Bangkok, Amsterdam, Jakarta and so on. (Gustini et al., 2021)

Merangin is one of the districts in Jambi Province, Indonesia. The capital city is Bangko. One of the sub-districts in Merangin Regency is Nalo Tantan District. Based on information obtained from the Health Crisis Center regarding the flood disaster that occurred in 2 sub-districts, namely Nalo Tantan, and Batang Masumai, Merangin Regency. There was flooding in Nalo Tantan and Batang Mesumai Districts, Merangin Regency on October 22 2022 at 22.00 WIB. As a result of this incident, 241 housing units were affected by flooding with water levels of 50 - 100 cm. (Wibowo et al., 2013)

The flood disaster occurred in Sungai Ulak Village, which is one of the villages in Nalo Tantan District. The flood disaster was caused by quite high rainfall over a relatively long and frequent period. This causes the rivers around the village to no longer be able to accommodate rainwater. And during a flood disaster it also has a big impact on other sectors which can hamper sub-district development activities. One of the impacts that will occur is damage to facilities and infrastructure, loss of property and objects, it can cause casualties if the water flow is too strong,

it can also be a threat of disease outbreaks, damage to community agricultural areas and the transportation sector, which has an impact on damage to road structures, and bridges thereby disrupting the economy of the existing community. (Sutanto, 2012)

The Department of Law and Human Rights stated that vulnerable groups are all people who experience obstacles or limitations in enjoying a decent standard of living. And vulnerable groups also have the right to receive special treatment to be able to meet their daily needs. According to Law No. 39 of 1999 Article 5 Paragraph (3) concerning Human Rights which states that every person who is a vulnerable group of people has the right to receive more treatment and protection. The vulnerable groups referred to include the elderly, children, pregnant women and people with disabilities . (Effendi et al., 2020)

Vulnerable groups are said to be vulnerable because they have limitations and special needs so they are at high risk of disasters or threats of disasters. Vulnerable groups need special treatment and protection so that they can survive post-disaster situations, because this group is the group that bears the greatest impact of disasters. According to Law Number 24 of 2007 concerning disaster management, article 55 states that those included in vulnerable groups are infants, toddlers and children, mothers who are pregnant or breastfeeding, people with disabilities and the elderly. Even though they are both categorized as vulnerable groups, the characteristics and needs of each of these vulnerable groups are different, so that providing appropriate interventions must be tailored to their individual needs and characteristics. In disaster conditions, children with their characteristics become vulnerable to the impacts caused by disasters. Children are often the biggest victims in every disaster because they are unable to protect themselves and are beyond the reach of their parents' supervision. Women are also part of a vulnerable group because they require longer recovery and face more difficult times after a disaster than men. Increased stress during a disaster can cause problems with pregnancy, childbirth and breast milk production during a disaster. This clearly has an impact on the fetus, baby or child being cared for by the mother. Most of the elderly cannot live independently due to limited mobility, weakness or physical and mental health problems and therefore require special services and protection . (Purwoko et al., 2015)

Vulnerable groups when a disaster occurs are a priority because they are considered victims who are very weak and helpless, and need to be protected. Law No. 24 of 2007 emphasizes protecting vulnerable groups only when a disaster occurs. Considering that the focus of global disaster management based on the Sendai framework is disaster risk reduction, high risks to vulnerable groups should be managed so as to reduce risks and protect vulnerable groups. One of the principles of the Sendai framework states that disaster risk reduction requires the involvement and partnership of all levels of society, also requiring inclusive, accessible and non-discriminatory empowerment and participation, paying special attention to people who are disproportionately affected by disasters, especially from the poorest strata of society. Gender, age, people with special needs and cultural perspectives must be integrated into all policies and practices, and leadership by women and youth must be promoted. (Martias, 2021)

Currently, the efforts that can be implemented for disaster management in Indonesia are inclusive disaster management, namely disaster management efforts that involve all elements of society, including vulnerable groups, that need to be involved. This is because the number of disaster victims mostly consists of vulnerable groups consisting of pregnant women, children, the elderly and people with disabilities. The risk and impact of flood disasters, which often occur in Nalo Tantan District, can be minimized by preparing and preventing flood disasters. (Rahma & Yulianti, 2020)

Data obtained from the Nalo Tantan District Health Center for the vulnerable group category showed that there were 1,058 elderly cases in total, consisting of 744 people aged 60 - 69 years, and 314 people over 70 years old. For the vulnerable group category, pregnant women have a total of 281 people, and for the vulnerable group category of children under five, there are 522 people. Based on research by Seniorwan, Dwi Putra, and Komarsa Gandasasmita (2013), the lack of information, especially spatial data regarding the condition of areas that have the potential for flooding, can exacerbate the losses that will occur in the future. Spatial studies of flood disaster areas are very necessary as a reference for mitigation efforts. And the first step in flood risk management is flood hazard mapping. According to Carter (1992), disaster risk assessment can be carried out by identifying the level of danger and estimating the level of vulnerability. The level of flood danger can be determined through spatial modeling of inundation, while the level of vulnerability can be determined through spatial analysis of aspects that are vulnerable to flood disasters (Mahaza, 2023) The risk and impact of flood disasters, which often occur in Nalo Tantan District, can be minimized by preparing and preventing flood disasters.

Based on this, it is hoped that there will be a distribution map group prone to in Subdistrict Nalo Challenges for health workers to be more responsive and skilled in dealing with vulnerable groups, especially in villages with the highest number of vulnerable groups and so on addition range population with vulnerable groups and can be used as motivation for officer health in add outlook related with analysis spatial group vulnerable to disaster in the field health.

## **METHOD**

The population and sample in this study are the included data vulnerable groups such as children under five, pregnant women and the elderly in 7 villages on Subdistrict areas whose areas are included in the Vulnerable Area zone Disasters. Researchers used an analysis method with results in the form of tables and diagrams of the distribution of vulnerable groups. The research time was carried out for 3 weeks. Researchers here try to measure exposure to a predetermined unit of analysis, where the unit of analysis is population, namely 7 villages in Nalo Tantan District whose areas are included in the map of flood-prone areas. The area consists of Mentawak, Ulak River, Aur Thorny, Lake, Telun, Nalo Gedang, and Baru Nalo. (Putro Tejo Baskoro et al., 2013)

The parameters measured in this study were the vulnerability of pregnant women, the vulnerability of toddlers, the vulnerability of the elderly and the ratio of vulnerable groups. Secondary data used in this research is data comes from several official government agencies (Nalo District Central Statistics Agency Tantan, District Crisis Center, and Nalo Tantan sub-district Health Center). The data that has been collected and processed is then analyzed using univariate analysis and spatial analysis. Then analyzed using geographic information system-based software, namely Nearest Neighbor Analytics (NNA) and Network Analytics. Nearest Neighbor Analytics (NNA) is used to see the distribution of vulnerable groups in the research area, and Network Analytics is used to see the distribution of vulnerable groups in the research area. (Aqli, 2010)

## **RESULTS AND DISCUSSION**

In this study, it was found that the total number of children under five in Nalo Tantan District was 1298 children under five. In Sungai Ulak village there are 505 children under five, in Aur Berduri village there are 138 children under five, in Telun village there are 63 children under five, in Nalo Gedang village there are 151 children under five, in Baru Nalo village there are 161 children under five, in Mentawak village there are 179 children toddlers, and in Danau village there are 101 toddlers. Children under five are included in the vulnerable group because children

under five have different characteristics from adults such as age, expectations, education, needs, life experiences, skills, different social pressures, vulnerabilities, responsibilities, opportunities for employment, law, authority in making decisions, ability to protect oneself, risk of accidents, different physical abilities, emotional management, need for love and attention, risk of malnutrition, risk of violence, health problems, rights and protection (Subandi, 2021).

In disaster conditions, children under five become vulnerable to the impacts caused by the disaster. Children under five often become victims because they are unable to protect themselves and are beyond the reach of their parents' supervision (Salahudin, 2023). Children under five are also vulnerable to diseases that arise during disasters because their immune system is weak and their nutritional intake is poor. During a disaster, children under five experience difficulties such as difficulty in accessing food, temporary shelter, loss of social support, and access to health services. Children under five experience fear and trauma, are at risk of being separated from their families, and have the potential to become victims of violence and crime. (Hastuti, 2017)

In this study, the total number of pregnant women in Nalo Tantan District was 379 pregnant women. In Sungai Ulak village there are 102 pregnant women, in Aur Berduri village there are 138 pregnant women, in Telun village there are 19 pregnant women, in Nalo Gedang village there are 30 pregnant women, in Baru Nalo village there are 32 pregnant women, in Mentawak village there are 38 pregnant women. pregnant, and in Danau village there are 20 pregnant women. Pregnant women are said to be vulnerable because most child deaths in Indonesia currently occur during the newborn period.

Pregnant women are also part of a vulnerable group because they require longer recovery and face more difficult times after a disaster. Pregnant women also experience increased stress during disasters which causes problems with pregnancy, childbirth and breast milk production during disasters. This will have an impact on the fetus, baby or child who is being cared for by the mother (Nusi, 2023). Many children experience malnutrition because their mothers also experience malnutrition due to a lack of nutritious food intake during the disaster. Therefore, pregnant women are one of the vulnerable groups that must be considered. Women who are included in the vulnerable group are those who have low power and bargaining power in society because of their gender. The vulnerabilities experienced by women in this group are multiple. For example, pregnant women, women experiencing child marriage, women with different gender expressions, women with disabilities, and women from poor community backgrounds (Elanda, 2021).

This is in line with research by Julia (2021) which states that most pregnant women worry about their health and that of the fetus they are carrying all the time so that pregnant women comply with pregnancy checks. Pregnancy checks are important because every pregnancy can develop into problems or complications every moment, so that Mother pregnant need monitoring during pregnancy.

In this study, it was found that the total number of elderly people in Nalo Tantan District was 1055 elderly people. In Sungai Ulak village there are 416 elderly, in Aur Berduri village there are 119 elderly, in Telun village there are 25 elderly, in Nalo Gedang village there are 44 elderly, in Baru Nalo village there are 67 elderly, in Mentawak village there are 144 elderly, and in Danau village there are 240 elderly people.

The elderly are one of the vulnerable groups because they have physical limitations and advanced age which results in an inability to meet their needs. Elderly people often live alone, which increases the risk. Because of his physical limitations and no help from other family members. so that when a disaster occurs where they are required to evacuate, it will cause feelings of discomfort for the elderly because the elderly feel like they have lost their place of residence and feel like they have lost themselves. Because they are old, elderly people are also very susceptible to diseases that can affect their daily activities. In villages, most elderly people live with family

members and it is not uncommon to find elderly people living alone without anyone accompanying them. The elderly are a vulnerable group because they do not have the assets to meet their basic needs due to their inability to work and carry out activities. (Effendi et al., 2020)

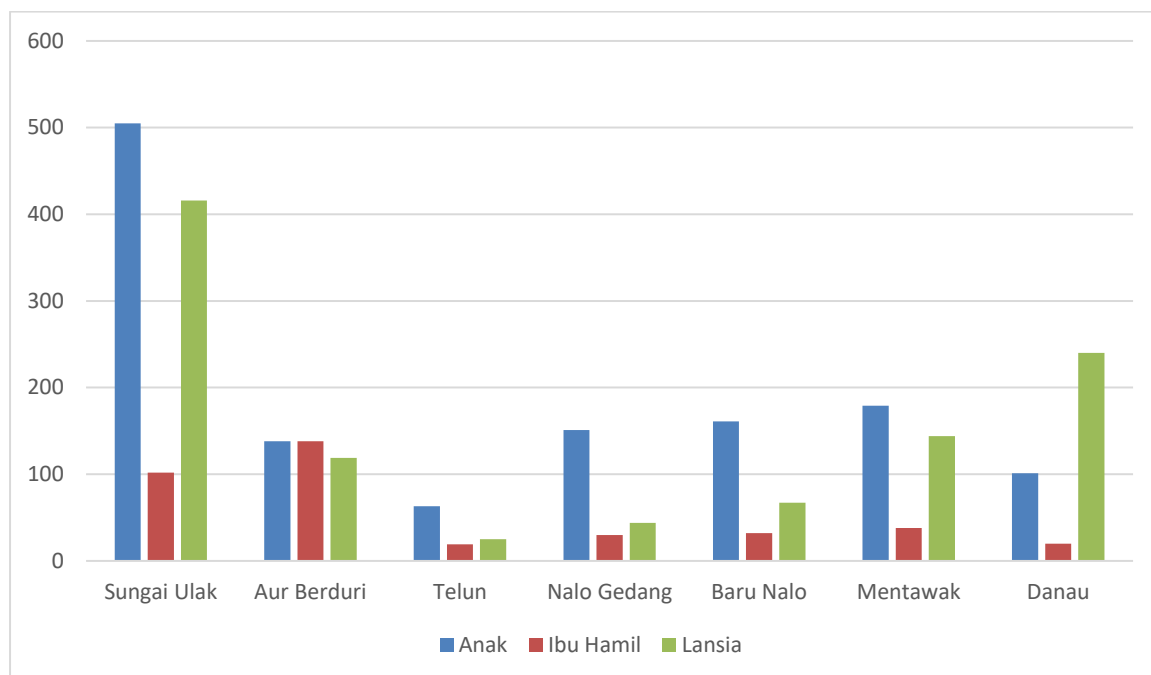


Figure 1. Results of Analysis of Vulnerable Groups in Nalo Tantan District

Based on the results of the research and discussion above, it was found that the distribution of vulnerable groups includes children under five, pregnant women and the elderly in Nalo Tantan District. The highest number of vulnerable groups is in Sungai Ulak village and the lowest number is in Telun village. The percentage results can be seen in table 1.

Table 1. Results of Analysis of Vulnerable Groups in Nalo Tantan District

Village/Subdistrict	Resident	Vulnerable Groups			Amount	Percentage
		Child	Pregnant mother	Elderly		
Ulak River	8257	505	102	416	1023	12%
Thorny Aur	1233	138	138	119	395	32%
Telun	765	63	19	25	107	14%
Nalo Gedang	1525	151	30	44	225	15%
New Nalo	1661	161	32	67	260	16%
Mentawak	2350	179	38	144	361	15%
Lake	1197	101	20	240	361	30%

The percentage results from the analysis of the distribution of vulnerable groups in Nalo Tantan District are, in Sungai Ulak village there are 1023 with a vulnerability percentage of 12% , in Aur Berduri village there are 395 with a vulnerability percentage of 32% , in Telun village there are 107 with a vulnerability percentage of 14% , in the village There are 225 Nalo Gedang with

a vulnerability percentage of 15% , in Baru Nalo village there are 260 with a vulnerability percentage of 16% , in Mentawak village there are 361 with a vulnerability percentage of 15% , and in Danau village there are 361 with a vulnerability percentage of 30% .

## CONCLUSIONS AND RECOMMENDATIONS

### CONCLUSION

Based on the results of the research and discussions that have been carried out, it can be concluded that the distribution of the number of vulnerable groups of children under five in Nalo Tantan District is spread across several villages with the highest number in Sungai Ulak village being 505 children under five, and the lowest being in Telun village being 63 children under five. The distribution of the number of vulnerable groups among pregnant women in Nalo Tantan District is spread across several villages with the highest number in Aurduri village with 138 pregnant women, and the lowest in Telun village with 19 pregnant women. The distribution of the number of vulnerable groups among the elderly in Nalo Tantan District is spread across several villages with the highest number in Sungai Ulak village as many as 416 elderly, and the lowest in Telun village with 25 elderly. There are 2 villages in Nalo Tantan District which have the highest number of vulnerable groups among other villages, namely Sungai Ulak village with 1023 vulnerable groups, and Aur Berduri village with 395 vulnerable groups.

### SUGGESTION

Research is needed with the same variables in order to add several other aspects such as aspects of diseases that are likely to arise as well as efforts to overcome vulnerable groups, and create a map of the distribution of vulnerable groups in Nalo Tantan District as an addition to population coverage with vulnerable groups by health centers).

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