THE ROLE OF WOMEN IN THE MANAGEMENT OF FLOOD DISASTERS IN BIMA DISTRICT, NUSA TENGGARA BARAT

N Sopiawati and Hatuti
Departement of Geography, Postgraduate Program.
Yogyakarta State University, Indonesia

E-mail: nurlianasopiawati.2017@student.uny.ac.id; Hastuti@uny.ac.id

Abstract. Indonesia is located on the equatorial line result has a tropical climate so prone to hydrometeorological disasters such as landslides, floods, droughts. Disaster must be balanced with a good disaster management so that the Indonesian people are ready to face the incident when a disaster occurs. Disaster management must be implemented by all Indonesian people both women and men without having to distinguish gender. Bima, West Nusa Tenggara is one of the areas that have implemented gender responsive responses. Area of Bima Regency mostly (70%) is a highland textured mountains so prone to landslides and flash floods because it is in the hills. Disasters require sensitivity and involvement of all sections of society, including women. This research method is descriptive qualitative with CVA gender analysis (Capacities and Vulnerabilities Analysis). The purpose of this study is to examine the participation of women in disaster management such as women participation in Kelompok Siaga Bencana (KSB) and Women Champion Groups in their participation in the event of a disaster. The involvement has not been comprehensive and there are still many women who have not participated due to gender inequality. Women participation is at least sufficient to demonstrate that women have a capacity for disaster management.

1. Introduction

Indonesia is a country located between the confluence of three tectonic plates of the world. Indonesia has many active volcanoes that make the country's land fertile. The country is abundant with natural resources that can be used to meet the needs of the population. Indonesia's archipelago region is also a distinct advantage because it has a vast sea area. The vast sea area and the presence of three plate meetings also resulted in Indonesia having a diverse marine biota. On the other hand Indonesia's geographical conditions also contain their own dangers [1].

Indonesia's geographical condition makes this country has a high level of vulnerability to disasters due to the existence of three highly active plates. Plate collision led to the formation of subduction zone which is the path of the earthquake and forming the undulation in the archipelago with a steep slope and very steep. The territory of Indonesia is also located in the tropics with high rainfall and varying topography. With such conditions, Indonesia is not inevitable from disasters such as floods, landslides, earthquakes, tsunamis and volcanic eruptions [1].

Many disasters have made it clear that disaster risk reduction efforts are important. Many people recognize the importance of disaster risk reduction from the late 1990s by incorporating natural disaster risk considerations into a medium-term strategic framework and state and sectoral institutional
structures, policies and strategies as well as project design in hazard-prone countries (IFRC, World Disasters Repor, 2011).

The challenges of Indonesian women today are even more severe because of the double burden. Women, especially those who are married, have a responsibility in fostering families, especially in educating their children, because women can be referred to as the front guard in the generation of the next generation of people who can determine the direction of future progress. Indonesian women must have a mature and wise mindset to answer these challenges. Education is an important factor that must be possessed as capital in increasing self capacity (Wwik Puji, 2018). Women are one of the most vulnerable to flood and other disasters. According to [2], vulnerability is a potential for damage or loss associated with the capacity to anticipate a hazard, overcome hazards, prevent harm and recover from the effects of hazards. Women have an important position in family and society, but women have limitations. Women are included in vulnerable groups in disaster and women are more likely to be victims in the event of a disaster, especially the flood disaster. The important position of women with their vulnerabilities will make the risk of disaster difficult to suppress so that women need to be given the effort of increasing capacity to offset the inherent vulnerability of women, as in the following disaster formula:

![Figure 1. Disaster Risk Formula](Source: Hadi, 2008)

The disaster management paradigm has changed now not only the government, but the community also needs to participate in disaster management. The community is made up of men and women so they must participate as well regardless of gender status. Women should also have the ability and be given freedom in obtaining information and knowledge especially about the disaster, because women are groups that have high levels of vulnerability other than children, the elderly and disabled. Women participation in disaster management regardless of gender status is also regulated in [3] on disaster management that establishes the principle of equality in law and government [4]. By establishing good gender relations it is possible to have a very significant impact on daily life between men and women, both in mitigation before, when, and after the disaster [5]. Good gender relations can provide benefits of helping in disaster management systems.

Landslides and flash floods in Bima, that often occur made people should always be vigilant and have good coordination in handling disasters. Therefore, Kabupaten Bima have KSB teams (Kampung Siaga Bencana) and Women Champion Groups in their participation during the disaster. In the KSB team (Kampung Siaga Bencana) in the organizational structure not only men are involved but women too. Women in Bima are involved in disaster management because there are activities that do require the role of women in it. The participation of women in the KSB team opens women's opportunities in obtaining information and training on disasters that keep them on alert for the occurrence of disasters.

2. Methodology

This research is a qualitative descriptive method with CVA gender analysis (Capacities and Vulnerabilities Analysis). Samples were selected by snowball sampling. Data collection using observation technique and in depth interview. Key informant in this housewife, miss urban village
head, women organization research is This study aims to analyze the participation of women in disaster management in Kabupaten Bima, West Nusa Tenggara.

3. Results and discussion

Bima, which is part of the NTB, located at the eastern end of the province of NTB. The total area of Kabupaten Bima is 4,374.65 km², consisting of 315.96 km² or 7.22 percent of paddy fields and 4,058.69 square kilometers or 92.78 percent of non-rice fields. Area of this wetland increased as much as 8.53 km² when compared to the year 2008 that the extent of 307,43 km². The increase of this area is due to the decrease of forest area, both state forest and community forest area. Bima Regency has 18 sub-districts where 15 sub-districts are affected by flash floods.

The flood disaster that happened in Kota Bima, Nusa Tenggara Barat, occurred twice, on December 21-23, 2016. The second flood occurred more severely and the damage included 1,439 buildings, including: houses, offices, schools, health centers, business places / shops / kiosks, bridges and dams, as well as agricultural land covering an area of 2,247 hectares of rice fields. The total loss is estimated at ± Rp. 984.40 billion. Flood disaster in Bima is influenced by several factors including:

1. Bima which is mostly mountainous or highland, is at the edge of Bima Bay and the river mouth of Padolo and has hinterland of hills.
2. Very high rainfall, and long enough (12 hour) is triggered by the tropical cyclone Yvette.
3. Forest damage in the upstream area (Kec. Asakota Kota Bima dan Kec. Wawo Kabupaten Bima) due to frequent illegal logging, the establishment of forest status into Hutan Kemasyarakatan (HKm) without clear direction and strict supervision, opening new roads to hilly areas that accelerate logging of forests and plants and settlements.
4. The territorial boundary between Kota Bima and Kabupaten Bima which is unclear / certainly causes unclear supervision authority in the border area between the two regions
5. The drainage system has not been well developed, where there is no connectivity between channels from upstream to downstream and the dimensions of the drainage channel are mostly inadequate (too small).
Several steps to prevent flash floods in Bima are carried out by BNPT, BPBD:
1. Short-term prevention: normalization of rivers, reforestation
2. Medium-term prevention: delineate local regulations so that people do not build in areas that are not appropriate
3. Long-term prevention is carried out by mapping disaster-prone areas in NTB to anticipate future disasters.

Data obtained in the form of data of knowledge, attitude and preparedness of woman in facing flood disaster in area prone to flood disaster of Kabupaten Bima. Data were obtained from a validated questionnaire instrument. Validation of instruments assessed by experts and declared eligible with the suggestion of improvement by changing the writing of the instrument so that more easily understood by all women in terms of age and education [6].

Kampung Siaga Bencana and Kelompok Perempuan Tangguh is expected to have a positive impact on society in general. The community is expected to be independent in disaster management, the presence of the KSB is expected not to be a passive group but to become an active group in community activities, not only in the prevention activities but also other active social activities. Disaster alert villages that exist in several places can make disaster management effective in Bima or other districts in NTB.

THE ROLE OF WOMEN IN REDUCING DISASTER RISK
Women have a strategic role in dealing with disasters through improving the role of women in disaster mitigation [7]. To improve the ability of women in disaster risk reduction can be achieved by improving:
1. Women awareness in understanding the environmental situation and the threat of danger
2. Understanding of vulnerability and ability to measure women capacity
3. Ability to assess the risks facing women as individuals, family members and communities
4. Ability to plan and take action to mitigate risks, both through capacity building and reducing vulnerability
5. A woman ability to monitor, evaluate and ensure the sustainability of risk reduction so that the impact of disasters can be reduced or prevented

The impact of disasters that hit a region has different characteristics depending on the level of readiness, resilience, and capacity for recovery. Vulnerability after a disaster can be prolonged if there is no serious post-disaster handling. Disaster often wipes out hope and the future because of the loss of life, the loss of property, the disappearance of the source of income, and the destruction of the social system in society. When disaster strikes a region, the impacts may vary, including social vulnerability, declining welfare, threats to livelihoods and food security, loss of self-protection, loss of social protection, declining health levels, loss of property, social and institutional network chaos (Omar D. Cardona, 2011). This condition will only be handled properly if there is community preparedness to face disaster. An integrated disaster rescue strategy can be seen in Figure 2 below:

![Disaster Rescue Strategy With an Integrated Framework](image)

**Figure 3. Disaster Rescue Strategy With an Integrated Framework [8]**

**THE ROLE OF WOMEN IN THE EMERGENCY RESPONSE PHASE**

Bima was hit by flash floods which affected physical and socio-economic aspects on December 21-22, 2016. The role of women in the emergency response phase has almost the same amount, in the process of saving themselves. In-depth interview data revealed that half of women encouraged families to flee to their relatives, because they were considered more comfortable. The role of women in disaster emergency response is shown in Figure 2.
Figure 4: The Role of Women in Emergency Response in Bima
(Analisis Data Primer, 2017)

Women are still considered to be at high risk during disasters or even considered vulnerable groups, so that the access that women have is limited (Reyes & Lu, 2016).

CVA ANALYSIS FOR WOMEN VULNERABLE TO LANDSLIDE

A CVA analysis (Capacities and Vulnerabilities Analysis) is a gender analysis developed to determine the level of capacity and vulnerability of women and children in crisis or disaster situations [9]. Vulnerability in this analysis includes long-term factors that not only occur pre, during, and after disasters but also other things that are harmful to women. There is a CVA analysis matrix for women susceptible to flash floods and landslide disasters such as in Kabupaten Bima, shown in Table 1

| Vulnerability | Capacity |
|---------------|----------|
| Physical/ material | Women are weaker than men physically so that resistance is quite small as when buried in landslides. If they do not think about the future or their children, they usually have little hope of survival. |
|               | women are endowed with the tenacity in doing any work naturally, so that when their income is lost after the disaster, women will be easy in finding income alternatives such as trading, being a farm worker, etc. |
4. Conclusion and Recommendation

Women role in disaster management efforts in Bima was reflected in women organizations such as the KSB (Kelompok Siaga Bencana) and Kelompok Perempuan Tangguh (Women Champion Groups) in their participation in the event of a disaster. Kabupaten Bima shows participation before (pra), while and after a disaster occurs. The results of the study show that the role of women is quite large as an agent of change in the community in the effort to mitigate disaster risk. They become the initiators / activists in their environment to take action in disaster risk reduction in Indonesia, especially in Bima. They act as inputs to government policies, as facilitators / educators on out-of-school education programs for the community to increase awareness of disaster risk reduction efforts, fund seekers for disaster management activities, medical personnel for emergency response activities and many other roles undertaken. A number of internal challenges will be faced, namely controlling emotions and...
problems of dependence on others. External challenges are the lack of opportunities to increase women capacity as superior human resources in disaster management organizations, and the lack of safety guarantees in working as volunteers. The involvement of women in Bima has not been comprehensive and there are still many other women who have not participated.

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