**THE EFFECTIVENESS OF DISASTER RESILIENT VILLAGE (KATANA) AS AN EARTHQUAKE MITIGATION PROGRAM IN MATARAM CITY**

**WEST NUSA TENGGARA PROVINCE**

**Faradina Selsa Putri**

Mataram City Government West Nusa Tenggara Province

E-mail: pfaradina1010@gmail.com

***ABSTRACT***

*National Disaster Management Board (BNPB) formed a resilient village (katana) at the village in 2013 to improve villagers’ ability to face disasters. In 2014, it was also formed in Mataram City, West Nusa Tenggara Province. When big earthquakes happened in last August of 2018, it affected the village in Mataram City**. This research aims to analyze the effectiveness of the katana program in Mataram City. This study used a qualitative descriptive method with observation, interviews, and documentation in data collection techniques. The selection of informants used purposive sampling and snowball sampling methods. The result of this study shows that the katana program in Mataram City is quite effective but not optimal because of the facilitator’s decrease and the delay in the budget's disbursement. The suggestions to overcome it are the government should increase the facilitator and accelerate the budget disbursement for the katana program’s implementation.*

***Key words;*** *Effectiveness, Earthquake, Society, Disaster Resilient Village (katana)*

INTRODUCTION

Indonesia has a high-level intensity of an earthquake disaster. There are three reasons for it in geography: First the position of Indonesia in the Ring of Fire areas (track). The distance is approximately 40.000 km, with a total of 33 regions currently on it, which from New Zealand to Peru-Trench Chile and Indonesia in 5th areas. Second, the position of Indonesia in Alpine Belt's track (Tiarasari, 2018), 17% of the largest earthquake, or 5%-6% earthquakes happened in this area.

Third, Indonesia is located at three ground plates, namely the Pacific Plate, Eurasia, and Indo-Australia. The movement of them can cause earthquakes, like sliding, breaking, or moving to the top.

Through the National Disaster Management Board (BNPB), the government formed a program called disaster resilient village (katana) as the form of disaster mitigation. Mitigation is a prevention activity before an event happens to reduce death, property, and disease. It also formed based on the mandates of Regulation Number 24 of 2007 about Disaster Management; the government must protect society from the threat of disaster. It relates to the katana program’s goal to create resilience and an independent society in facing disasters.

Regulation of the katana program is The Head of BNPB Regulation Number 1 of 2012 about General Guidelines of Disaster Resilient Village (Katana). It's concerned about the procedures, the goals, strategies, activities, and all matters that relate to the katana program. All of them are explained clearly. The number of katana programs from 2012 to 2018 was 584 villages in Indonesia (Maharani, 2015). This program has been developing to reduce the loss of disaster impact in all around Indonesia. It is used to prepare society when a disaster happens.

West Nusa Tenggara Province (NTB) is one of the provinces that has been implemented this program. The disaster mitigation program in NTB Province began running in 2014 with a total of 41 katanas. The number of katanas increased to 48 in 2015 and increased to 60 in 2016 (Maharani, 2015). Based on The Index of Disaster Risk of Indonesia (IRBI) of 2013, NTB Province includes in one of the highest risks with a score of IRBI 172. The disasters threat in NTB is flood, earthquake, tsunami, abrasion, dryness, landslide, and volcanoes (Sumedi Andono Mulyo, 2016). Rocky and BMKG notes (Nugroho, 2018), mention earthquakes that happened in Lombok and the impacts from the first earthquake till the last earthquake in 2018 ago.

The biggest earthquake in Lombok Island happened in July till August of 2018 ago with 6-7 magnitude. There quite a large impact of the earthquake in Lombok. There are a lot of damaged houses and there are dead people. It means the society and government still lack preparedness to facing the earthquake.

Relates with the changes of index disaster and regional mapping in Mataram City, BPNB, and BPBD of Mataram City established katana program in South Ampenan Village and Jempong Baru Village in 2014. Both areas are coastal villages, therefore, the level of disaster risk is higher compared to other villages in Mataram City. This area is also included in the tsunami red zone and earthquake-prone. The Implementation of the katana program needs facilitators. Facilitators were people who receive training, therefore, they have more knowledge about disaster facilitate the society about disaster management. Based on Head of BNPB regulation number 1 of 2012 about the Guidelines of the katana program, the facilitator consists of 1 person from BPBD province, 1 person from BPBD city, and 30 people from society or disaster communities. They are having experience minimal 2 years in scope disaster management. Katana program was first established in 2014 with 30 people as facilitators in South Ampenan Village and Jempong Baru Village, Mataram City (Sumedi Andono Mulyo, 2016).

The facilitator used facilities and infrastructure in the Implementation of the katana program in South Ampenan Village and Jempong Baru Village. It used to give training about it works for society when the disaster happened like abrasion, earthquake, and tsunami. Examples of it are signposts of evacuation routes, evacuation routes, tsunami warning sirens, grip, etc. Unfortunately, their condition is not feasible anymore. For example, the signposts to the evacuation track or the safe area cannot read anymore or has been broken. It influences the response of society in dealing with a disaster.

Associated with disasters that happened in NTB Province, disaster mitigation is still low in the form of facilities and infrastructure. It was recognized by the Head of BPBD of NTB Province, H. Muhammad Rum (Lombokpost, 2019), that NTB Province does not yet carry out the structural mitigation efforts properly. During this time, disaster management just focused on the emergency response stage. It relates to the budget in supporting that stage, which is minimized for other stages. It happened due to the lack of government planning in disaster management, which they active after disasters occurred.

Government planning in disaster management has an important role, that provides an overview of a precautionary measure before a disaster happens. It also relates to the budget of the program, which difficult and still lacks for Implementation of the katana program.

Based on the description above, the research needs to know how far the effectiveness of the Katana Program for society by the government (BPBD of Mataram City) and facilitators as a mitigation program. This research also can find the obstacles and supporting factors that faced in implementing katana as an earthquake mitigation program in Mataram City, and also the efforts made by the local government to overcome the obstacles that faced.

**METHOD**

This research used a descriptive qualitative method. Relate to that, the researcher participates directly in research activities to observe, analyze, record, and describe the katana program in Mataram City. The process to conclude them is collecting data, managing data, and analyzing data based on facts in the site with a description from a specific statement to the general statement about the katana program. It also completes the arguments and facts related to the relevant theory used in the concept. This research used theory Duncan in Steers (1985) to measure the effectiveness of the katana program in Mataram City. It consists of three dimensions with seven indicators. These three dimensions are goal achievement, integration, and adaptation. Those seven indicators are period of achievement, target, legal basis, procedure, socialization, facilities and infrastructure, and raising of ability.

In collecting data, the researcher used purposive sampling to get information about the katana program. The researcher took some samples and asked some questions about the katana program in purposive sampling. The samples in purposive sampling are head of BPBD Mataram City, head of mitigation and preparedness division, head of sub-districts, head of villages, head of the katana program in villages, facilitators, and society.

Overall, the researcher collected data through interviews, observation, and documentation. The researcher used semi-structured and unstructured interview techniques in this research. In analyzed data, the researcher used step by Berg (2001), which consist of reducing data, display data, and conclusion drawing.

In this research, the researcher reduced the data to make it more focused, and simply by summarizing all data related to the katana program in Mataram City. It will be recording all of the important information carefully based on the fact in the site research. The last step is the data presents in a short description and the researcher concluded on the indicators or factors that examined the effectiveness of katana as an earthquake mitigation program in Mataram City, West Nusa Tenggara Province.

**RESULTS AND DISCUSSION**

Based on interviews and observations conducted by researchers, 9 indicators of the katana program in BNPB Regulation No. 1 of 2012 became the basis for the formation and Implementation of katana program activities. Those indicators have different levels of difficulty, but the government leveled the time of its achievement. The government gives the target to finished it in 72 weeks.

The Implementation of the indicators in the two villages had different times of achievement. The period in indicators achievement of the katana program in South Ampenan Village is longer than in Jempong Baru Village, which is 52 weeks and 48 weeks.

The number of facilitators was list in Perka BNPB number 1 of 2012 and a decision letter had been made by the head of the BPBD Mataram City. It is about 30 people. The number of facilitators in South Ampenan Village reduced to 25 people. the performance of the katana program is also a decrease in South Ampenan Village.

The government does not estimate the process of the katanas program's budget disbursement. It becomes an obstacle factor in the Implementation of the katana program. The Implementation of the katana program was postponed for a while. The budget is needed for financing the additional tools and salary for the facilitator in the Implementation of the katana program.

The main target of the katana program is villagers in disaster-prone areas, which have a higher risk of being affected than other areas. Indirectly, other targets are government and community. Society obtained positive impacts on the Implementation of the katana program. Their ability and knowledge are increasing about the disaster, which accordance with the goals of the katana program. It assessed in disaster scenarios training from their response that can describe their response in facing disaster.

Besides it, based on the data of Mataram City BPBD, there is no death of victims due to the last earthquake in August 2018 in the South Ampenan Village and Jempong Baru Village. It just caused society injured and some facilities and infrastructures broken. It means the ability of society is increasing in facing a disaster.

The parties require clear procedures in the Implementation of the katana program. It consists of procedures for implementing activities and cooperation procedures. The government and facilitator use the instructions in Regulation of head (Perka) of BNPB number 1 of 2012 about disaster resilient village (katana) and sop earthquake and tsunami in the Implementation of the katana program. the government of Mataram City decides to did not make other sop and just use the existing sop from BNPB. It proves that the procedure is sufficient to be the basis in the Implementation of katana program activities. Both procedures guide the facilitator in the villages. The village government and facilitator were modifying and combining it according to the condition in the Implementation of the katana program. Examples of third parties are OXFAM, US AID, UN, AUS AID, and Islamic Relief Community.

Socialization is an important activity in the Implementation of the katana program. It is related to two topics, namely the socialization of the katana program and disasters. it socialized to the stakeholders in the Mataram City Government. After it, the village government socialized the katana program to the villager. In other words, the coordination between those parties is carried out carefully in the planning and dissemination of socialization.

The district government and village government socialized the katana program to the villager, which reported to the Mataram City BPBD. The village government and facilitators carry out socialization to achieve the goal of the katana program. It was carried out after an agreement was made between the district government and the village government. It aims to introduce the katana program to the society of South Ampenan Village. They seem enthusiastic about this program.

The government district was enthusiastic and support this program. The district government and village government coordinated synergistically without preceding each other about the socialization of the katana program. Both districts and villages share information. In the katana program, socialization continues at least once a month, which is carried out in the village office or the open field as a simulation. Based on interviews with several informants above, the researcher concluded that the socialization of the katana program was going well and effectively.

Facilities relate to equipment, while infrastructures relate to building structures or public facilities. Based on observation, the researcher concludes that the facilities and infrastructure were still minimal before the establishment of the katana program in South Ampenan Village and Jempong Baru Village. The government provided it in the forms of evacuation route signs installed along the road leading to the gathering point, evacuation tents, and tools for the public kitchen. After the establishment of the katana program, facilities and infrastructure have increased and improved gradually, such as emergency tents, inflatable boats, tarpaulins, evacuation route signposts, early warning sirens, and an earthquake-resistant house. The government is checking the facilities and infrastructure of tsunami early warning sirens every month on the 26th. Not only that but the government also gradually builds an earthquake-resistant house. Its model is an earthquake-resistant government program. It model has been implemented in some of society's house. This house model is one of the efforts by the government to reduce the impact of an earthquake disaster.

The impact of the Implementation of the katana program is increasing the preparedness and awareness of society about the dangers of disasters and the importance of maintaining the facilities and infrastructure. Based on the results of the interview, the researcher assessed the ability of society has been increasing. It also relates to the response of society when the socialization of programs, which are enthusiastic and active in the Implementation of the katana program. It affects the process of society in attending the Implementation of the katana program.

Society will seriously and easily in understanding the material in the Implementation of the katana program. Automatically, their knowledge is also raising. after the Implementation of the program katana, the ability of society is raising. Although the activities of the katana program have finished, facilitators and the government were kept on giving training to society. Not only the society, but the ability of the facilitators are also raised. The knowledge of the facilitators was better in assisting the society to increase their preparedness in facing disasters, especially the earthquake and tsunami.

**CONCLUSION**

Based on the explanation of the research result and discussion about the effectiveness of katana as an earthquake mitigation program in Mataram City, then the researcher concluded as below:

1. Katana as an earthquake disaster mitigation program in Mataram City has already run quite effective but still not optimal. It is proven by the response of society in facing the last disaster in Lombok Island. Nevertheless, It needs some improvement, such as increasing the number of facilitators and the budget.
2. To be effective, katana as an earthquake mitigation program in Mataram City has several supporting factors, as below:
3. The number of human resources affects performance in the Implementation of the katana program. It is seen from the difference in the number of facilitators and the period of goals achieved in the implementation katana program in South Ampenan Village and Jempong Baru Village. In South Ampenan Village, there are 25 facilitators, which can achieve the goals in 52 weeks. Meanwhile, in Jempong Baru Village, there are 30 facilitators, which can achieve the goals in 48 weeks.
4. The good cooperation between the government, the government with the community, and the government with third parties can accelerate the achievement of the katana program's goals. The examples of cooperation between a government with third parties are OXFAM, US AID, UN, AUS AID, other disaster organizations, and other relations. They helped the government in the Implementation of the katana program. For example, they gave facilities and infrastructure for society in facing disaster.
5. Facilitators get training by BNPB and BPBD of NTB Province. It aims to give knowledge and material about disasters and the katana program, therefore, the facilitator can train well the society.

Besides the supporting factors, there are several obstacles, as below:

1. There are no clear schedule activities in the Implementation of the katana program. The government only gave a maximal period in achieving the indicators of the katana program. The Implementation of katana program activities is held based on the policies of each government of villages, therefore, there is a difference between each village about it.
2. In Perka BPB number 1 of 2012, the quantity of facilitators is 30 people, but it reduced from 30 people to 25 people in South Ampenan Village. It influences the Implementation of program katana, which there different in the period of goals achievement between South Ampenan Village and Jempong Baru Village. In South Ampenan Village, it reached in 52 weeks, while In Jempong Baru Village, it reached in 48 weeks.
3. The budget (funds) was delay and deficit for the Implementation of the katana program. The budget from Mataram City Government was a delay in distribution and difficult to access. Therefore, the BPBD of Mataram City, district government, village government were looking for the budget independently to other third parties.
4. The awareness of society lacked in maintenances of the facilities and infrastructure given by the government. It proved from the condition of facilities and infrastructure, which most of it was broken.
5. The efforts made to overcome the obstacles that occur in the Implementation of the katana program, as below:
   * + 1. BPBD of Mataram City recruited facilitators and other elements to improve the quality of the katana program's Implementation. They advised BPBD of Mataram City to make a clear schedule of activities in the Implementation of the katana program, therefore, can implement the katana program structurally.
       2. BPBD of Mataram City made a schedule in controlling the Implementation of the katana program and the facilities and infrastructure. It was created to overcome the lack of awareness of the society about the katana program and maintain the facilities and infrastructure.
       3. The Ampenan District Government and The Sekarbela District Government approached the society, who still lack awareness about the katana program and how to maintain facilities to facing disaster. It is held to increase awareness of the community about the katana program and facilities and infrastructure.
       4. BPBD of Mataram City, The South Ampenan Village Government, The Jempong Baru Village Government held socialization about the disaster and the katana program gradually. It is held to increase the understanding of society about the importance of the katana program and preparedness for disaster.
       5. The Government of South Ampenan Village made a schedule and gave sanction to controlling the facilities and infrastructure. It is held to maintain the facilities and infrastructure given by the government and to increase awareness of the society about facilities and infrastructure.

**REFERENCES**

Aini, Nur, Irma Fitriana Ulfah, and Laode Machdani Afala, ‘Efektivitas Program Desa Tangguh Bencana Di Desa Sirnoboyo Kecamatan Pacitan Kabupaten Pacitan Tahun 2017’, 03.2 (2017), 50–61.

Anggito, Albi, and Johan Setiawan, *Metodologi Penelitian Kualitatif*, ed. by Ella Deffi Lestari, 1st edn, CV Jejak, 2018.

Berg, Bruce L., *Qualitative Research Methods for The Social Sciences*, USA: Pearson Education, 2001.

CHANDRASEKAR, V., Haonan CHEN, and Brenda PHILIPS, 'Principles of High-Resolution Radar Network for Hazard Mitigation and Disaster Management in an Urban Environment', *Journal of the Meteorological Society of Japan. Ser. II*, 2018.

Creswell, John W., *Research Design: Pendekatan Metode Kualitatif, Kuantitatif, dan Campuran*, *SAGE Publication*, 2016.

Gougelet, Robert M., '*Disaster Mitigation,'* in *Ciottone's Disaster Medicine*, 2015, pp. 160–166.

Kothari, C. R., *Research Methodology: Methods and Techniques*, New Delhi: New Age International (P) Ltd, 2004.

Labolo, Muhadam, *Memperkuat Pemerintahan Mencegah Negara Gagal;Sebuah Ikhtiar Mewujudkan Good Governance Dan Negara Kesejahteraan*, Jakarta: Kubah Ilmu, 2012.

Law Number 23 of 2014 about Local Government

Law Number 24 of 2007 about Disaster Management

Local Government Regulation of West Nusa Tenggara (NTB) Province Number 9 of 2014 about Disaster Risk Reduction

Local Government Regulation of Mataram City Regency Number 4 of 2015 about Regional Disaster Management

Maharani, Esthi, ‘NTB Bentuk 60 Desa Tangguh Bencana’, 2015 <https://www.republika.co.id/berita/nasional/daerah/15/03/20/nlid80-ntb-bentuk-60-desa-tangguh-bencana> [accessed on October 10, 2019]

Moleong, Lexy J., '*Metodologi Penelitian Kualitatif (Edisi Revisi)*', in *PT. Remaja Rosda Karya*, 2017.

Neuman, W.L., *Social Research Methods: Qualitative and Quantitative Approaches*, (7Th, International Ed.), 2014.

Nugroho, Bagus Prihantoro, ‘Sederet Gempa Dan Tsunami Yang Pernah Guncang NTB’, 2018 <https://news.detik.com/berita/d-4152068/sederet-gempa-dan-tsunami-yang-pernah-guncang-ntb> [accessed on October 14, 2019]

PRB, Direktorat, and BNPB, *Penilaian Indeks Ketahanan Daerah (IKD) Dan Indeks Risiko Bencana Indonesia (IRBI)*, 2018 <https://bpbd.acehprov.go.id/uploads/Penilaian\_IKD\_dan\_IRBI.pdf>

Putri, Gloria Setyvani, ‘BMKG : Lombok Memang Rawan Gempa’, *Kompas*, 2018 <sains.kompas.com/read/2018/07/30/180100423/bmkg-lombok-memang-rawan-gempa> [accessed on October 14, 2019]

Redaksi, LombokPost, ‘Jangan Pernah Lengah, Bumi Gora Masih Rawan Bencana’, 2019 <https://www.lombokpost.net/2019/01/02/jangan-pernah-lengah-bumi-gora-masih-rawan-bencana> [accessed on October 14, 2019]

Regulation of the Head of the National Disaster Management Agency (BNPB) Number 1 of 2012 about General Guidelines for Disaster Resilient Villages (KATANA).

Steers, Richard M., *Efektivitas Organisasi*,Jakarta: Erlangga, 1985.

Sumedi Andono Mulyo, *Koordinasi Strategis Perencanaan Pelaksanaan Pengurangan Indeks Risiko Bencana Untuk Mendukung UU No. 24 Tahun 2007*, 2016 .

Sunarjo, & Friends. Gempabumi Edisi Populer. *Official BMKG.* (2012).

Tiarasari, Rizkianingtyas, ‘7 Faktor Alam Yang Sebabkan Indonesia Rawan Gempa Bumi’, 2018 <www.tribunnews.com/travel/2018/10/11/7-faktor-alam-yang-sebabkan-indonesia-rawan-gempa-bumi> [accessed on October 13, 2019].