



Community Preparation in Tangse District in Flash Flood Disaster Mitigation

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Abstract

This study aims to determine the Tangse community preparedness in mitigation of flood disasters. The research design used in this study is a qualitative research design. Data analysis is performed using three activities that occur simultaneously, namely data reduction, data presentation, and drawing conclusions or verification, or can also use words to describe facts and observed phenomena. Based on the results of research and discussion, it can be concluded that in terms of the knowledge and attitude of the Tangse community it is already good where the community already knows the signs of flash floods and the environment is vulnerable to disasters. But it is still very lacking in terms of regulations and policies. Regulations that have not been implemented properly, as well as sanctions for illegal loggers involving law enforcement officials.

Keywords: *Community; Flash Flood; Preparation; Tangse District*

Introduction

Tangse is one of the areas in the Krueng Meuriam watershed which flows into Geumpang where the river flows into agricultural land and community settlements. Flash floods that occur in Tangse are caused by rainfall and are high. Another contributing factor is logging along the Tangse and Geumpang forests. As a result of the felling of these trees there are no more large trees that absorb ground water, so that there will be erosion of the soil if there is heavy rain and will cause flash floods. Forests are the source of human life. By preserving the forest it will preserve life around it. Another reason is because of the desire or demands of the farming community to transfer land functions that occur in hilly or mountainous areas. The clearing of forest land for residential and agricultural land on mountain slopes, and due to human activity errors on steep mountain slopes is the impact that causes flash floods (Dahroni and Subandi, 2017: 2).

The flash floods that struck Tangse District in 1976 devastated Tangse District which caused most of Beungga settlement, Titeu Keumala District and 5 surrounding sub-districts to be submerged by floods, a number of people died and destroyed various public facilities. Flash floods hit Tangse sub-

district again on Thursday 10 March 2011 at 18:30 West Indonesia Time, damaging 9 villages . Flash floods hit Tangse again on Saturday, February 25, 2016, this time it hit the Beungga residential area that submerged 7 (seven) villages. The flash floods that hit Tangse District caused the Mane and Geumpang transportation routes to be cut off. Therefore, it is undeniable that the disaster will occur due to the severe damage to the forest caused by illegal logging activities and the opening of new land in the Tangse mountains. Flash flood is a flow with sediment transport that is collective or mass that has a very high concentration, sliding down through the slope and bottom of the river channel or high tilted valley so that the flow speed is also very fast by carrying large rocks and tree trunks. This flow has a very high destructive power on human life, infrastructure and facilities through, (Haryono, 2007).

Based on repeated experiences of flash floods experienced by people in Tangse District, causing significant losses due to Tangse flash floods. This is due to the lack of preparedness of the Tangse community in dealing with the Banjir Bandang. Disaster mitigation is an appropriate planning effort to minimize the negative impact of disasters on humans (Suparmini, 2014). The role of mukim government is more dominant for mitigation of banjir bandang disasters. To minimize the occurrence of casualties or property, it is necessary for people who are prepared to be prepared for potential disasters in disaster-prone areas, especially flash floods. In order to minimize large losses due to the threat of flooding, it is expected that the role of the community, village government and mukim government in disaster mitigation. The function of village government is to maintain the security and preservation of the surrounding community (Dahroni and Subandi, 2017).

The role of the gampong government in building the resilience of the gampong in dealing with disasters is very necessary because community preparedness is the initial stage that must be undertaken to reduce the risk of disaster. The readiness of people at all levels to recognize the threats that surround them is a way to deal with disasters. The magnitude of the impact caused the Tangse community to prioritize actions to strengthen preparedness for banjir bandang disasters that could occur at any time. With high community preparedness, it will reduce the risk of disasters (Setiyono, 2014).

Method

The research design used in this study is an inductive qualitative research design that is a research design organized in order to provide a systematic description of scientific information coming from the subject and object of research. While the method that the writer uses in this descriptive research is to directly examine the spaciousness of the study, to assess the preparedness of Tangse residents in banjir bandang disaster mitigation . The sample in this study amounted to 24 people from 14 communities ter d envy 2 people in each village, two people head habitation, one person from BPBDs and seven heads of village worst affected by flash floods Tangse. This research was conducted from April 25 to June 10 , 2018 in the Tangse Population which consisted of seven villages that were worst affected by flash floods in Tangse District, Pidie Regency, Aceh Province . Data sources are divided into two, namely primary data and secondary data. Primary data were obtained from field research through observation and interviews. Secondary data from literature studies conducted on many books and obtained based on records relating to research . The data collected was analyzed descriptively qualitatively . Data analysis is performed using three activities that occur simultaneously, namely data reduction, data presentation, and drawing conclusions or verification, or can also use words to describe facts and observed phenomena.

Results and Discussion

This section outlines several sections related to the results of research that have been obtained about the preparedness of the Tangse community in the mitigation of banjir bandang disasters. The results

of this study will be presented based on data found in the field in accordance with the problems and objectives of the study, the data from this study were obtained by researchers, namely interviews, observation and documentation. This study aims to assess the Tangse community's preparedness in banjir bandang disaster mitigation. The data obtained by researchers were then analyzed by quantitative descriptive.

Flash flood is a type of flood that comes suddenly and occurs due to rising river water levels quickly due to heavy rains (Mulyani, 2014). The process of flooding according to some Tangse people namely Peunalom Sa, Peunalom Dua and Layyan Gampong communities that occurred on Thursday, March 10, 2011 was "before the flash floods occurred Tangse rain fell for four days in a row, and after the evening prayer sounded roaring from the direction of the forest".

Whereas the Beungga residents, Blang Malo Village, Keubon Nilam Village and Pulo Kawa Village explained that the flash flood incident on Saturday, February 25, 2016 began with heavy rain for 4 hours and water delivery from Tangse Mountain, so that the land or land was unable to accommodate the discharge of flash floods on Saturday, February 25, 2016. water that has been so much that landslides and carried into rivers, and a 15 minute interval the river water overflows at high speed, rumbling, the flow of water is getting bigger and bigger accompanied by several materials such as: mud, rocks, and timber".

This is in accordance with the opinion of Haryono (2007) who explains that flash flood is a flow with sediment transport which is collective or mass that has a very high concentration, sliding down through the slope and bottom of the river channel or high tilted valley so that the flow velocity is also very fast by carrying large stones and tree trunks. This flow has a very high destructive power to human life, infrastructure and facilities that are affected.

The results of interviews with village geshik and people in Tangse in Layyan village are "flash floods occur because of the calamity and reprimand from God so that they no longer damage nature. Meanwhile, according to the community, "flash floods occur because of the anger of the large dragon that inhabits the headwaters of the river because it has disturbed his residence. Some people also added that they knew Tangse was an area prone to flash floods."

This is in accordance with the first parameter formulated by LIPI-UNESCO/ UNSDR (2006), namely knowledge and attitudes consisting of four variables, namely: a) understanding of natural disasters, where the community already understands the signs of a banjir bandang disaster. b) Understanding of environmental vulnerability, the community also knows that the Tangse area is an area that is vulnerable to the risk of flash flood disasters, due to hereditary land ownership and the difficulty of obtaining land far from the hills; c) An understanding of the vulnerability of physical buildings and critical facilities for disaster emergencies, where some Tangse houses are still on stilts. d) Attitudes and concerns about disaster risk, where the Tangse community knows the risk of banjir bandang, with replanting is one of the concerns of the community.

Geushik Gampong, a community from Rantou Panyang Village, explained the signs before the flash floods: "Three days before the flash floods occurred in the afternoon, a group of small yellowish-green butterflies from the direction of the hill valley directly behind my house traced the edge three consecutive rivers and on the fourth day it rained very heavily.

While the Layyan village Geushik, Peunalom Sa, Peunalom Dua, explained that the signs before the flash flood occurred first rain fell four days in a row at three o'clock in the afternoon until six o'clock in the afternoon. The rain stopped briefly after that it rained again until sunset. At 7 o'clock after the evening prayer I heard a roar from the valley and the sound of a very loud boom, and I came out I saw the

water coming down from the top of the mountain, the water was full in the river and had started to enter the house of the people with big roots and logs. -great ".

At the time of the roar and the river had overflowed the community had run out of the house looking for a place to shelter precisely in the village hall. This is because experience had ever experienced when the sound of thunder from the mountains *ma syarakat* immediately seek *tem p a t* lebih safe.

Based on the results of interviews with the community and the village *geushik*, and their knowledge and attitude towards the *banjir bandang* disaster is good where the Tangse people already know the signs of a flash flood, and have anticipated that if there is a flood, the community also knows that the area where they live is prone to disaster . So that people look for a place to shelter when the river has started to overflow.

Flash floods that occur in Tangse are caused by natural factors, another factor is natural damage caused by humans. The damage in the Tangse mountains, has been going on since 2004, where many water catchment areas were used as residential areas. This is exacerbated by the rampant felling of trees for new land clearing and illegal mining that occurred in Tangse District by irresponsible elements.

Utama & Naumar (2015) also explained that the factors causing flash floods were triggered by several factors including hydrological factors such as high rainfall intentions, climatological factors, and also geological factors such as landslides and natural containment in the upstream area. Based on the description above it can be concluded that flash flood is a natural phenomenon that occurs very quickly which has a very high destructive power so that it will have an impact on human life both property losses and fatalities.

After the flash floods, the Tangse community together guarded and preserved nature even though there were no written rules set by each village. The results of interviews with the Tangse community that: "written regulations in preserving nature that are applied in the village do not exist but the *geushik* always reminds to always preserve nature, not to disturb nature, because Tangse is an area prone to disasters namely flash floods". This is in accordance with the contents of Aceh Qanun Number 7 of 2016 concerning Aceh forestry article 65 paragraph one, namely the protection of forests and forest areas is an effort to prevent and limit damage to forests, forest areas and forest products caused by human actions, livestock, fires.

Village *geushik* also explained that "there are no written regulations or policies that have been applied to the community in preserving nature in Tangse. But after the flash floods hit Tangse I had been monitoring community activities in the forest area. *Geuchik* urges not to cut wood carelessly but to cut wood with a selective cutting system.

The regulations that are applied to the community in preserving nature in Tangse are still in the discourse, not yet been stated in a written regulation. This is in accordance with the results of interviews with Mukim Layyan and Mukim Beungga as follows: "The rules imposed in the Tangse area in preserving nature which are endorsed by the mukim and gampong level government do not yet exist, but are still in the discourse. The regulations made by all the mukim in Tangse are set forth in an institution, namely the *Rencong* institution which has the aim of preserving nature consisting of village-style people and the Tangse community, but the agency has not been approved by the district government and related agencies.

Mukim Layyan and Mukim Beungga explained that in the past there were traditional regulations or local wisdom imposed by the people of Tangse District, namely the prohibition of cutting down 200 fathoms of wood from the river banks and 50 fathoms of the mountain slopes. According to the

head of Mukim Layan, this prohibition is reflected in past and present customary law made in the draft of the Rencong Institution. So that once upon a time, the elements of adat, elements of religion and community leaders made a draft and a joint agreement related to the prohibition of cutting down trees that originated from the customary law. But the collective agreement initiated by the elements of adat and religious elements was never implemented and the draft they compiled did not get a positive response from the stakeholders. Finally, the rules regarding the prohibition of illegal logging have now been lost.

But the regulation was not heeded by the outside community, because those who came to log the forest were not people from Tangse but from outside Tangse who came secretly to plunder forests in the Tangse region. But *geshik gampik* always urges to preserve the environment and be wise to the environment and capture people who clearly damage the forest and report to the village *geushik* if there are outside communities cutting down trees in the Tangse forest ”.

This is in accordance with forest governance regulations which were passed in Aceh Qanun Number 7 of 2016 concerning Aceh forestry, namely the community must maintain and protect Forest Areas from disturbing and unauthorized logging activities. Even the protected forest area in Tangse District has also been damaged due to rampant illegal logging. In fact the police have repeatedly arrested a large number of illegal logging trucks carrying illegal logging, but this did not last long. The illegal logging actors were free to roam again. Persons who carry out logging that are reported by the community, *geushik* and *mukim* to the sub-district have never been followed up, this has often been reported by the *geushik* and *mukim* to the sub-district, said several respondents.

The wood was descended from mountainous areas in Tangse, Geumpang and Mane Districts. This means that the surveillance performance of forest rangers in the Tangse mountain region is still low. This regulation at the implementation level is still found weaknesses, especially in terms of enforcement or law enforcement. Logging activities are still ongoing until now and are even supported by "unscrupulous people" who should actively campaign for the dangers of illegal logging for the community. In addition, there are also efforts by the government to prevent disasters, namely by conducting raids on illegal loggers. But according to the testimonies of several respondents, the raids carried out by related parties seemed not serious. Because before the raids were carried out, information related to the points of raids had spread to the community and of course the loggers also knew about it.

The commitment of the government and officials at the level of weak policy implementation then gave birth to the community's negative response to the government related to illegal logging activities that occurred. The participation of the Tangse District community in protecting the forest is in the low category, the prevention of illegal logging is still inadequate due to the absence of a real program and sanctions for the perpetrators of illegal logging in the Tangse District. Not to mention the weak law enforcement which makes illegal logging increasingly rampant. In fact, illegal logging involving law enforcement officials has become a public secret for the Tangse community.

"It is not uncommon for these illegal logging actors to be supported by certain elements so that logging activities run smoothly from the logging process to its distribution" said several respondents. Reports received from the village *geushik* community reported to the sub-district but from the sub-district did not respond and even reports from the community were considered wind and then said *Geushik* in Tangse sub-district.

According to LIPI - UNESCO / ISDR (2006) the second parameter is the policies and guidelines relating to preparedness to anticipate natural disasters. The natural disaster preparedness policy is very important and is a concrete effort to carry out disaster preparedness activities. Policies are expressed in various forms in concrete regulations.

After the flash floods occurred in Tangse District the regulations on protecting the forest at the mukim level were still in the form of discourse and formulation, which was formulated in the Rencong institution consisting of mukim, village geushik and the Tangse community. New forest governance was ratified in Aceh Qanun Number 7 of 2016.

Based on the description above, it can be concluded that policies and regulations relating to preparedness to anticipate natural disasters in the form of flash floods in the form of concrete regulations in managing forests in Tangse District are still very low. This is proven by the rampant illegal logging that is supported by government officials.

Based on the results of interviews with village heads and the community about coordination with residents in dealing with banjir bandang is to help to evacuate to the posts that have been provided. Head of Pidie preparedness also added natural face BPBDs flood directly into the scene and coordinate with the teams already in the field to review the areas hardest hit by flash floods and be koordinasi by geshik village. Together with the community, help evacuate the victims, provide food, improvised medicines before assistance from the sub-district, establish a command post, distribute makeshift groceries, treat injured people and facilitate severely injured victims to be referred to hospitals, and build public kitchens. This is in accordance with the third parameter of LIPI UNESCO / ISDR (2006) which states that an emergency response plan or emergency planning is an important part in a preparedness process, especially related to evacuation, rescue and rescue, so that disaster victims can be minimized.

The flash floods that hit Tangse for the community not only left the victims and their families miserable, but also left questions about who was responsible. The role of the mukim in supporting the creation of a harmonious life with nature is very important. The results of the interviews with the head of the mukim, Layyan and Bengga, are: "The mukim always provides socialization, and approaches to the community to protect the environment and he himself goes down to the field to review locations prone to flooding. Mukim together with the geushik and the community carried out the reforestation movement which had only been running for about two months, and before all the forests could be planted, the community was very enthusiastic about the reforestation program". BPBD does not only coordinate, but the BPBD team in the field provides information in coordination with village officials carried out by the appointed chief of command and forms structures in the field of disaster management and other means by providing a suggestion box in order to know the level of community participation said the respondent.

Results attitudes and public awareness of the risk of catastrophic floods in over correspond opinions of LIPI UNESCO / ISDR (2006) which states that an indicator of public attitudes to disaster that is effort to prevent a disaster, check the environmental conditions may be the cause of the disaster, followed outreach activities and the selection of safe dwellings. For this reason, there is a need for training, simulation and socialization of what to do when hearing warnings, where and how to save yourself in a certain time, according to the location where the community was at the time of the warning (Hidayati, 2008).

In accordance with the results of an interview with BPBD, Mr. Jamaluddin he explained "the socialization of something that must be done but due to budget constraints, the socialization was not fully carried out, the implementation of the socialization was carried out only after the disaster that lasted for six months due to lack of budget".

The results of interviews with village geushik and communities affected by flash floods about the role of village geushik and village officials in supporting the creation of a harmonious life with nature are "Geshik and village officials strongly support the creation of a harmonious life with nature, especially the villages in Tangse are prone to disaster. The community, geushik and village officials always monitor the mountainous area, clean the headwaters of the river, plant trees. In fact, the subdistrict immediately came

to the village to get together with the community to plant trees, and monitor them regularly ". Likewise with the rules in farming and farming carried out by the Tangse community.

The results of interviews with some of the village geushik who were affected by flash floods about the rules that are applied to the community in farming and farming are "fields that have been cleared one hectare each per head, with ownership for generations. While some explained that "forest management becomes a place to farm or farm is within a period of three years for ownership if more than a specified time then the land will become a jungle again".

The Tangse community cultivates and farms only in areas that can be reached within a 2 hour journey. It is different from the area that is used by the community to cut wood that is far from the settlement, the time period taken for one day and one night. Flash floods occur because of the lack of public awareness in preserving nature, because in the Tangse mountain area there are still people who cut wood and in addition there are also those from other areas who bring provisions to cut down wood in the Tangse forest area. Although it has been repeatedly reminded but illegal logging is still carried out clandestinely.

The Tangse community monitors upstream as an effort to prevent or maintain downstream areas in the event of rain. In the village there is also no organization set up to maintain or monitor the headwaters in the Tangse area. But the people who are farming in the upstream area are informants or informers about the situation in the upstream area. If there are obstacles or obstacles, the community works together to clean the upstream area. In addition, the community also monitors the condition of the river flow, if the flow is not smooth and looks slow, and the color of the water is not as usual then the community has confirmed that there has been a blockage in the upstream area.

This is in accordance with the explanation of LIPI-UNESCO / ISDR (2006) that disaster warning parameters which include warning signs and information distribution about the occurrence of disasters are no less important than other parameters. Early warning can reduce casualties, property and environmental damage. In this regard, training and simulation are needed to be done when hearing a warning, where and how to save themselves in a certain time in accordance with the location where the community was at the time of the disaster.

Monitoring activities are carried out by forming community groups whose task is to carry out routine monitoring of river conditions and work together in normalizing river basins that are prone to landslides. In addition, communication between upstream and downstream communities also needs to be strengthened as an effort to prevent and prepare in the face of banjir bandang disasters (Jayadi, 2000).

Mukim and the village head together with the community in tackling flash floods is doing reforestation, forbidding the community to cut trees in high altitude or mountains, keeping the river from being clogged with flowing wood. Greening, normalizing the river, patrolling once a month to the mountains to see the state of the forest, whether there is logging done by residents or residents outside the village. This requires continuous efforts from the government and the community to continue to monitor the condition of the forest and the environment around community settlements. Monitoring and maintenance are not carried out routinely. In this case the local government also does not conduct routine monitoring to disaster-prone areas due to lack of sufficient budget allocation for efforts in disaster risk reduction.

Mukim and the village head whose job is to lead the residents to always coordinate with the subdistricts in disaster mitigation, for example conducting greening which is distributing tree seedlings according to the direction of the sub-district, holding mutual cooperation in normalizing the river by inviting and involving the sub-district party. This is in accordance with the opinion of Ayu and Hidayat

(2016) the delivery of information directly can be conveyed through preaching in the study, through discussion of community representatives, and community service activities. According to LIPI- UNESCO / ISDR (2006) the parameters of resource mobilization both human resources (HR), funding, and important infrastructure for emergencies are potentials that can support preparedness. But on the contrary, resource mobilization can also be an obstacle if mobilization cannot run well.

Resource mobilization is an important parameter of preparedness. Local governments and sub-districts have not mapped all areas prone to banjir bandang and run knowledge programs on preventive measures to prepare for dealing with banjir bandang. In addition, the spatial regulation based on disaster risk reduction has not yet been implemented explicitly so that in the future the community can be kept away from disaster threats. Now the BPBD has run a disaster resilient village program, from the results of the disaster management study, Tangse District was selected to carry out the disaster resilient village program, namely Ranto Panyang Village, Peunalom Sa Village, said respondents. But the program did not work as it should, due to budget constraints allocated for disaster management.

As a lending sector, BPBD has an obligation to support mitigation of banjir bandang disasters in Tangse by conducting socialization and by establishing disaster resilient villages in an effort to mitigate disasters both during rehabilitation and reconstruction "said respondents. Mitigasi flood disaster have not been fully carried out, so that the losses are always very significant. The unavailability of disaster maps in each gampong map prone to flood and prone to landslides, as well as inadequate early warning systems implemented in areas prone to banjir bandang disasters. This is because there is still a lack of advice and infrastructure that still lacks many such as disaster-prone maps in every village, evacuation routes, posts or gathering points in the event of a disaster.

Nugroho (2012) states that the characteristics of a resilient community in dealing with disasters are people who are able to avoid, adapt, so four strategies are needed as follows: (1) keep people away from disasters, (2) keep disasters away from people, (3) live in harmony with disaster risk, (4) developing and encouraging local wisdom of the community in dealing with disasters.

Conclusion

Based on the results of research and discussion, it can be concluded that in terms of knowledge and attitudes of the Tangse community it is already good where the community already knows the signs of flash floods and the environment is vulnerable to disasters. But it is still very lacking in terms of regulations and policies. Peraturan are still not implemented properly, and sanctions for the perpetrators of illegal logging involving enforcement officers h u kum.

The loss of customary regulations or local wisdom imposed by the people of Tangse District, namely the prohibition of cutting 200 fathoms from the river's edge and 50 fathoms from the mountainside, proves the weakness of the regulations in Tangse District. The participation of the Tangse District community in maintaining forestry is in the low category. The emergency response plan for coordination with residents in dealing with flash floods is to help evacuate, rescue and rescue, so that disaster victims can be minimized.

Attitude and caring society should tion of on disaster risk flash flood is clicking attempt kan prevention of disasters with reforestation and river normalization. The socialization was not fully carried out due to lack of funds allocated for the emergency response plan. The government has not yet mapped all areas prone to banjir bandang, hazard map of disasters in every village, unavailability of pulping points and evacuation routes for banjir bandang disasters in each village.

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