

DISASTER MITIGATION AS AN EFFORT TO MINIMIZE THE IMPACT OF FLOODS IN LAMONGAN DISTRICT

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ABSTRACT

Flood is one of the most dominant disasters in Indonesia with incident that tends to increase. Lamongan District is an area with a fairly high risk of flooding due to the intensity of which it occurs every year. The high risk of flooding is caused by two reasons, the Bengawan Solo flow and the rainfall (the Bengawan Njero flow). Every flood disaster that occurs will certainly cause various impacts from damage to infrastructure, loss of property and casualties. Disaster management efforts are certainly carried out to minimize the risk and impact of flood disasters in Lamongan District, such as through disaster mitigation. This research aims to determine disaster mitigation carried out in Lamongan District as an effort to minimize the impact of flooding. This research used descriptive qualitative research methods. Disaster mitigation in this research is divided into two according to Perka BNPB Number 4 of 2008, active disaster mitigation and passive disaster mitigation. The results of this research indicated that active mitigation in Lamongan District was carried out through, the making flood disaster signs, supervising spatial planning, conducting training and counseling on flood disasters to officials, communities and students, planning evacuation places and flood disaster evacuation routes, and making embankment reinforcement. Meanwhile, passive mitigation in Lamongan District was carried out through, drafting laws and regulations, making flood-prone maps, making guidelines for every disaster management activity, making disaster posters, conducting flood risk studies, conducting disaster education, forming village forums, and prioritizing disaster management in development planning.

Keywords: *Flood, Disaster Mitigation, Active Mitigation, Passive Mitigation*

A. INTRODUCTION

A disaster is an incident that can occur anytime and anywhere so that it often causes fear, anxiety, and even mass losses to the community. UNISDR (2010) mentions that disaster is a serious disruption to a community or society which results in extensive losses and impacts on humans, material, economy, and the environment, which exceed the ability of the affected community or society to manage their resources. Nature is one of the most troubling factors that cause disasters because of uncertainty about the risks, when, where, and the impacts that

can be caused. Nature has a dynamic trait that causes changes continuously through biological and geological changes, giving rise to potential and unavoidable risks of disasters.

In the opening of the 2021 National Disaster Management Coordination Meeting (Rakornas PB) which was attended directly by the President of the Republic of Indonesia and the Head of BNPB, it was stated that the World Bank declared Indonesia as one of 35 countries with the highest level of disaster threat risk in the world. Every disaster incident is always followed by various impacts from loss of property to casualties. It is recorded that every year the economic loss due to disasters reaches an average of 22.8 trillion rupiah and the death toll due to disasters in the last ten years has reached an average of 1,183 people who have died. Damayanti et al. (2017) argue that disasters are common and Indonesia is one of the countries with a high vulnerability to natural disasters and varies in the type of disaster. The territory of Indonesia is in a cross position between continents and between oceans, located on the equator, located at the junction of the three main plates of the earth, and is located in the Ring of Fire and Alpine Belt. With the condition of the region, various types of disasters have the potential to occur in Indonesia, such as floods, tornadoes, landslides, droughts, volcanic eruptions, earthquakes, tsunamis, and others. BNPB (2020) records that throughout 2020 there have been 2,925 disasters throughout Indonesia which are dominated by hydrometeorological disasters, especially floods totaling 1,065 incidents. The current climate change is alleged to be the cause of the increase in hydrometeorological disasters such as floods, landslides, and tornadoes (Rosyida et al., 2019).

Flood is an incident when water inundates an area that is usually not flooded for a certain period (Yanuarto et al., 2019). High rainfall, lack of river capacity, low absorption of soil, and lowland areas are often the cause of flooding. Some areas with relatively low plain conditions and high rainfall have the potential to incident annual flooding, one of these areas is Lamongan District.

Table 1. Flood Incidents and Losses Due to Floods in Lamongan District in 2015-2020

No.	Year	Flood Incidents (Subdistrict)	Losses Incurred		
			Home (Unit)	Agricultural Land (ha)	Affected Victims
1.	2015	6	2.159	3.972	2.159
2.	2016	11	8.500	5.694	42.658
3.	2017	14	4.006	4.335,72	12.858
4.	2018	9	2.773	2.838,21	9.350
5.	2019	8	1.671	1.774	5.573
6.	2020	20	9.622	*(IDR 5.593.323.750,00)	34.727

*Loss in IDR

Source: BPBD Lamongan District, 2021

Lamongan District is an area located in the northern part of East Java Province with 27 subdistricts divided into three characteristics by the Bengawan

Solo River, the south-central part (low land which is relatively fertile), the southern and northern parts (rocky limestone mountains with medium fertility), and the north-central part (Bonorowo or Bengawan Njero which is prone to flooding). The potential flooding in Lamongan District is quite high because it is a downstream area of the Bengawan Solo River which often receives floods from the upstream area, while the Bengawan Njero area which tends to be sunken also often experiences overflows when rainfall is high, and coastal areas that incident sea-level rise also often cause ROB flooding. In addition to the condition of the area, flooding in Lamongan District can occur even worse because of community activities, such as land conversion and littering. The conversion of land into settlements, ponds even planted areas is often found along river banks which are restricted areas because it can increase and exacerbate the risk of flood disasters. The floods that occur every year in Lamongan District certainly have various impacts. Losses in the form of damaged roads, bridges, embankments, offices, schools, rice fields, ponds, loss of property, and casualties continue to haunt the community every year when floods occur. Damage to public facilities such as roads, bridges can certainly disrupt community activities and damage to embankments can cause other areas to be flooded. Meanwhile, the threat of disease can be carried away by inundating floods.

Flooding in Lamongan District is a disaster that difficult or even unavoidable, but the risks and impacts of a flood disaster can be minimized. Various efforts have certainly been made by the Government at both the central and regional levels through the implementation of disaster management which in the Peraturan Pemerintah Republik Indonesia Nomor 21 Tahun 2008 aims to ensure the implementation of disaster management in a planned, integrated, coordinated, and comprehensive manner to protect the community from threats, risks, and impacts of disasters. That goal is in line with the concept of disaster management Coppola (2007) in Adiyoso (2018), starting with efforts to minimize the impact of disasters so that development does not return to zero and does not lead people to new civilizations. The implementation of disaster management has tended to be lacking at the pre-disaster stage such as the BNPB assessment on medcom.id (2018) that domestic pre-disaster preparedness, especially mitigation and early warning, is still minimal, so it often causes a high level of losses experienced. The Indonesian Ombudsman Representative of East Java (2019) also revealed a similar matter in monitoring the implementation of BPBD's work, explaining that the existence of limits of authority between institutions hinders disaster mitigation activities so that it is not optimal and tends to be slow in implementation in the ground. Whereas disaster mitigation is an initial activity from the pre-disaster stage which is often seen as the foundation for disaster management efforts. Noor (2014) also argues that mitigation activities aim to improve community preparedness and disaster risk reduction for a long period, reduce the number of victims, and be implemented as much as possible to minimize the impact (Hayudityas, 2020). At the opening of the PB National Coordination Meeting for the Year 2021, the President also emphasized that the main key in reducing risk lies in the aspects of disaster prevention and mitigation. Thus, efforts to reduce disaster risk and impact must be based on a strong

foundation, by prioritizing disaster mitigation aspects. Disaster mitigation activities consist of deepening knowledge and readiness for the efforts that need to be made before or during a disaster to reduce the impacts that may be caused.

Disaster mitigation is generally carried out through structural mitigation and non-structural mitigation, however, in the Head of BNPB Regulation Number 4 of 2008 concerning Preparation of Disaster Management Plans, mitigation is divided into two based on the trait, active mitigation and passive mitigation. Lamongan District as a flood-prone area certainly also continues to strive to minimize the risk and impact of floods through mitigation activities coordinated by the District Government, especially BPBD as an agency established to carry out disaster management activities. So, this study aims to determine disaster mitigation carried out by Lamongan District as an effort to reduce the impact of floods.

B. LITERATURE REVIEW

Disaster Management

Disasters in the Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 are described as incidents or sequence of incidents that threaten and disrupt people's lives and livelihoods caused by natural and/or non-natural factors as well as human factors resulting in human casualties, environmental damage, property loss, and psychological impact. In other words, disaster can be defined as an incident that threatens and harms society en masse due to natural, non-natural, and human/social factors. Various disasters can occur in various parts of Indonesia, one of which is flooding. Flood disaster is a condition of inundation of an area due to the lack of capacity of the water channel, resulting in an overflow that is detrimental to the community.

Every disaster event causes various impacts, it can be in the form of property loss and even casualties. Therefore, comprehensive, integrated and continuous disaster management efforts are needed to minimize the risk and impact of disasters or what is known as disaster management. Disaster management consists of six stages according to Nick Carter (1991) in the book *Disaster Management: A Disaster Manager's Handbook*, prevention, mitigation, preparedness, disaster impact, response, recovery, and development (Nisa', 2014). In Indonesia, disaster management is divided into three main stages, namely pre-disaster (preparedness, early warning and mitigation), during emergency response, and post-disaster (rehabilitation and reconstruction).

Disaster Mitigation

Disaster mitigation is one of the activities in the pre-disaster stage when there is a potential disaster condition which in the Undang-Undang Republik Indonesia Nomor 24 Tahun 2007, the Peraturan Pemerintah Republik Indonesia Nomor 21 Tahun 2008, and the Peraturan Daerah Kabupaten Lamongan Nomor 14 Tahun 2011 are described as a sequence of efforts to reduce disaster risk, both through physical development as well as awareness and increased capacity to face disaster threats. The purpose of disaster mitigation is to be able to minimize the risk and impact of disasters. Nick Carter (1991) in Setiawan (2015) divided disaster mitigation into two, structural mitigation and non-structural mitigation.

Meanwhile, disaster mitigation is divided into two according to Perka BNPB Number 4 of 2008, active disaster mitigation and passive disaster mitigation.

C. METHOD

This research used a descriptive qualitative research method because it was considered the most appropriate to describe the problem that occurred, the flood disaster in Lamongan District. Qualitative research according to Anggito & Setiawan (2018) is data collection in a natural setting to interpret the phenomenon that occurs where the researcher is a key instrument, sampling of data sources is done purposively and snowball, collection techniques are triangulation (combined), data analysis is inductive or qualitative, and qualitative research results emphasize meaning rather than generalization. Thus, qualitative research is a data collection process with researchers as the key instrument conducting intensive research on natural objects. This research will provide a detailed description of data and facts in the form of sentences or pictures in narrative writing.

This research focuses on disaster mitigation which in the Peraturan Kepala BNPB Nomor 4 Tahun 2008, disaster mitigation is divided into two based on traits, namely active mitigation and passive mitigation. Focus in qualitative research is used as a problem limitation or as a limitation effort in research that purpose to determine which limitations are used or to find out the scope to be studied so that the research objectives are not too broad (Ahmad, 2015). Activities included in active mitigation are basic disaster training, procurement of evacuation routes, and others. Meanwhile, passive mitigation is carried out through the development of actions such as drafting government regulations, creating disaster-prone maps, assessing disaster risks, and others.

D. EXPLANATION

Floods in Lamongan District are generally influenced by two reasons, the flow of the Bengawan Solo River and rainfall. Lamongan District is one of the downstream areas of the Bengawan Solo River, if the rainfall is high in the upstream part, it will have an impact on the downstream, the river cannot accommodate the volume of water causing it to overflow and flood. The area with the potential for flooding of the Bengawan Solo including Babat, Laren, Sekaran, Manduran, Karanggeneng, Kalitengah, Karangbinangun, and Glagah. In addition, the flood conditions can also be exacerbated by the land area of Lamongan District which is relatively low and flat, tends to be sunken in the middle (the Bengawan Njero area or the Blawi River). The high rainfall caused the river in Bengawan Njero to be unable to accommodate the volume of water resulting in a flood. The area with the potential for flooding of the Bengawan Njero including Glagah, Deket, Karanggeneng, Kalitengah, Karangbinangun, and Turi. From a risk study conducted by BPBD of Lamongan District, it is known that the Bengawan Njero flood area has a higher potential for flood disaster with low risk, while the Bengawan Solo flood area has medium potential with high risk. Based on field observations earlier this year, the Bengawan Njero area experienced flooding for approximately two months due to high rainfall and overflows in the

area. In addition, the plains around the Bengawan Njero or the Blawi River are the lowest points so that they become the flow of water from the rivers in Mantup, Sugio, Kembangbahu. Various efforts have been made, such as cleaning garbage and water hyacinth to suction using a pump to overcome some flood conditions, but several areas such as Turi, Glagah, Deket are still flooded.

The floods that occur in Lamongan District every year have certainly caused various impacts, ranging from property losses to the incidence of casualties. Therefore, various efforts are continuously being made to minimize the risk and impact of annual flood disasters. Disasters are a collective problem, not only the government but all parties have a role in disaster management. As an effort to minimize the risk and impact of flood disasters, the Lamongan District Government through the Lamongan District BPBD collaborates and coordinates with other relevant agencies to carry out active and passive disaster mitigation activities based on the Peraturan Kepala BNPB Nomor 4 Tahun 2008. The implementation of active and passive mitigation cannot be separated because active mitigation will function well coupled with passive mitigation. And passive mitigation is used as a guide in carrying out active mitigation.

Active Mitigation

Active mitigation is an effort to minimize disaster risk and impact through activities that require direct contact with the community. Active mitigation activities are carried out through the installation of warning signs, dangers, and prohibitions from entering flood-prone areas that have been placed in several areas with high levels of vulnerability by each related agency. Some of them are caution signs and the prohibition of swimming in Laren, at the sudetan of Bengawan Solo. The installation of warning signs for flood-prone areas in the Bengawan Njero area, including in Turi (Ngunjungrejo, Kemlagigede, Kemlagi Lor) and Kalitengah (Tiwet, Blajo, Gambuhan). However, there are still some vulnerable areas such as riverbanks that have not been given warning signs or prohibitions on planting trees or plants. This needs to be prioritized because there is still was found land conversion (land-use change). Even though the riverbank areas and around the embankments are prohibited areas to be planted because they can cause the banks to erode until the embankments burst. Therefore, spatial planning supervision must be increased. Spatial planning supervision is also carried out as an active mitigation effort by related agencies such as Bappeda and the Cipta Karya Public Works Office. However, in current spatial planning, the disaster aspect is always prioritized by using the BPBD's KRB (Kajian Risiko Bencana/Disaster Risk Assessment) as a reference. An early warning was also carried out through an appeal letter to the villages for the implementation of community service ahead of the rainy season or the installation of an EWS (Early Warning System) as found in the Blawi River and the Kiringan River.

Basic disaster training for officials and the community in Lamongan District is carried out in various programs as active mitigation. For government officials in Lamongan District, basic disaster training is carried out through the Apel Kesiapsiagaan Bencana which is held once or twice a year. In this event, training was carried out as if they were facing a flood disaster with all agencies participating in their respective roles, such as the TNI/Polri as executor of rescue

evacuation of affected communities, the Health Office as executor of health services, and others roles. BPBD Lamongan District also conducts basic disaster training for volunteers, village communities, and school children. Apart from training, outreach to increase awareness was also carried out as part of active disaster mitigation.



Figure 1. Apel Kesiapsiagaan Bencana and Establishment Destana in Lamongan District (Source: BPBD Lamongan District, 2021)

Training and outreach for village communities are carried out through the Destana (Desa Tangguh Bencana) program. Destana establishment's purpose to make people aware and understand the potential for disasters in the village, infrastructure for disaster management, community vulnerabilities, the existence of evacuation routes, gathering points, and insight into the formation of village forums. In general, Destana's goal is to shape rural communities to be resilient and independent in facing the threat of disaster. Independent in this case, the village can be able to get up and recover by itself when a disaster occurs but still prioritizes coordination with related agencies. The ability of the community to respond and adapt is a useful resource for planning risk reduction and disaster management programs (Ma'arif & Hizbaron, 2015). Destana in Lamongan District was formed and has been continuously fostered since 2012 until now. Focusing on 71 villages with high levels of flood hazard, 56 villages have been formed in many Subdistrict like Babat, Laren, Manduran, Sekaran, Karanggeneng, Kalitengah, Karangbinangun, Turi, and Glagah. Not all villages can be fostered into Destana for several reasons including budget constraints and village priorities with high levels of vulnerability. The guidance for Destana is carried out by the BPBD of Lamongan District to village officials, members of the BPD (Badan Permusyawaratan Desa), Karangtaruna, PKK, and others village volunteer

Total	70	+ 4.900
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Source: BPBD Lamongan District, 2021

In the BPBD Flood Disaster Contingency Plan (Renkon) document, it is known that several areas in Lamongan District can be used as places of refuge in the event of a flood disaster. The table above shows that there are 70 temporary evacuation locations spread across ten subdistricts with a total capacity of + 4,900 people. The determination of the refuge places is because they can accommodate, in the form of a large field, and easy access roads for four-wheeled vehicles.

The construction of structures to secure, prevent and minimize the impact of flood disasters is with embankments. The construction, strengthening, and maintenance of embankments are one of the active disaster mitigation efforts that are always carried out in minimizing the risk and impact of flood disasters in Lamongan District. Therefore, there are a lot of embankments including in the Plalangan, Deket, Kruwul, Plembon, Gedangan Embankments, and many more. The embankment in Lamongan District has a very important function in overcoming floods, therefore strengthening and maintenance of the embankment is routinely carried out both by the BBWS (Balai Besar Wilayah Sungai) of Bengawan Solo as well as in coordination with other related agencies. The strengthening of the embankment is carried out through soil compaction, however, in the bend or water gaze (tatapan) area, are given bronjong (wires) stones and submerged so as not to erode the embankment. BPBD maintains embankments by early detection or inspection through river tracing, embankment tracing, reservoirs tracing annually and the results are coordinated with the relevant agencies. Socialization was also carried out to the community to protect the embankments from being converted, not planted, which had an impact on reducing their function. The existence of embankments in some of these areas can only partially solve the problem of flooding because in some other areas such as Bengawan Njero the problem of flooding is still haunting. Communities around Bengawan Njero such as in Turi have adapted to the conditions of this annual flood so that community activities are not paralyzed and can still be carried out. These adaptations include installing a connection pipe on the exhaust of a motorized vehicle so that when floodwater is used it does not enter. Other efforts such as raising embankments have not been implemented due to several reasons, one of which is due to budget constraints. In addition to embankments, Lamongan District also has a channel (Sudetan) that functions to reduce water from Bengawan Solo so that the water is not full. The Sudetan in Lamongan District is in Pelangwot Village, Laren.

Passive Mitigation

Passive mitigation is an effort to minimize the risk and impact of disasters through the development of measures such as drafting government regulations, creating disaster-prone maps, creating disaster risk assessments (KRB), and others. Preparation of disaster-related laws and regulations in the Lamongan District is one of the passive mitigation activities. Some of the laws and regulations that have been drafted include the Peraturan Daerah Kabupaten Lamongan Nomor 14 Tahun 2011 concerning Disaster Management, the Decree

(SK) of the Regent of Lamongan concerning the Lamongan District Disaster Risk Reduction Coordination Forum, and others. Determining policies related to disasters is the first step in the government's comprehensive efforts in a sequence of disaster management activities, starting from mitigation, preparedness, emergency response, reconstruction, and rehabilitation. Efforts to reform laws and regulations need to be carried out, adapting to the situation and conditions that have changed a lot in current disaster management, such as efforts to reform the Peraturan Daerah Kabupaten Lamongan Nomor 14 Tahun 2011. However, these reforms cannot be carried out properly because there has been no update on regulations which is higher, the Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 concerning Disaster Management so that its submission is still experiencing rejection. Therefore good coordination also needs to be improved between central and regional agencies so that disaster management efforts can be carried out better.

So far, there are still limits on authority between institutions, such as the explanation of the Indonesian Ombudsman Representative of East Java in monitoring the implementation of BPBD work. The limitation of authority between institutions causes delays in disaster mitigation activities so that it is not optimal and tends to be slow in implementation in the field. This seems to be answered by the passing of the Decree (SK) of the Regent of Lamongan regarding the Coordination Forum for Disaster Risk Reduction in Lamongan District in 2020. With this decree, coordination regarding disaster risk reduction between institutions can run better, but it is also necessary to improve coordination with village officials so that risk reduction disasters can be carried out as a whole.

Apart from the existing laws and regulations, there is also KRB (Disaster Risk Assessment) is used as the basis for implementing disaster risk reduction and the basis for preparing the RPB (Rencana Penanggulangan Bencana/Disaster Management Plan) in Lamongan District. KRB is prepared through research or assessment related to risks and characteristics of disasters in Lamongan District which is also one of the passive mitigation activities. The assessment was carried out on all potential disasters in Lamongan District. As for the RPB (Disaster Management Plan) document which is specialized in flood disaster management. The assessment of the risk and characteristics of the disaster itself is carried out by an expert or consultant who has the authority to make the study, in this case, the BPBD only facilitates. KRB itself is valid for five years, which means that it is renewed every five years. In KRB, there are several scopes of study such as hazard level assessment, disaster vulnerability level assessment, capacity level assessment in dealing with disasters, disaster risk level assessment, and disaster management policy recommendations based on the results of disaster risk map studies. So, in the KRB, an assessment is also carried out to make a disaster-prone map for each potential disaster in Lamongan District.

Ideally, making and updating disaster-prone maps should be done once a year, however, because changes in Lamongan District are not too significant, the cost of making maps requires a large enough budget, so it is done once every five years. In addition to disaster-prone maps, there are also maps of the Bengawan Solo flow, maps of the Bengawan Njero flow, and others. The image below is an

example of a flood hazard map in the Lamongan District. According to Sunarto et al. (2017), maps are a tool that can be used to identify disaster-prone conditions based on the physical and socio-cultural conditions of an area combined with an overlay so that it can display information about disaster risk. Later, through the map, we can make plans that are expected in the environment.

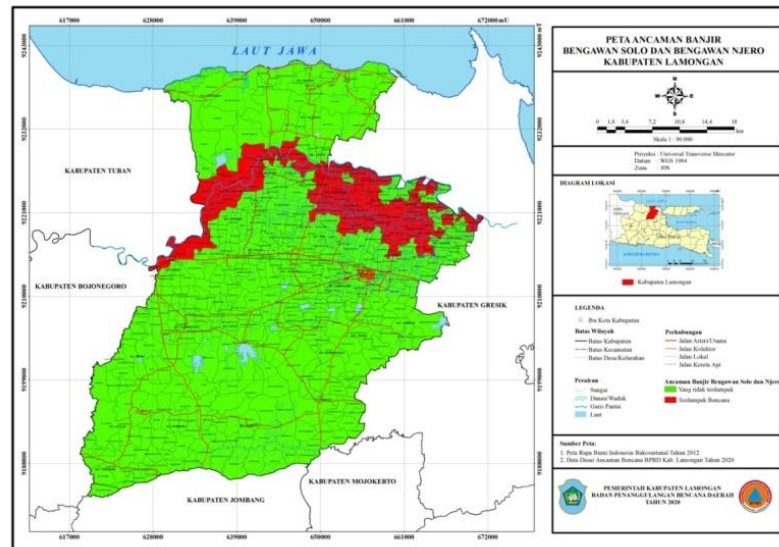


Figure 3. Flood Threat Map in Lamongan District
(Source: BPBD Lamongan District, 2021)

Making guidelines or standard procedures is also one of the passive disaster mitigation measures. Each activity in disaster risk reduction and disaster management has its guidelines which must be well structured so that the objectives of the activities can be achieved. Such as the implementation of disaster education which is certainly carried out based on established guidelines. Internalization of Disaster Management in the local education content has been previously described in training and outreach activities also targeting school children or students through the SPAB program, which is a collaborative program between the Ministry of Education and Culture, BNPB, and Scouts. In Lamongan District itself, BPBD implements SPAB through the SMAB (Sekolah Madrasah Aman Bencana) program in collaboration with school committees to carry out training, counseling, and outreach to teachers, staff, students as well and the SANTANA (Santri Tanggap Bencana) program. The program has been implemented in several schools such as SMAN 1 Mantup and SANTANA in the Turi area. Reference to this program has also been contained in a book published by BNPB in collaboration with the Ministry of Education and Culture. In providing disaster education, it also takes advantage of making posters, pictures, and even animated videos as a means or material for socialization to students and children. Posters, pictures, and videos are also used to facilitate the provision of information to the public whose sources can be made through the central government, namely BNPB, Provincial BPBD or independent production by

District BPBD. The hope of implementing this SMAB program is certainly that school elements can recognize the threat of disasters around the school, can form a command system, create and understand evacuation routes, can take appropriate actions so that they can save themselves when a disaster occurs. It is important to carry out disaster education as early as possible so that children can understand the threats of disasters that exist around them. Disaster education can also be provided through extracurricular activities. Providing education for students is also the result of collaboration with other agencies such as the Education and Culture Office.

The formation of a disaster task force organization or unit in the Lamongan District was carried out through the formation of a village forum. The formation of a village forum is one of the results of training and outreach through the Destana (Desa Tangguh Bencana) program. The system and structure of the forum for each village are certainly different because they have to adapt to the situation and conditions of the village. All village components starting from the apparatus, Karangtaruna, Babinsa, Bhabinkamtibmas, community, and other components will be involved to become part of the village forum. Communities in villages such as schools, martial arts communities will also be involved as part of the forum. Establishing village forums will also facilitate coordination with other relevant agencies, such as BPBD in disaster management efforts. Through the forum, BPBD can also provide guidance and strengthening village communities regularly so that they become resilient in facing disasters. One of the newly formed village forums is the Keduyung Village Forum through a Decree of the Village Head of Keduyung concerning the Organizational Structure and Work Procedure of the Keduyung Resilient Disaster Management Alert Forum.

Mainstreaming of disaster management in development planning must be improved and become the main aspect. If disasters can be minimized, it will certainly have a good impact on the development planning process in terms of budget and infrastructure. Like hydrometeorological disasters, floods, which are currently experiencing an increase in incidence due to extreme climate change, can certainly hinder the implementation of development planning. Therefore, efforts to minimize the risk and impact of flood disasters are being continuously improved by involving all components of the government, society, and others. Coordination is carried out by BPBD with subdistricts and villages to socialize the community so that they do not take advantage of the riverbanks as a place to live or land to maintain their durability and function. Socialization was carried out as one of the mainstreaming of disaster management in the community.

To mitigate flood disasters in Lamongan District, the preparation of a Renkon or Contingency Plan was also carried out jointly with related agencies down to the village. Renkon is made as an effort to plan against uncertain conditions (may or may not occur) to cope with or prevent disasters from occurring. Renkon can be used in the event of a disaster or not if there is no disaster, however, Renkon renewal is always carried out every year regardless of whether it is used or not. Renkon can also change according to the conditions. In the Renkon, the roles of each agency, technical and managerial action scenarios, as well as mutually agreed upon responses and deployments are arranged. Renkon

is not only prepared within the scope of Lamongan District but also every village that has been fostered as Destana has been able to compile a Renkon which is also used as a reference in compiling a Lamongan District level Renkon. So, it can be said that various mitigation efforts have been arranged in Renkon.

Disasters cannot be handled by themselves, which means that disasters are common property. Not only the government but all parties such as the community, the business community, and others have an important role to play in efforts to minimize disaster risk and impact. Currently, a Penta helix collaboration is being developed between the government, community, business or private sector, academics, and the media in disaster management. From this collaboration, it is expected that the implementation of disaster management and efforts to disaster risk reduction and impact can run better.

E. CONCLUSION

1. Floods in Lamongan District are caused by two main things, namely the Bengawan Solo flow and rainfall (the Bengawan Njero flow). The Bengawan Njero flood area has a higher potential for flood disaster with low risk, while the Bengawan Solo flood area has a medium potential with a high risk.
2. Active mitigation carried out in Lamongan District as an effort to minimize the risk and impact of floods includes making flood disaster signs, supervising spatial planning, conducting training and counseling on flood disasters to officials, communities and students, planning evacuation places and flood disaster evacuation routes, and making embankment reinforcement.
3. Passive mitigation carried out in Lamongan District as an effort to minimize the risk and impact of floods includes drafting laws and regulations, making flood-prone maps, making guidelines for every disaster management activity, making disaster posters, conducting flood risk studies, conducting disaster education, forming village forums, and prioritizing disaster management in development planning.

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