

People Participation in Flood Disaster Risk Reduction in Desa Tanjung Sari District of North Cikarang Bekasi

Sony Nugratama H
Universitas Islam 45 Bekasi
Indonesia

Corresponding email: sony.nugratama@gmail.com

Abstract—Aims of this study is to determine the level of community participation and understanding the forms of participation to reduce disaster management in Tanjung Sari village, district of north Cikarang, Bekasi. This research is a descriptive qualitative which is describes and sets out the findings in the field. The subjects are the resident of Tanjung Sari village, and the method the data collection using observation, interviews, and documentation. Analysis technique used is the model of Miles and Huberman, data collection, data display, data reduction and conclusion. Based on the data analysis of the level and form of participation in reducing the risk of floods in the Tanjung Sari village, district of north Cikarang, Bekasi. The resident's participation of Tanjung Sari is at the consultation level, where people can only leave a response or opinion after the government gives flood disaster information. They only knew about the right and obligation but they don't know how important if they participate in disaster management.

Keywords—People participation, disaster risk reduction, Flood, Bekasi.

I. INTRODUCTION

Uncontrolled resource exploitation will lead to imbalance of nature, as an example of illegal logging by humans will reflect badly on the balance of the surrounding environment. In addition, the decline in the carrying capacity of the environment as a whole and tends to increase as a result of irregularities layout. Increased exploitation of natural resources is currently not being done correctly. Housing development and industries activities that are not in accordance with the rules of environmental protection including the construction of houses and industries in water catchment areas. Based on these problems, the risks arising as floods disaster are becoming more frequent.

North Cikarang district is one area in Bekasi are often affected by flooding in every rainy season. The worst flooding occurred in February 2014, reaching 4 meters. Here is the flood elevation data that is in the village of Tanjung Sari Period 2010-2014:

TABLE I. FLOOD ELEVATION DATA YEARS 2010-2014 TANJUNG SARI DISTRICT OF NORTH CIKARANG BEKASI

No	Years	Water Level	Victims	Flooding Factors
1	2010 – 2011	50 – 80 cm	–	Overflowed Cibeureum river
2	2011 – 2012	60 – 80 cm	–	Overflowed Cibeureum river
3	2012 – 2013	150 – 200 cm	–	Rainfall intensity
4	2013 – 2014	250 – 400 cm	–	Rainfall intensity

Source : Tanjung Sari village data, 2015

The flood disaster in the village of Tanjung Sari caused by the overflow of the river Cibeureum due to rain continuously, drainage is poor, and the river in the village are quite narrow so fast water overflowed, Tanjung Sari is an area of plains Low, high rainfall and the large pile of garbage causing a lack of water catchment areas. Forms of community participation in reducing the risk of flooding in the village of Tanjung Sari namely:

Clean Friday activities: Often on Friday invented clean in every rainy season where the villagers of Tanjung Sari jointly cleaning times, sewer, garbage which can lead to flooding. (1) Donations Material /money: People are capable of in terms of economy can be donated materials/money for development programs drains (drainage). (2) Discussion: In this case the participation of the community is done in terms of thinking, where the public can be found in the frequently held meetings on Thursday to discuss the problems in the village of Tanjung Sari. Tanjung Sari is always flooded in the rainy season resulted in many losses for the local community, thus public participation in reducing the risk of flooding in the village of Tanjung Sari will be very necessary. Such participation is expected to reduce or minimize losses and risks caused by the flooding. As for the purpose of this study that, in investigating and know how is the form and level of community participation in reducing the risk of flooding in the village of Tanjung Sari District of North Cikarang Bekasi Regency.

II. METHOD

There are several forms of participation that can be given in a community development programs, Holil (1980: 81) suggests a form of participation as follows: (1) Participation of money, this form of participation to expedite efforts for the attainment of the needs of people who need help. (2) Participation possessions, this participation can be in the form of donated property, usually in the form of work tools or utensils. (3) force participation, given in the form of personnel for the implementation of efforts to the success of a program. (4) Participation skills, conducted through its skills to other community members who need to intention that the person can engage in activities that can improve social welfare. (5) Participation thoughts. in the form of donations in the form of ideas, opinions or constructive ideas, both to develop programs and to facilitate the implementation of the program and knowledge in order to develop activities that follow. (6) social participation, given by participants as a sign of community. Such as social gathering, attended death, and others and can also contribute concern or a sign of closeness.

Meanwhile, according to Panudju et al (1999: 72) states that community participation is also a strategy where poor communities involved and determine how the provision of information, goals and policies are made, the amount of tax to be allocated, implementation of the programs, and benefits such as contractors contract and protections granted. Arnstein 1969: 217 in Kusumastuti, 2004) describes the public participation is a multilevel pattern (Ladder pattern). A level which consists of eight levels where the lowest level is the level of community participation is very low, then the top level is the level at which public participation is very large and strong. Levels of public participation above can be explained as follows: (1) Citizen Control; (2) Delegated Power; (3) Partnership; (4) placation; (5) Consultation; (6) Information; (7) Therapy; (8) Manipulation. The typology of eight people willing to participate in the procurement their housing, if only they have the power to help determine the different stages of making these activities to ensure that the interests can be met.

Descriptive research is research that describes a symptom and events, the descriptive method used when going to describe or explain the event or events that exist in society. Through descriptive research method, researchers will strive describe public participation in reducing the risk of floods in North Cikarang District. The subjects of this study regarding public participation in reducing the risk of flooding in the village of Tanjung Sari, North Cikarang Bekasi Regency. The subject of research as a source of research data using qualitative approaches can be either humans, background, events, and processes. Meanwhile, informants were divided into the following principal government informants who provide information about flood expansion in the community, as well as companion informant is a society that directly performs the participation of the flood disaster in the village of Tanjung Sari District of North Cikarang Bekasi Regency.

TABLE II. CATEGORY INFORMANT

Principal Informant

No.	Name	Age	Information
1	Nurhayati	46	Ketua RT 07
2	Rumsiah	50	Ketua RT 03
3	Sumantri	40	Ketua RT 04

Companion Informant

No.	Name	Age	Information
1	Sugiri	57	Warga RT 07
2	Nurhayati	38	Warga RT 03
3	Hasan	42	Warga RT 04

Principal informants in this study consisted of three members, namely the chairman of RT 07, RT 03 chairman, and chairman of RT 04. Meanwhile, the companion informant is a member society of the three persons. Each informant is a representation of the people residing in the village of Tanjung Sari and often suffered the worst flooding that only five third-RT RT alone and selected representatives of other RT, as seen from a height and flood prevention the same way. To obtain the data used several techniques including observation, in-depth interviews, and documentation. Based on the data collection techniques used, the instrument of this research using interview guide. Below is a table interview guide.

TABLE III. INTERVIEW GUIDE

Variable	Indicator
Public participation in reducing the risk of flooding	<ul style="list-style-type: none"> • Knowledge • Attitude • Behavior • Awareness • Form of Participation • Means • Before, during and after flooding

The data have been obtained and analyzed, there are three components of the analysis in this study: data reduction, data presentation and conclusion made in the form of analysis

III. FINDING AND DISCUSSION

The research was conducted in the District of North Cikarang Bekasi district, in the village of Tanjung Sari. Desa Tanjung Sari is a village in the District of North Cikarang which has a number of issues that arise after the establishment of the industrial area that has for decades occupied by thousands of companies, some of the issues on the find that drainage is less feasible and air pollution, or a bad odor that wafted almost a village thought to have come from waste companies in Jababeka, then the village of Tanjung Sari in high flood lunge for approximately 4 meters, causing numerous losses, the floods occurred because of the river that

passes through the village is quite narrow and there is no widening. Based on the flood elevation level. Tanjung Sari village's is one of the villages most severely flood elevation level among other villages located in the District of North Cikarang. So researchers interested in conducting research in the region.

North Cikarang District is a district in Bekasi, The astronomical Bekasi Regency is located at 106° 48' 28" East Longitude 107° 27' 29" and 6° 10' 6" south latitude. Province West Java, Indonesia. This district borders the districts formerly named districts Cikarang "*Karang Bahagia*", before the creation of the area the city district by district government Cikarang Bekasi so the area is entered into the districts of North Cikarang. Cikarang District also includes the area formerly Kawedanan Cikarang, Jatinegara From the interviews undertaken research to sixth informant principal and companion in advance it can be concluded that the flooding that occurred in the village of Tanjung Sari caused by the overflowing of rivers Cibereum and sluice Jababeka in the open so that the volume of high water cannot be in tamping because times are located in the village of Tanjung Sari is quite narrow, but it Tanjung Sari has a low-lying cause the water level quickly rose in the added amount of garbage in the river bank causes silting at the times. society does not have a lot of preparation to face the danger of flooding in because of flooding that often comes in every year is not so severe and quickly subsided, they had a positive response when there are a flood prevention activities of the government, but the implementation is less than the maximum, the public reason to remain in the village in because birth region and the absence of costs to move to another place.

The behavior of the people residing in the village of Tanjung sari is still not in katakana good, because there are many people who throw litter without thinking about the impact that will be experienced. If there is indeed a flood counseling about citizen positive outlook and continue to participate convey Hopes but in its implementation or activities overcome not too many people that had enthusiastically.

Participation will be undertaken before flooding the excavation times each upcoming rainy season, called on people not to litter, hold meetings *minggon* every week of his activity clean Friday, raising funds for the construction of drainage and bridge repair to use people to do activity. Residents are not expected to flood so severe that no preparations were done floods reaches 4 meters in because of the continuous rain, residents immediately evacuated during floods.

Residents calm during floods although citizens cannot deliver goods or other property which mainly is to save ourselves and to the place of refuge with blessed. Society immediately cleaned the house each of the many items that cannot be saved and broken, and citizens burn together. The people more concerned with the cleanliness of the environment, with littering participate in activities to help clean Friday, residents took the initiative to make para-paraan on the roof of the house to put the items essential goods.

A. *Descriptive Analysis of Research Results*

Descriptive analysis is the analysis of research data on the data obtained from interviews with three people as the next principal informant researchers also conducted interviews with three informants supporters. In interviews with the informant or informants, the researchers can analyze about:

Desa Tanjung sari is a region often hit by floods in every year, floodwaters could reach four meters in February 2014. Thus the villagers of Tanjung Sari accustomed to flooding that comes in every season of the rainy year. However flooding indeed the worst floods in previous years, in addition to continuous rain, times were quite narrow and low-lying area which is a contributing factor.

- **Forms of community participation**

Based on the results of interviews with informants at each point affected by the flooding in getting some participation in the community do Tanjung sari in reducing the risk of floods namely:

1) *Before the Flood*

Floods occurred in the village of Tanjung Sari caused by the overflowing of rivers Cibereum and sluice Jababeka in the open so that the volume of high water can not be in tamping due time in the village of Tanjung Sari is quite narrow, but it Tanjung Sari has a low-lying cause water levels rapid rise in the added amount of garbage on the river bank causes silting at the time the relief effort in doing the community before the flood that is carrying out activities in the prevention of flooding every year in the rainy season is coming that is by extracting time experiencing silting due to the piles of garbage, urge people not to throw garbage into the river bank and in the neighborhood around the house, so people prefer to burn garbage, hold meetings *minggon* every Thursday to convey information about the problems that exist in the village of Tanjung Sari especially when the rainy season arrives ie to discuss and submit will flood hazard and what needs to be done.

Event Clean Friday carried on each upcoming rainy season where the villagers of Tanjung Sari jointly cleaning times, sewer, garbage which can lead to flooding, the contribution in terms of material / money in doing in the hamlet its development programs drains (drainage) and repair the bridge that became one of the infrastructure in the community use for the evacuation route.

2) *When the Flood*

Residents are not expected to flood so severe that no preparations were done floods reaches four meters in because long periods of rain, residents immediately evacuated during floods, the response to the community during floods which is a way people make a used tire car by the board as a

Pedestal and be used to evacuate people who were inside the house to be brought to the refugee camp,

residents make large beds in use for prayer during the flood, distribute donations of clothing, food, medicines to residents who are in place another evacuation.

3) *After the Flood*

Residents immediately clean their houses many items that can not be saved and broken, and citizens together to burn, prevention efforts in doing public after the flood that is the mud that settles after the flood receded, collect items that have been damaged by floods and joint -Same burn.

B. The level of community participation

Public participation is a technical process to provide opportunities and wider authority to the community to jointly solve various problems. The division of authority is done based on the level of community participation in community that activities. Participation aims to find better solutions to problems in a community by opening up more opportunities for communities to contribute to the implementation of the activities run more effective, efficient and sustainable. The planning stage required greater community involvement, as in the planning stages of this community is asked to make a decision. this case is so that people have a sense of belonging, which raised awareness and responsibility to contribute to the success. A crucial element of the role or participation of the community, namely: The participation of the community is a mental engagement and feeling, not merely physically involvement. Willingness to contribute to efforts to achieve the goal. This means there is a sense of fun, a willingness to help the group.

Elements of responsibility, this element is a salient feature of the sense of being a member. Therefore the role of the community is not only limited community involvement in an activity but more participation also implies that the public is involved in every stage of a project up to assess whether the construction is in accordance with the plans and can improve its economy. Tanjung Sari community participation in order to overcome the severe floods that made the government look of their participation to the success of each activity.

From interviews and answers from the public Tanjung Sari indicating that they had a positive impression and assessment of the activities of the government in tackling the problem of flood disaster. Participation communities in flood disaster management is still less. the role of government is still very dominant in every phase of disaster.

Community participation is critical notes player on stage prior to the disaster has very little effect in the process and policy implementation. The participation rate of the best new occurs at a rate consultation. even on several activities are still at the level of information has begun at the level of partnership in the sphere of local environmental implemented spontaneously. Grade participation achieved was good partnership individually or in a group organization social. Rehabilitation phase after the disaster, the government again

dominant, especially in the activities of the community physic. Participation only limited consultation.

C. In the Government's efforts to Tackle Floods

Local government policy on disaster management is still very limited. Rule area that is already available is limited in activity at the time of disaster policy prevention. Meanwhile using guidelines issued by the central government, and not in the form of regulations area. such well as on post-disaster rehabilitation phase. flood prevention efforts that have been done are more focused on providing physical building flood control to reduce the disaster impact. In addition that, although the policy of non-physical that includes community participation in flood management has begun created but not yet implemented properly and did not fit the needs of the community. flood prevention includes activities that are very complex and is cross-sectoral, hence a need for coordination at the implementation level, policy planning including community participation.

Based on the observation that the prevention efforts were undertaken so far by the government and the people still are incidental or emergency response on a variety of natural disasters and the consequences that resulting. Effort follow up after the disaster and disaster anticipation has not been completely implemented in the former locations and areas prone to natural disasters natural disasters, so efforts to minimize the risk of disaster has not been done properly and integrated.

Prevention efforts by local governments is still very low, but the village government has begun to care about the necessary precautions to reduce the risk of flooding is to do outreach to the community to be able to safeguard the environment by not throwing trash carelessly especially at times can lead to silting and cannot be accommodate the large volume of water, hold meetings minggon every Thursday to discuss the problems in the village of Tanjung Sari, especially the problem of flooding when the coming of the rainy season, and give freedom to the people to express their opinions, do annual event that is cleaning time experiencing silting, making drains (drainage), providing information over the loudspeakers when the volume of water overflow quickly and it is expected that people leave their homes and evacuate, leave a rescue effort that is by setting up buoys and setting up refugee camps for people staying temporarily, providing food aid, medicine, clothing and other needs.

Flood not only destroyed roads and settlements, but also undermine the economic community social service facilities and public infrastructure, and even casualties. Greater losses if economic activity and government distracted, even stopped. Although participation in the framework of flood prevention very real. Especially on emergency response activities, but floods cause additional financial burden countries, mainly to rehabilitate and restore the function of damaged public infrastructure. The occurrence of a series of floods in a relatively short time and recur every year, demand even greater effort to anticipate them, so that losses can be minimized.

Government efforts that are structural (structural approach), had not fully capable of tackling the problem of flooding. Flood prevention, has been more focused on providing physical building flood control to reduce the impact of disasters.

In addition, although the policy of nonphysical that includes community participation in flood prevention has been made, but has not been implemented properly, did not fit the needs of the community, so that its effectiveness is questionable. As a result, the policies implemented effectively, even canceled. Thus, flood prevention just merely physical development (structural approach), to be dovetailed with the construction of non-physical (non-structural approach), which provides a wider space. Outburst flood would not be picking the place. Where there is a lesser place would have inundated. From the analysis of the data, that the public has a positive assessment of the activities in the fight against flooding in the village Tanjung Sari, but the implementation is the public is not fully willing to participate in the program the program, in this case the level of participation in the village cape Sari is still limited to the level of consultation where people just leave a response or opinion only after the information from the government and yet at the stage of implementation and in some community activities Tanjung Sari is still in the level of information where people just know their rights and their responsibilities without, fueled by awareness of the importance participated in flood prevention.

IV. CONCLUSIONS AND SUGGESTIONS

The results of research on public participation in flood disaster risk reduction in Desa Tanjung Sari District of North Cikarang Bekasi can be summed up into three forms of participation. First, before the flood: (1) people held activities in the prevention of flood every year in the rainy season with the excavation times experiencing silting due to a pile of garbage. (2) to disseminate not to throw garbage into the river bank and in the neighborhood around the house, so people prefer to burn garbage. (3) to hold meetings every Thursday *minggon* to convey information about the problems that exist in the desa of Tanjung Sari especially when the rainy season and discuss the dangers of flooding and what needs to be done. (4) implement the "Jumat Bersih" carried on each upcoming rainy season where the Desa Tanjung Sari jointly cleaning times, drainage, garbage which can lead to flooding. (5) donation a material/money for development programs RT drains (drainage) and repair the bridge that became one of the infrastructure in the community use for the evacuation route. Secondly, when the flood occurred: (1) making a used car tires by the board as a pedestal and be used to evacuate people who were inside the house to be brought to the evacuation. (2) create large beds in use for prayer during the flood. (3) provides for donations of clothing, food, medicines to residents who are in other refugee camps. Third, After the Flood occurred: (1) clean up sludge that settles after the flood receded. (2) collecting the goods that have been damaged by floods and together burned.

While the level of participation made public in efforts to control or reduce the risk of flooding in Desa Tanjung Sari is still at the *consultation* which the public has not fully participate in activities related to the program for flood prevention, even in some community activities are still at the level of information that is simply knowing rights and responsibilities.

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