

FLOODS, RISKS, MANAGEMENT AND MITIGATION A NON-TECHNICAL ASPECT REVIEW

Teti. A. Argo
The Institute for Research – ITB
January 20th 2001
The Kelurahan Cisaranten Kidul Meeting Hall, Bandung

I INTRODUCTION

Floods are one of the types of disasters more frequently occurring, compared to earthquakes, volcanic eruption, drought and landslides. Floods are even occurring more frequently in the present days. Floods are not only caused by rain that consequently causes the overflowing of surface (run-off) water, but also by the change of land usage, for example forest/land clearing and development in the water absorption area. A number of studies has even shown that man is the main cause of flood, compared to nature itself (Cuny 1983:38).

The Cisaranten Kidul is one of the locations in Bandung frequently experiencing flood. For years the control of flood in this kelurahan has been of the relief type. This means reducing the danger of the flood during its occurrence. Experts classify the actions implemented into:

1. The Emergency Phase: distinguished by the action implemented to rescue the lives of people. Included in this phase is the save and rescue efforts, first aid, medical assistance, and the rehabilitation of the communication and transportation network.
2. The Transitional Phase: consisting of efforts executed to accelerate the rehabilitation of the people back to their previous state of life such as reconstructing damaged buildings, restoring the function of the kitchen in houses, and curing of certain diseases. During this phase, the people may experience shock, confusion and frustration, especially when they must suffer from enormous losses. Also, during this phase the disaster is not over, the flood may not have subsided or the river may still overflow. Generally during this phase, external aid begins to diminish and the victims are forced to be able to help themselves.
3. The Reconstruction Phase: this phase occurs when there are reconstruction efforts that need a long time to complete. The rehabilitation of houses, roads, and so on sometimes may take years to complete.

Here the Mawil Hansip (Regional HQ for Civil Protection), at the city or sub-district and kelurahan level, play an important role in the effort to rescue human lives, with the assistance of other agencies such as PMI (The Indonesian Red Cross) or other voluntary organizations such as PKK groups, etc.

It must be noted that no one disaster is the same with another. Each natural disaster always has its own unique characteristics. That is the reason why the management of flood will always be different in each occurrence. Other than the loss

of lives, there are other losses that prevent the victims from carrying on with their daily activities, such as:

1. Health problems. During floods, health problems are very important especially during the first 72 hours. During this period we must make sure there are no endemic or contagious diseases which calls for preventive actions like immunization, registering the sick, and isolating to prevent the spread of the disease. The table below lists the possibilities of diseases.

Diseases	
Typhus and paratyphus	Waste and urine disposal
Food poisoning	Uncontaminated drinking water
Water poisoning	Food preparation
Cholera	Mosquito/fly control
Schistomiosis	Disease surveillance
Leptosirosis	Isolation and mass vaccination
Malaria	Isolation and disease treatment
TBC	Vaccination
Influenza	Isolation

Source: Cuny. 1983: 48.

2. Disruption in the economic life. The occurrence of a flood can disrupt the occupation of the people. For example during a flood the victims cannot go to work and must assist their families, or the location of their work is missing (such is the case for submerged rice fields). The people who suffer the most are those that work as rice field labor, fishermen, or own a small market (warung). The loss of time to work result in worse conditions. The best method to assess the loss is to estimate the income that was lost due to the flood. For example in china, the reconstruction phase consists of reconstruction of factories and not houses. China consider it better to provide job opportunities that will help the people to rebuild their houses in the end.
3. The effect on land value, in general, is the decline of the land value due to flood occurrences. Not many people would like to live in flooded areas. This is why migation is generally temporary unless provided with sufficient compensation.
4. Social and political effects. There are times that the incapability of the government to manage flood disasters cause dissatisfaction emongst the community that may develop into self-supported efforts to solve the problems themselves. The people start to define what they want and may be able to do. Thus the role of the government is minimized and is no longer decisive.
5. Administrative and managerial effects: centralized leadership is lost due to the loss of communication with the outside world caused by the flood. This will develop strong local leadership that will in turn strengthen the spirit of unity and togetherness in mitigating the flood. It is interesting to observe how the loss of communication with the outside world can promote unity amongst the people.

II FLOOD RISK FOR MITIGATION

As we all know, floods as one of many natural disasters, is often considered as an inevitable 'blessing' that occur by the will of God. This causes the people tend to just

accept the floods as they are. However, with the development in science and technology, flood occurrences are beginning to be predictable. Technology is already capable of exposing the potential of this danger before it occurs thus making it easier for men to prepare or plan against floods.

The aim of planning or mitigation against flood is to reduce human suffering caused by flood and increase the sense of security of flood victims. Mitigation against flood is measured by the reduction of flood risks through various action alternatives. Examples of this would be: constructing flood-proof houses, selecting plants that are resistant to flood, and determining household activities that is not hazardous.

There are a number of non-technical things that can be done to avoid flood. Solution to flood problems by using non-technical considerations involves behavior and habits of the people. The most important thing is the consideration as to where this mitigation effort will end. Thus it is important to identify every non-technical things related with mitigation, namely:

1. Community habit, especially concerning waste (solid and liquid) disposal.
2. Organization activities to identify the people who are vulnerable to floods such as children, old people, the disabled, and pregnant women.
3. Identify the most important things to carry during a flood.
4. Community knowledge of flood orientation, and the direction of its occurrence; so that people may plan the development of their houses and residential areas accordingly.
5. Determining locations safe from the flood and work to improve the location
6. Seek help in making buildings flood-resistant
7. And so on.

The fact that flood problems can be solved by non-technical actions will improve the endurance and resistance of the community. The community will then understand that this risk must be taken care of and will be able to determine the action that they will execute.

If community resistance is improved, flood mitigation can be minimized and the level of losses will be significantly reduced.

Sources:

Smith. K. 1992. *Environmental Hazards: Assessing Risk and Reducing Disaster*. London: Routledge.

Cuny. F.C., 1983. *Disaster and Development*. New York: Oxford University Press.