

CHAPTER 1 INTRODUCTION

1.1. BACKGROUND

Bandung, the capital of the West Java Province in Indonesia, is an attractive city. It is located in an altitude of 700 meters above MSL, on the plateau formed by an ancient lake bed, the Bandung basin, surrounded by volcanoes. There are 32 rivers flowing across the city in the north-south direction, which meet in the east-west in a major river: Citarum, on the southern side of the city. The south side of the city has a terrain that is relatively flat which indicates a condition of flood hazard.

A pleasant city to live in, with a comfortable average temperature of 28.5⁰C, Bandung has become a large city with a population of 2.4 million in 1999 inhabiting a coverage of 167.29 km². Most of the population resides toward the south side of the city where the terrain is flatter than the north side. The intensity of physical development has greatly accelerated, in this side of the city. Change in land use patterns, increased size of impermeable covers, deteriorated hydraulic properties of rivers and canals, and climate change contributes to increased risk of flood hazards.

Currently, annual flooding and inundation occur most often in the south side of city¹. The most affected communities are frequently those who live in high density, low-income quarters and with little access to information and equipment necessary for them to evacuate and rescue their belongings. The type of rescue that has been in place is limited to responsive action; an action taken when disaster strikes. This leaves residents having to recover and restart their living arrangement, after the disaster wipes out their investments on properties, health, and education. Such situation hinders their efforts to improve their capacity to develop, to increase prosperity, and quality of life.

Thus, there is a need to introduce an effort that shows the risk to annual flood and inundation can be reduced by planning for disaster mitigation and recovery. Planning for disaster mitigation, not only introduces the community toward protecting their lives and their properties, but also empowers the community to take action in minimizing the risk of loss, and encourage the ability of the community to continue improving their quality of live.

1.2. PROJECT ORIENTATION AND OBJECTIVE

This project is oriented itself toward increasing the capacity of the community to apprehend the risk of living in flood prone areas, to introduce initiatives of cooperative forms of social organisation in order to increasingly reduce the risk to flood and to plan for reducing the risks in the upcoming disaster, to take initiatives to prioritize actions and to develop project(s) necessary to reduce such risks. Community-based flood mitigation is an effort to emphasize participation among community members, stressing the values of self-help and self-sufficiency, in order to decide their own future lives in relation to living in flood prone areas. The objective of this project, thus, is to empower the local community to mitigate the risk of flood using affordable technology and appropriate participatory process in decision-making and implementation, in order to continue improve their livelihoods and lead a productive life.

¹ Information provided for by the Mawil Hansip, Kota Bandung (Regional Civil Defence of Bandung City, part of the local government body) which is based on the resource mobilization done by them to help with flood victims. Irrigation Section of West Java however, identifies those who lives in the banks the rivers are prone to flood as well, whose location can be either in the center or east and west of the city.

1.3. THE SCOPE OF THE PROJECT

There are three issues presented in this sub-chapter. The first issue is related to the substantive matter of the project, which takes the avenue of using community participation as a philosophical approach to develop a process that emphasize a community-based flood mitigation, defines the substantive boundary of the project, and discuss the possible results of the project. The second issue is related to the parameter being used to monitor the level of participation in developing an initiative based on community participation. The last issue is related to the case study includes, the reasons of choosing the case study, the basic pattern of the case study, and the general problems of flood in the area.

1.3.1. The Substantive Scope Of The Project

This project, Community-based Flood Mitigation (CBFM), is based on the belief that at the local level, the community, although affected by flood, own resources that can be utilized as an asset to develop the ability to deal with reducing risk of flood. Using the means of community participation, emphasizing on developing local control on the future of the community, the task of participation is to reach what is to be accomplished when there is a need to involve the citizens. This is in line with the definition of participation as “reducing the feeling of anonymity and communicate to the individual a greater degree of concern on the part of the management or administration” (Sanoff. 2000: 8). Participation here refers to a so-called genuine participation that relates with cooperation, partnership and delegation of power².

From such participation comes autonomy of power and responsibility. In their participation, members of the community can be motivated by self interests, which can increasingly dominate the narrow interest of the community. However, such interests should be replaced by a broader civic vision that penetrate social and physical barrier (Sanoff 2000: 26). Thus, it is increasingly important to seek a sense of community, a sense of unity, in order to create a sustainable community.

This project is about the need to strengthen community as an organization in order to continually reflect on the need to reduce risks of flood, to continually learn from their surroundings about the activities related to flood and related to community improvement, to increase information sharing between communities in the area, and to take initiatives in implementing the proposed solution to flood mitigation.

On the substantive matter, it is essentially an effort to disclose knowledge about flood mitigation that is embedded among the community members, to disseminate it among other members in order to enable them to be aware of problems of others, to encourage them to participate actively in building initiatives for the interest of the community.

The project team acts as a facilitator that helps the community to start believe in their own capacity, to encourage them to discuss their own problem as a community, to bridge the gap on knowledge owned by the local government and those in the community, and to develop their own programs and project to help solve their own problems. The team helps assist the community to develop organization, mobilizing resources and implementing action. However, the team will not intervene in the nature of creating community organization, of resource mobilization and of implementation. Problems and issues emerged, caused by frictions among community members, will be left to the community to solve.

² For many, “community participation can be implemented as mobilization rather than participation..in which the community groups have rarely been given the power to choose how they should be involved” (Gilbert and Ward. 1984 in Abbott 1997: 16).

1.3.2. Parameter Used

Since this project is about community initiatives it is not easy to identify the parameters that can be used to determine the degree of success of the project. The team is continually documenting activities done between the team and the communities, either in the form of visual or written documents. Several document forms can be identified as parameters of success. Those are:

1. Copies of materials for preliminary study and community profiling;
2. A list of trainees with their signatures, including names, titles;
3. Copies of training materials in national language and training evaluation;
4. A list of members of project organizations and its job description;
5. A copy of the final report of the cooperative project between ADRC and BAKORNAS-PB of Indonesia.

1.3.3. Communities to be Studied

The project uses a case study of two communities in the city of Bandung. The communities are located in the south east side of the city, under the administrative boundary of *Kecamatan* Rancasari and *Kelurahan* Cisaranten Kidul. The area has been used for agriculture especially paddy field. Path of irrigation network can still be found which indicates that the area once was water-rich. Today, Cisaranten Kidul is well-known for its flood-prone condition rather than for its rice production.

The reasons this project chose Cisaranten Kidul as a case study, are generated by several themes:

1. it is the areas that are well exposed to the public through a continual coverage made by the local media including local newspapers³. Yet the nature of floods continue to intensify and the response from the communities have been indifference at best;
2. There have been increasing health and prosperity concerns of living in the flood prone areas, particularly in relation to population pressure and to demand for housing sites. Efforts to improve their lives cannot be advanced;
3. there has been some coping mechanisms developed by the community members in relation to living with floods. The team is recognizing that community initiatives on reducing the risk of floods has existed prior to the initiation of the project;
4. Mawil Hansip of Bandung city, which is responsible for relieving the burden of disaster in the communities affected, recommends the area as a site of choice.

The project team decided to choose two communities, each tied as a neighbourhood unit called RW (*Rukun Warga*). The case studies are two RWs: 09 and 14. Both communities are located in the same *kelurahan* dan *kecamatan*.

1.3.3.1. RW 14

RW 14 is located in a new real estate complex called Riung Bandung. It is parts of the six RWs that are all located in the complex. Riung Bandung is a relatively newly-built complex, and RW 14 is one of the area containing small lot size. Many of the residents are members of a lower-ranking military officers and their family whose ownership is helped by a subsidy from a local

³ Local daily newspapers such as *Pikiran Rakyat*, *Metro*, and *Galamedia* continually cover Cisaranten Kidul for its flood prone activities.

cooperative. Currently the main occupation of the residents is in non-agricultural activities with about 40% are retirees. Such occupation indicates the living arrangement that is urban: with relatively fixed time-schedule, and employing domestic servants to help run the households.

The drainage system that has been designated for the complex is considered small with a width no more than 35 cm and a depth of average 40 cm. The drainage system is poor that it is not easy to recognize which network functioned as the secondary or tertiary.

In a two hour worth of rain, the area can get flood that vary between 10 cm to 80 cm. The hardest hit is RW 14 which is located in the lowest point within the complex. So far, there has not been a need to evacuate the residents. Instead, they have developed a community coping mechanism in order to prepare themselves in case flood is coming. For example, they have to stay overnight, particularly in response to sudden floods as a result of high debit of water from upstream part of the river.

1.3.3.2. RW 09

RW 09 is located on the meeting area of two rivers: Cinambo dan Cisaranten. This area is considered to be lowest point of the flood plain in the city of Bandung. On many occasions, when the rain is non-stop, flood can easily form. The magnitude of damage is often reinforced by the fact that housing is built traditional: high density buildings, temporary materials and narrow foothpath. The drainage system is almost non existent, except for soil being dug to look like drainage.

The orientation of the community is in transition, which means that some of the community members engage in occupation related to agricultural, and others in industrial, mainly as construction workers. The lifestyle of residents in RW 09 is a mixed between modern and traditional. Some of the houses do not have toilets, some still do animal husbandry such as chicken or goats.

RW 09 is one of the community in the city of Bandung who often get help from the local government. In September 2000, there has been 100 cm of floods that force the community to evacuate to the nearest housing complex (Pita Loka).

However, even with the condition of frequent floods that often flash out the belongings of the community, many do not consider of moving out from the area. This is particularly true for community members who have lived in the areas for generations. They feel they have a connection with the area. The area has been their source of living for generations. It becomes a "sacred place". Living with floods is the reality they have to accept if they still want to connect with the area where they are born into.

1.4.METHOD OF RESEARCH AND PROJECT ORGANIZATION

1.4.1. Method of Research

The chart #1 in the next page shows the scheme of activities of the project. Implementation in this project will be divided into nine stages. They are:

1. Preliminary Study,

Preliminary study comprises of a review on reports, studies, policy documents, and interpretation of information on the geographical location of the project. Meetings with agencies related to flood are initiated in order to introduce the project, to ask for their expected roles and contribution, and to gain feedback regarding the implementation of the project. At this stage, based on the data and information, the sites for the project is selected.

2. Community Profiling

Community profiling is an effort to look at the current condition of the community in relation to their capacity to deal with the risk. The community profiling is presented as:

- a) level of community vulnerability which is the risk level in relation to typology of the community affected by flood. The measures include the age and sex structure of population, type of houses, location of houses, type of infrastructure to deal with flood;
- b) level of community cohesiveness means the level of participation among community members to help themselves, to help each other, to take initiatives to reduce risks, and to be together in the case of flood. This includes measures such as, whether or not they have enough knowledge or take action to help themselves and each other in the case of flood disaster strikes, their use of response system, their use of local techniques or technologies, and;
- c) economic activities, are one of the determining factor in the ability to respond to flood. Those whose occupation is located in flood plain area get a loss twice: first loss of stay area from the residential area, and second, loss of income as a result of loss of occupation.

Data used for community profiling is obtained through secondary sources such as books, reports, and unpublished data. However, data from primary sources, including from Participatory Rural Appraisal method used in participatory approach, are essential to develop community profiling.

3. Training and Participatory-Based Planning for Flood Mitigation

The team develop a training and community participation to help communities to condition themselves with the issues presented in the project. Training is provided to some of the community members. The aim is to familiarize the community members with the issue of flood from different point of view such as presented by some technical and government institutions. and The materials for training include:

- a. current policies on flood relief and mitigation, including the current response systems that have been developed by the government, governmental agencies involved in disaster relief, and prospective policies to be developed in the future in relation to the roles of the communities;
- b. technical issues on nature and flow of floods, some principles on handling floods, characters of floods in Bandung city, designing construction for flood mitigation, drainage system and irrigation system in the areas, and;
- c. the approach to be used in community participation. The team is designing the community participation based on the method called Participatory Rural Appraisal (PRA). The introduction in training is related to the principles, what should be done, the expectation, the techniques used and how to handle differences and political situations.

Community participation is conducted by the team with the help from the community leaders who have involved in training. At this stage, the community set up meetings, determine location of meeting and contributing to issues and activities in conducting participation in their communities. The team helps facilitate the participation and provide some expertise when needed.

5. The community is expected to come up with alternative programs for their communities, set up priorities, detailing the benefits, the cost and the duration of each program.

The highest priority of the program will be developed into a project to be done for and by the communities itself. The proposals should be submitted by the communities. They are then reviewed by the steering committee who then provide some inputs in order to help implementing the proposals. At this stage, in the end of March 2001, the team will submit a report to ADRC to conform with the Japanese fiscal year.

6. *The implementation of the project is mainly done by the community.*

They are to conduct, mobilize resource, develop organization, and deliver tasks to members of the communities in order to materialize the project. The team is monitoring the implementation of the project.

7. *Evaluation and feedback is to be done by the team and will be reported to the steering committee.*

The communities will be asked to provide feedback as well. The team will also write the final report to be disseminated as written results.

Figure 1.1 provides a simple explanation on the stage of the study.

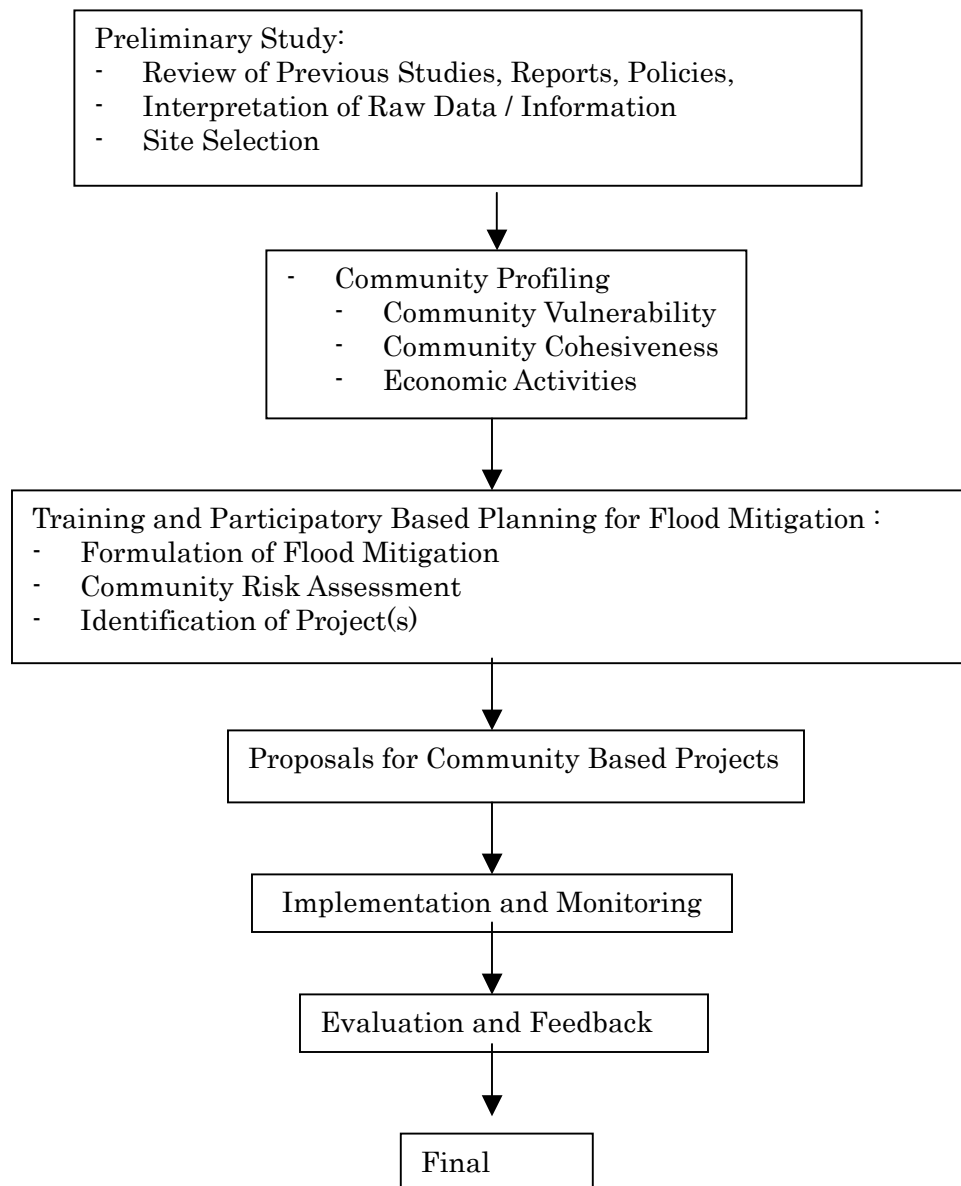


Figure 1-1 Scheme of Activities

1.4.2. Organizing The Project

Figure 1.2 shows the structure of the project organization and the involvement of the participating agencies.

The project is an initiative supported by Asian Disaster Reduction Center (ADRC) located in Japan, in partnership with National Coordinating Board for Disaster Relief of Indonesia (*Bakornas PB*). Research Institute of *Institut Teknologi Bandung (LP-ITB)* is the implementing agency helping *Bakornas PB* executing the project.

The project team is an executing part of LP-ITB. The work of the team will be supervised by a steering committee. The committee helps direct the project activities and provides feedback to the monitoring of the project and contribute to the activities of the project. The steering committee members are:

1. Asian Disaster Reduction Center (ADRC) whose interests lead to an agreement toward executing this project. Their inter-country cooperative projects that expand from Nepal, Sri Lanka, Cambodia and Indonesia allow for developing financial and technical assistance in Indonesia;
2. *Bakornas PB* is the Indonesian counterpart of the ADRC. *Bakornas PB* is expected to provide supports and assistance in relation to the roles of the governments in disaster relief, prospecting roles in the future in relation from the Indonesian side;
3. *LP - ITB* who executes and coordinates the project, manages the resources, either in kind or knowledge, necessary for the running the project. LP-ITB is cooperating with the local NGO to help design and run the community participation part, and connect with the expert team who help with the developing materials for training and community participation;
4. Local Planning Board (*Bapeda*) of the Municipality of Bandung who facilitate, coordinate meetings with the officials at the community level, the community leaders, to help assist with community participation and to provide supports for forum and the discussion. *Bapeda* also provides data and information regarding the locations/sites to be selected;
5. *Puslitbang Permukiman* (Research Centre for Human Settlement) helps out with their local knowledge on housing conditions, housing criteria, and appropriate technology for model-housing in risk prone areas, particularly when the community asked for it;
6. *Puslitbang Air* (Research Centre for Water Resource Technology) assists with knowledge on flood hazards, local flood warning, and appropriate technology for flood warning;
7. *Satlak DT II*, this local agency is specifically deal with mitigation and recovery phase of the disaster, their knowledge on the capacity of the local community will be used as well as assist the project team to reach the community. The team will ask helps from the third tier of government level (*kecamatan*) regarding the government's rescue mission at the local level;
8. *PMI cabang Bandung* (Bandung branch of Red Cross Organization) which provide knowledge in disaster relief efforts and volunteers to help with the implementation of the project, especially when the communities ask for their help and knowledge.
9. *Dinas Pengairan of Bandung City* (Irrigation Section of Bandung City) which has extensive knowledge on irrigation system and its transformation to be functioned as drainage system, especially in areas where housing complexes have been constructed.

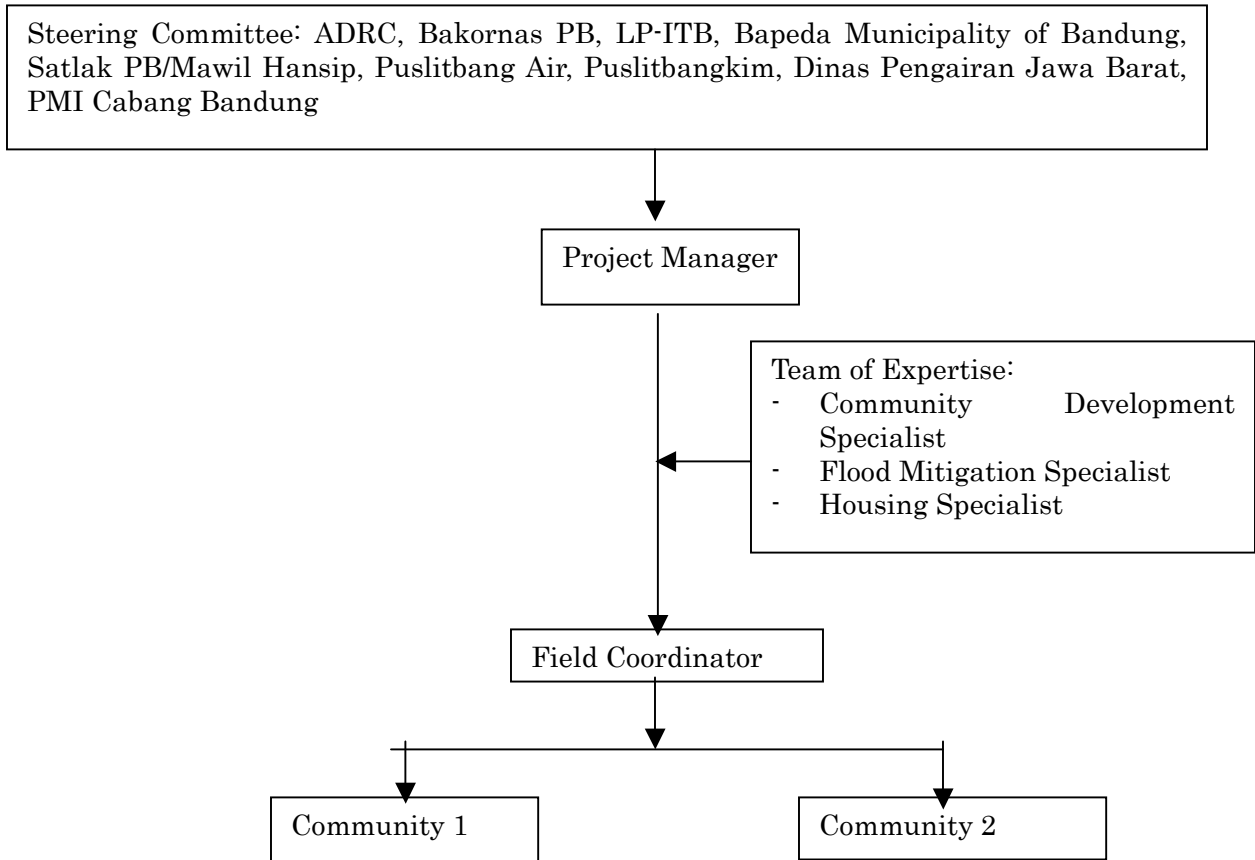


Figure 1-2 Organization of the Project

Aside from the steering committee, there is a project team which consists of :

1. a project manager, who coordinates the running of the project activities, ensures that the project tasks are fulfilled and are responsible for the coordination between the steering committee and the project team;
2. Team of Expertise who are community development specialist, flood mitigation specialist, and housing specialist. They act as resource persons in community profiling, help prepare training module, develop a model of participation, and help the communities with the technical parts of the implementation of their projects;
3. Field coordinator, coordinates the implementation of the training modules and activities to the communities, ensures that the study areas are prepared for the tasks of the project, and assists the community in training and participation stage, identification of the project proposed, and implementation of the project. They also monitor the progress of the projects being implemented.

Aside from the participating agencies that are parts of the steering committee, there are participating agencies at the community level. They are local community planning board,

community officers from *kecamatan* and *kelurahan*, and community based organizations such as religious groups or youth groups. They are expected to be the active participants in the project.

1.5. EXPECTED RESULTS

It is expected that the community has a broader vision over effort to help themselves in reducing the risks related to flood. They can use the occasion to use resources to communicate with other communities regarding the flood condition in their areas, and to develop community based coping mechanism that orient itself towards mitigation.

The project itself is not an appropriate measures of the success of the project. It is the refining of the process, and develop a process of community participation that is suitable for communities in flood prone areas are considered to be the end result of the activities.

It is expected that the result of the project will be an input for many institutions at the city level to use as a model for community-based flood mitigation for other communities facing similar situations. This will be the first time for the Municipality of Bandung to be involved in the experience of community participation for flood mitigation activities.

1.6. ORGANIZATION OF THE REPORT

The next presentation of the project will be in eleven chapters. The second chapter presents the community profiling of the communities. The third chapter describes the training section. The fourth chapter talks about Participatory Rural Appraisal (PRA) as used in community participation for flood mitigation. Chapter five describes the nature of the projects identified by the communities. Chapter six explains about the plan to develop participatory flood mitigation activities. Chapter seven describes about meetings and coordinating needed to prepare for participatory flood mitigation activities. Chapter eight describes about facilitating and participation in the implementation of the projects. Chapter nine is on implementation of participatory activities, including problems and solutions that have been done in implementation. Chapter ten explains about future activities needed. Chapter eleven is on epilogue.