

# [Flood coping mechanisms](https://assignbuster.com/flood-coping-mechanisms/)

## Adaptive Strategies of household in terms of flood coping mechanism.

## Introduction

### Background of the problem

### International and national literature related to the problem to be studied

Floods are defined as extremely high flows of river, whereby water inundates flood plains or terrains outside the water-confined major river channels. Flood hazard is measured by probability occurrence of their damaging values, conceived generally as flood risk, or by their impact on society, conceives usually as the loss of lives and material damage to society (Rossi et al., 1994).

Flood is natural events that can occur at any time and often able to create loss and damage that can be suffered by property, population and environment. Flood event cannot be prevented, but it can only be controlled and reduced the impact. Flood came relatively quickly, so we must have the effective strategies in order to reduce the impact from flood event.

Flood is the most damaging event in Indonesia. Of total disaster in Indonesia, 57. 43% is floods. Those events cause 587, 190 affected people and 68 casualties (Badan Nasional Penanggulangan Bencana (BNBP/National Coordinating Board for the Management of Disaster), 2008).

Geographically, Sampang is located in Madura Island and included as plain area because it has elevation almost the same as sea level. Due to this physical condition, Sampang, as a waterfront city, has been suffering with flooding almost every year. Combination between high intensity of rainfall and high tide of sea, improved water discharge of Kamoning River and then inundated several areas in Sampang. The triggering factor is small holding capacity of Kamoning River.

The strategies from local community to cope the flood are mostly developed by the initiative of affected community in inundated area. For instance, they have added the floor height or the number of floor in order to avoid the water flow and save their belongings. The coping activities that have been done by local community revealed due to the disability of local community to move in safer area. Besides, those coping strategies also have uniqueness related to the physical condition of this area. It means that the strategies can be explored through several perspectives, e. g. the magnitude of flood, income, education, etc.

By elaborating the existing adaptive strategies in Sampang Regency, it is expected that the general and specific description of flood coping strategies can be obtained as an effort to establish the recommendation in case of local government policy in facing with a given flood.

### 1. 2. Statement of Problem

Flood becomes a major issue for the local government of Sampang Regency because it is one of the most frequent and most disastrous natural events. Tremendous losses and damages as results of severe flood have been occurred. Historically, Sampang City already has been stricken severe flood in three times which were in 1921, 1991 and 2002. The most flood disaster in Sampang was in 2002, where a third area of Sampang was affected and caused more than 14 casualties, many damaged houses and public infrastructures, and many evacuated people. The recent of flood occurrence in Sampang were in 2008 and 2009, where the flood event has a little damaged.

The flood occurrences in this regency demanded the awareness both from local community and local government for conducting disaster reduction actions. Those actions were aimed to minimize the impact of flood. One of those actions is flood investigation in terms of flood characteristics and coping strategies. The action is intended to gather information related to the characteristic of flood, how the affected community survive with flood, and the coping strategies that have been done by the local government.

The collected information about flood and flood coping strategies will be useful as an important input to arrange capacity improvement in disaster reduction process. On the other words, local community and local government will be involved in establishing the more appropriate flood coping strategies, particularly by examining flood characteristics and existing flood coping mechanism. Moreover, it can be decided whether the existing flood coping strategies are adequate or not.

There are many parts of Sampang Regency which are often stricken by flood every year, but the study about flood has not been done yet. Besides, more detail of local community’s strategies in overcoming the flood is not established. Local government commonly only calculated the losses and damages without investigating the flood characteristics and coping strategies done by local community.

Find the thesis with Sampang as study area.

### Research Objective

General objective of this research is to identify the adaptive strategies of household to cope the flood event and local government actions in supporting the strategies. The general objective is then elaborated into four specific objectives, as follow:

To identify the characteristics of the flood.

To explore the adaptive strategies of household to cope the flood.

To recognize influencing factors of selected adaptive strategies.

To identify the government strategies in terms of reducing the flood impacts.

### Research Questions

The main question of this research is what are the adaptive strategies of households to cope the flood event and how can local government support the adaptive strategies in reducing the impact of flood

Sub questions are:

* What are the characteristics of the flood event?
* What are the adaptive strategies of household to cope the flood?
* What are the factors that influence the selecting adaptive strategies?
* What have done by local government to cope the flood in term of reducing the impact of the flood event?

### Research Method

\* Make the adaptations necessary to adjust the text according to your own situation:

### Type of Research

The type of research is an explanatory research which seeks to identify the adaptive strategies of household to cope the flood event and local government actions in supporting the strategies of household. This research will use qualitative and quantitative method.

### 2. 2. Data Collection

### Literature study

Secondary data will be collected mainly from government institutions, various data will be collected is listed on the following table:

Table Secondary Data

|  |  |  |
| --- | --- | --- |
| No | Data Type | Source |
| 1 | Annual report of JFP & Perum year 2008 | JFP, Perum of JFP |
| 2 | Documentation of tidal flood (picture and report) | JFP, NJM |
| 3 | Fisheries statistic year 2008 | JFP, BPS, Perum of JFP, NJFA |
| 4 | Spatial Plan | NJM |
| 5 | Flood Preventing Program | JFP, NJM |

### Flood Preventing Program

JFP, NJM

Secondary data such as (reports, articles, etc) will be collected through a literature study from (governmental agencies, private, other). The sources of secondary data are shown in the following table X; 2. 2. 2. Fieldwork Primary data will be collected through a fieldwork for (duration, time of the data collection and place (s)). The research instruments will be a combination of an (in-depth interview, survey with questionnaires, others). The choice of key respondents (government officials/ experts, others) for interviews (with semi-closed interviews, closed interviews, etc) is based on a (purposive or other way of sampling). Further, the list of respondents to be interviewed is shown in the table X1; The research population at which the survey about (perception or other issue) using (questionnaires and/or other instrument) will be applied to (citizens, NGOs, etc..) The sampling technique for selecting respondents from citizens is a (purposive, random, or other) sampling. Considering that time and finance are the main limitations of the research, the expected number of respondents is X . The dissemination of questionnaires will be done by (visiting offices, schools/campuses and association centers of respondents, by using internet or other means). The list of respondents is presented in the following table X2; 2. 3. Data Analysis

How your collected data will be analyzed, techniques to be used for the analysis (statistic methods: means, percentages, frequency distribution, etc)) and for the display and organization of the collected data (tables, matrix, graphic (type)).

Unit of Analysis, Variables and Indicators

Unit of analysis of this research is the ……………… Variables and indicators are summarized in the following table X3; 2. 6. Research Design In order to have a clear guidance about how to do the research, it is necessary to make a research design. The research design consists of some stages as is shown in the following figure X

The thesis report will be structured into X chapters.

Those six chapters are as follows;

Chapter 1 includes the background of the problem, problem statement, justification of study, research objectives, research questions and hypotheses.

Chapter 2 deals with literature review/conceptual framework used in the research.

Chapter 3 describes the general condition of the research area.

Chapter 4 explains the research method.

Chapter 5 discusses the results/findings of the research.

Chapter 6 is concerned with conclusions and recommendations

Time Framework

Table X; Important dates and deadlines

Budget

Table X; Budget of research

## Reference List

Appendix 1; Copy of the Interview Questions to be used in the field visit

Appendix 2; Copy (s) of the Questionnaire(s) to be used in the field visit.

Appendix 3; Map of the research area.

## CHAPTER III

## RESEARCH METHOD

Research method used deals with the goals and objectives achieved in this study. It consists of pre field, data collection method and data analysis method.

### Preparation

This stage has main purpose to prepare some certain materials which will be used in the field data collection. There are three main activities, which are literature review, design survey, and questioner. The literature review is a process to obtain research background justification and to formulate research questions. Then, it is harnessed as a guide in the research process. The literature review itself yields a theoretical background that provides framework analysis of the research. It also organizes such kind of research which should be accomplished in order to achieve the research objective.

### Data Collection

The data needed for the research analysis are primary and secondary data. Primary data collection interview both household and contact person in particular community (government official, community leader, NGO, etc).

Questioner distribution will be held by considering the number of samples taken. In this case, the number of samples is obtained by using the following equation (Public Work Department):

n = [image]

Where :

n = The number of samples

N = The number of population (3 Sub district 29337)

d = The level of significancy for about 10% (it represents all population)

Regarding to the equation, the number of samples used is 100 samples (see the following calculation):

= 99, 66 = 100

On the other side, the secondary data are gathered from literature review and previous research reports. Secondary data are the available statistical data compiled from those institutions.

The result of this fieldwork is a database containing all information related with people perception on flooding, physical aspects (structural types of buildings and building contents) and socio-economic aspects (age, gender, occupation, income, educational level, length of stay and housing status) and people’s coping mechanism due to flood.

### Data Analysis Method

The method of analysis is a descriptive analysis that explores and investigates the data. Questionnaires were double checked for differences and corrected, and individual and housing records linked using SPSS software. The main variables collected from the households interviews such as : height of water level during flood, and the duration, flood history, coping mechanism, and the socio –economic were analysed.

From the analysis, it is expected to find a new integrated flood management that is possible to apply in overcoming flood hazard in Sampang Regency. The output from this analysis process will be utilized as a guide to develop a new flood management system.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Research Question | Variables | Indicators | Data Source | Interview Question Numbers |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| * What are the characteristics of the flood event?  |  |  |  |  | | --- | --- | --- | --- | | Characteristic of flood | * History of Flood * Cause the Flood * Flood Depth * Flood Duration | Interview (using questionnaires) with households, and observation |  | | The Impact of Flood | * Physical Damage   + Infrastructure   + House/Building   + Appliance   + Furniture   + Outside properties * Economic   + Income   + Occupation   + Disruption in business * Social   + Injuries sustain   + Illness suffered   + Loss of life | Interview (using questionnaires) with households, and observation |  | |  |
| * What are the adaptive strategies of household to cope the flood?  |  |  |  |  | | --- | --- | --- | --- | | Economic | * + Reconstruction of house with the reinforced material   + Preparing place for storage at the higher place   + Storing basic food items such as : rice and sugar   + Building dikes in front of house using sand bags   + Repairing minor damage of the appliance   + Repairing important damage to the house   + Fixing things   + Continue working   + Purchasing cheap food   + Repairing minor damage of the appliance   + Repairing important damage to the house   + Saving money | Interview (using questionnaires) with households. |  | | Technological/structural | * + Construction of house with the reinforced material   + Closing the door and windows properly to avoid water   + Do nothing   + Securing house entrance to avoid debris   + Cleaning the house by draining   + Repairing minor damage of the appliance   + Repairing important damage to the house   + Fixing things   + Cleaning the canal surroundings the house | Interview (using questionnaires) with households. |  | | Social | * + Cleaning the house and surroundings   + Continue patrolling the neighborhood   + Helping other’s community member in doing work   + Guarding the house to ensure safety belongings   + Searching relief materials   + Evacuating the family, especially children and elderly to the safer place,   + Preparing temporary place at friend’s or relative’s place   + Preparing place for storage at the higher place   + Cleaning the canal surroundings the house | Interview (using questionnaires) with households. |  | |  |
| * What are the factors that influence the selecting adaptive strategies?  |  |  |  |  | | --- | --- | --- | --- | | Physical | * + Infrastructure   + Geographic Location | Interview (using questionnaires) with households. |  | | Economics | * + Status of Property   + Income   + Occupation | Interview (using questionnaires) with households. |  | | Social | * + Household’s size   + Household’s structure | Interview (using questionnaires) with households. |  | |  |
| * What have done by local government to cope the flood in term of reducing the impact of the flood event?  |  |  |  |  | | --- | --- | --- | --- | | Structural | * + Build dykes,   + Build dam,   + Build reservoir,   + Improve infiltration of rainfall into the ground. | Interview with local institutions which have duties related to disaster coping mechanism |  | | Non structural | * + An early warning system   + Regulation | Interview with local institutions which have duties related to disaster coping mechanism |  | |  |

The sample was chosen from households affected by coastal erosion/flooding and the ones who knew the details of adaptation strategies. A sample of 40 households was selected randomly.