

CHAPTER I

INTRODUCTION

This chapter consists of the background of the research, problem formulation, research objectives, research scope, and outline of the research.

1.1 Background

Disaster is a phenomenon that threatens human life. According to UU No 24 of 2007, the definition of disaster is a phenomenon that disrupts human's lives caused by natural and non-natural factors which results in the occurrence of casualties, environmental damage, loss of property as a psychological impact. Disasters consist of three types, namely natural disasters, non-natural disasters, and social disasters. Natural disasters are disasters caused by phenomenon caused by natural symptoms that can result in environmental damage, material losses, or human victims (Kamadhis UGM, 2007). Earthquakes, tsunamis, volcanic eruptions, floods, droughts, hurricanes, and landslides are included in natural disasters.

National Disaster Management Agency (BNPB) published Indonesia Disaster Prone Index (IRBI) in 2014. Indonesia Disaster Prone Index is a disaster risk portrait in each region in Indonesia. IRBI is the result of the analysis of hazard values (Hazard/H) and capacity values (Capacity/C) in an area. IRBI shows that West Sumatra is one of the most vulnerable regions to natural disasters (in the red zone) as can be seen in **Figure 1.1**

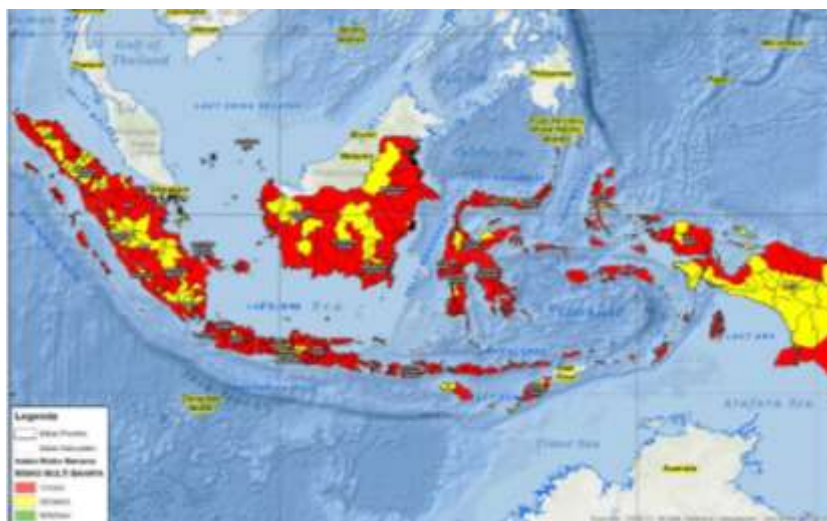


Figure 1.1 Map of Indonesia Disaster Prone Index

Source: BNPB

Padang city has a topography that has potential disasters that will have a different impact on the natural environment and social conditions. The area of Padang City is on the coast of the western part in Sumatra Island, which consists of hilly areas and gentle slopes. In addition to the mainland island of Sumatra, Padang City has 19 islands where the largest are Sikuai Island in Bungus Bay, Kabung District, Toran Island, and Banana Gadang Island in Padang Selatan sub-district (Renkon Kota Padang, 2013).

Padang City is directly adjacent to the Indian Ocean and two active plate impact zones that make this city one of the most tsunami-prone cities. Padang City is a disaster-prone area due to its location in the collision of the Indian Ocean Plate and the Australian Plate, which infiltrated beneath the Eurasian Plate, which is actively moving west-east which is an earthquake zone with high seismicity. Disasters often hit Padang City, such as landslides, earthquakes, and tsunamis. This city indeed is an area that has enormous potential due to natural disasters.

Every district/city in the province of West Sumatra has the potential threat of natural disasters. Padang City as the centre of government of West Sumatra Province is in a high-risk danger zone because it has been hit by disasters, such as landslides, floods and earthquakes. The potential for disaster threats for each district and city in West Sumatra can be seen in **Table 1.1**.

Table 1.1 Disaster Potential Dissemination in West Sumatra

No	Region	Potential Disaster					
		Earthquake	Tsunami	Flood	Volcano	Landslide	Fire
1	Padang City	v	v	v		v	v
2	Pariaman City	v	v	v		v	v
3	Bukittinggi City	v			v	v	v
4	Padang Panjang City	v			v	v	v
5	Payakumbuh City	v		v	v		v
6	Sawahlunto City	v				v	v
7	Solok City	v		v			v
8	Padang Pariaman	v	v	v	v	v	v
9	Agam	v	v	v	v	v	v
10	Pasaman Barat	v	v	v	v	v	v
11	Pasaman	v		v	v	v	v
12	Limapuluh Kota	v		v	v	v	v
13	Tanah Datar	v		v	v	v	v
14	Solok District	v		v	v	v	v
15	Solok Selatan	v		v	v	v	v
16	Pesisir Selatan	v	v	v	v	v	v
17	Sijunjung			v		v	v
18	Dharmasraya			v		v	v
19	Mentawai Islands	v	v			v	v

(Source: BPBD West Sumatera Province, 2011)

The potential for earthquake or tsunami hazards in Padang City will have a substantial negative impact. It is because Padang City has the most considerable population growth rate compared to all cities in West Sumatra Province. A large number of population growth in Padang City indicates the more significant threat of mortal loss and material. The population in West Sumatra can be seen in **Figure 1.2**.

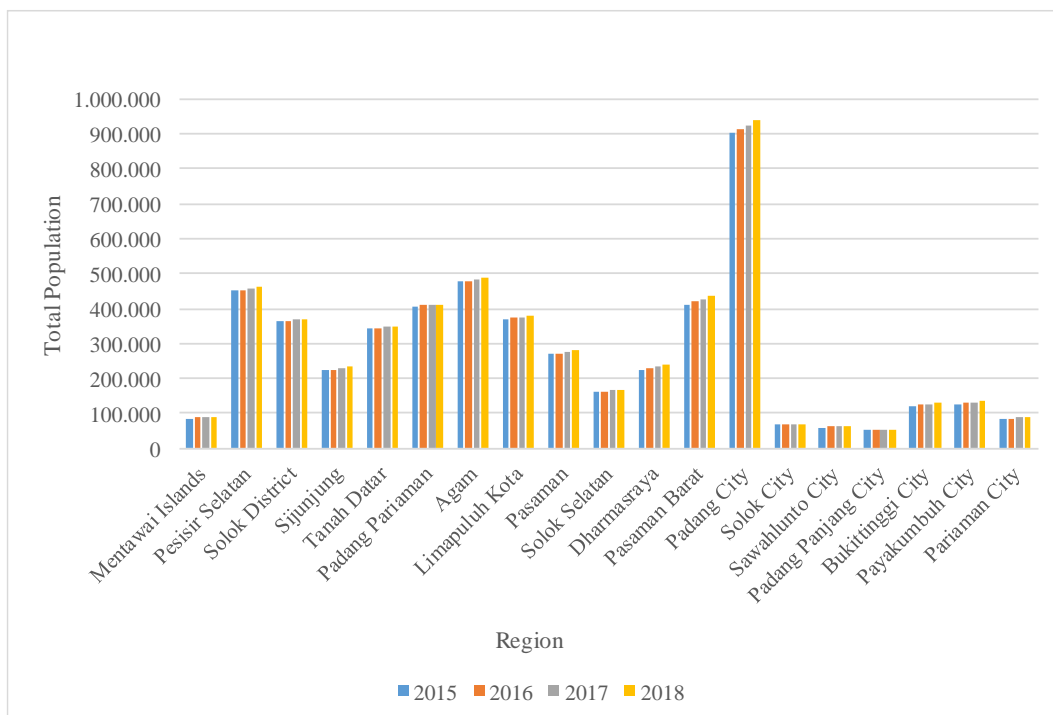


Figure 1.2 Population Growth of West Sumatra Province
(Source: BPS West Sumatra Province, 2018)

A large number of population growth in Padang City will cause a higher number of lives to be threatened compared to other districts/cities on the west coast of Sumatra. The number of people potentially threatened due to disasters can be seen in **Table 1.2**.

Table 1.2 Number of Population Threatened in Districts/Cities at West Coast of Sumatera

No	Region	Total		
		Subdistrict	Village	Potential Life Threatened
1	Pesisir Selatan	15	182	518.265
2	Padang City	11	104	883.767
3	Padang Pariaman	17	103	462.125
4	Pariaman City	4	71	88.984
5	Agam	16	82	524.906
6	Pasaman Barat	11	19	428.641
7	Mentawai Islands	10	43	83.517

Source: www.kemendagri.go.id

Disaster management is an applied science that systematically observes and analyses disasters to improve actions related to preventive, mitigation,

preparation, emergency response, and recovery (Purnomo, 2010). Emerging disasters require rapid, appropriate, integrated, and coordinated handling through prevention, rescue, rehabilitation, and reconstruction activities. Disaster management is used to control the situation and prepare a disaster risk reduction plan for people affected by the disaster.

UU No 24 Clause 5 of 2007 states that disaster management is the responsibility of the government and regional government. Activities carried out in disaster management according to UU No. 24 of 2007, including prevention and mitigation, preparedness, emergency response, and recovery, which included rehabilitation and sustainable development. Disaster management is a dynamic process; the process consists of a classic management process that provides for planning, organizing, division of tasks, control, and supervision. This process also involves a variety of organizations that must undertake resolution, preparedness, emergency response, and disaster recovery.

One of the essential activities in disaster management is the logistic activity. In tackling disasters, humanitarian aid logistics activities have two main functions, namely disaster preparedness and response. The success or failure of a disaster management activity depends on logistics management being implemented. In good logistical management of humanitarian assistance, several things need to be taken into account, namely efficiency, effectiveness, timeliness (Nappi, 2015), and speed (Sheu, 2007).

The emergency response phase is very important because this phase is a series of activities carried out immediately in the event of a disaster to deal with the adverse effects caused by the disaster. The purpose of disaster emergency response is to be able to assist (emergency food, water, medicine, shelter, and equipment) quickly and precisely to areas affected by large-scale emergencies, to minimize suffering humans and even death rate (Baemon and Balcik, 2008). In emergency response operations there are supporting facilities needed to increase effectiveness and accelerate disaster response. These supporting facilities are command posts,

human resources, warehouses, transportation facilities, equipment, communication tools, and data as well as disaster information and disaster impacts (Perka BNPB No. 10 of 2008).

One of the essential things in disaster emergency response operations is determining the location of warehouse facilities. The site of warehouse facilities intended here is the location of the logistics warehouse for storing disaster relief goods and equipment. Determining the location of the warehouse dramatically affects the impact of the existing disaster. A strategic warehouse location is needed so that the process of distributing disaster assistance can reach all the intended disaster victims. Determining the area of logistics warehouses as a storing place and distributing aid has the aim of increasing disaster preparedness if a disaster occurs in the future.

This research was conducted to provide the Regional Disaster Management Agency (BPBD) about the location of logistics warehouses in Padang City. The proposal was given to the location of the warehouse in each village located in the green zone of the Padang City tsunami evacuation route. The new site obtained is a strategic location that can meet all the needs of refugees so that the quality of disaster management can be improved, such as delays in delivery of logistics that can be resolved and minimize losses that may be caused by disasters.

1.2 Problem Formulation

One of the various supporting facilities for emergency response operations to improve the effectiveness of disaster management is warehouse facilities. Warehouse facilities are useful for storing logistical items so that they can be distributed to disaster victims. In choosing a warehouse location, various aspects need to be considered so that the most strategic warehouse location priority is obtained. Therefore, the main problem in this study is how to determine the criteria for choosing a warehouse location so that the location of the disaster logistics

warehouse can be obtained based on these criteria to optimize the evacuation of disaster victims in Padang City.

1.3 Research Objective

The purpose of this study is to select the location of logistic storage warehouses, including equipment warehouses, to support emergency response operations that consider various aspects.

1.4 Research Scopes

The scopes of this research are as follows :

1. Candidates for warehouse locations candidates are in an urban area that is not in a tsunami-prone zone in Padang City.
2. Unit analysis in this study is a jurisdiction where a community is governed by a village chief which is called a village (kelurahan)
3. This study only determines the location of the warehouse to store logistical items and equipment

1.5 Outline of Research

The outline of this final project proposal consists of three chapters with the systematic chapters as follows:

CHAPTER I INTRODUCTION

This chapter consists of the background of the research, problem formulation, research objectives, research scope, and outline of the study.

CHAPTER II LITERATURE REVIEW

This chapter contains literature that supports research and other things related to research.

CHAPTER III RESEARCH METHODOLOGY

This chapter discusses the research methodology that is used in this final project. Research methodology describes the systematically step to solve the problem of this research, from the beginning until the end of the study.

CHAPTER IV DATA COLLECTING AND DATA PROCESSING

This chapter contains data collection and processing data regarding determining the priority of the warehouse location. The steps taken are formulating criteria, identify the weights of each criterion, and ranking potential location candidates.

CHAPTER V DISCUSSION

This chapter discusses the analysis of the weights of each criterion and results from warehouse location ranking.

CHAPTER VI CONCLUSION AND RECOMMENDATION

This chapter contains conclusions from the research and recommendations for future research.

