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Social Communication and Multi Stakeholder Participation in Managing Flood Disaster in Bojonegoro District

Desi Hasbiyah[a]*, Abubakar Iskandar[b], Dede Syahrudin[c]

[a]*Communication Science Djuanda University Ciawi Toll Road No 1 Post Box 35 Bogor 16720*
[b]*Postgraduate School Djuanda University Ciawi Toll Road No 1 Post Box 35 Bogor 16720*
[c]*Public Administration Djuanda University Ciawi Toll Road No 1 Post Box 35 Bogor 16720*
[a]*Email: desi.hasbiyah@unida.ac.id* [b]*Email:abubakar.iskandar.adn@unida.ac.id*
[c]*Email:dede.syahrudin@unida.ac.id*

Abstract

Climatologically, Bojonegoro Regency has two seasons, namely the dry season and the rainy season. To monitor the average rainfall in Bojonegoro Regency, it is monitored through 22 rain catcher stations spread across 16 sub-districts. Rain catcher stations as parameters detect potential flood disasters. To overcome the flood disaster, communication between stakeholders is needed. The communication between stakeholders that is designed is communication between agencies and communication with other parties. Horizontal and vertical communication like this generates more anticipatory strength for flood disasters. The aim of the research is to explain social stakeholder communication in dealing with flood disasters, Analyze the social impact of flood disasters, Analyze temporary evacuation places. The approach used is institutional, the method used is qualitative, the research design is descriptive. Informants were taken from 12 agencies with a total of 24 people. In order to access the data, this was done using narratives submitted by victims of the flood disaster. The research results show that the social communication style that occurs in various problems of flood victims consists of several vertical and horizontal networks, including autonomous services, central agencies, and regions or with other parties. Disruption or loss of information about flood disaster victims between stakeholders can lead to misunderstandings so that decision making at the stakeholder level in dealing with flood disaster victims becomes inaccurate. The social impact that occurred was that 126 villages were flooded, 15,114 houses were inundated and 3,884 residents were displaced. In Bojonegoro Regency there is a temporary refugee camp which has a land area of one hectare and a capacity of 1,000 refugees, two fields are used as refugee camps.

Keywords: social communication; stakeholder participation; flood disaster; rainfall; flood disaster victims.

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* Corresponding author.

1.Introduction

Background

Climatologically, Bojonegoro Regency has a rainy season and a dry season. When controlling the average rainfall in Bojonegoro Regency, it is monitored through 22 rain catcher stations located in 16 sub-districts. The rain catcher station is a parameter for detecting potential flood disasters in Bojonegoro Regency. This rain catcher station was then proven to be valid for flood disasters. The question is why did the flood disaster occur? This problem occurs due to the following things (1) functionally there is a change in land function in urban areas causing a lack of absorption areas, (2). a number of embankments have been damaged, (3) Every year there is a flood in Bengawan Solo, (4) destruction or cutting down of forests, (5) minimal development of reservoirs/embungs in the Bengawan Solo area, (6) Mechanized extraction of river sand which can cause disruption main river infrastructure, (7) Shifting the function of land use in urban areas, (8) the presence of people living in areas that have the potential for flooding [1]

In dealing with victims of the dangers of flooding, interaction between various stakeholders is required, for example from the Regional Disaster Management Agency, Social Services , Health Service, Police, Indonesian National Army, Manpower Service, and others. The communication between stakeholders that is designed is communication between agencies in the Bojonegoro Regency area as well as communication with the Provincial Disaster Management Agency and communication with the National Disaster Management Agency. Horizontal and vertical communication like this generates greater anticipation of flood disasters. This kind of communication network is intended to build the intensity of connectivity and openness between stakeholders so as to speed up the response to flood victims [5]

This connection and openness between stakeholders then always results in human relations and public relations. Human relations and public relations are not only done face to face but can be via email, Facebook, WA, SMS, radio, telephone, Instagram, Tik Tok and others. Meanwhile, media communication is very necessary with the aim of informing each other about the latest flood disaster situation [4].

Multistakeholder communication seeks to provide more social participation when overcoming various flood disaster problems such as dealing with material victims, victims of life, victims of housing and even temporary shelters. The importance of multi-stakeholder participation is in order to maintain participation as a slogan that is politically more attractive, more economical in overcoming flood disasters, as a tool or instrument to further increase effectiveness and efficiency in overcoming flood disasters, becomes a tool for mobilizing funds in overcoming flood disasters, can assisting the construction project of Temporary Shelters [12]

2.Research purposes

1. Describe social stakeholder communication in dealing with flood disasters

2. Analyze the social impacts caused by flood disasters

3 Analyzing temporary evacuation places for flood disaster victims

3.Materials and Methods

Research Approach, Methods and Design

The approach in this research is institutional by examining empirical data available in the Bojonegoro Regency Government. Meanwhile, the method used is a qualitative method by carrying out social communication between stakeholders in building connectedness and openness in dealing with flood disasters. Meanwhile, this research design is "qualitative descriptive" which seeks to explain the problem of flood disasters and how to overcome them [13]

Location and Research Time

Location of research in the Regency Bojonegoro, East Java Province, while the research was conducted in January-June 2023.

Research Procedures

The procedures for this research are (a) Identifying the interval between the rainy season and the dry season, (b) Identifying the factors that cause flood disasters, (c) Identifying victims of flood disasters, (d) Knowing the resources for temporary shelter for victims of flood disasters, (e) Identifying material victims and social victims due to flood disasters, (f) Identifying rehabilitation of social victims due to flood disasters, (g) Identifying material damage due to flood disasters [15]

Informants

The purposeful collection of informants was carried out at 12 agencies, namely agencies including: Regional Disaster Management Agency, Social Service, Health Service, Police, Indonesian National Army, Manpower Service, Civil Service Police, Public Works Service, Regional Development Planning Agency , Transportation Service, Information and Communication Service. Meanwhile, 24 informants were selected, namely two people were selected from each agency [15]. The number of informants taken were employees in the Bojonegoro Regency Government [14]

Types and Methods of Obtaining Data

This research takes core data and supporting data. The main data is accessed through communities affected by the flood disaster, while the supporting data for calls is accessed through related agencies [14]. Meanwhile, the way to access the data is through Focus Group Discussions, anjangsana, dialogue, discussions, and documents available at the agency [16].

Information Analysis

In order to access the data, it is carried out using narratives expressed by victims of the flood disaster, with the aim of wanting to know their personal experiences. in this case victims of flood disasters. This personal experience

is then narrated holistically and a solution is sought for the victims of the flood disaster [9].

4.Results and Discussion

Social Communication and Multistakeholder Participation in Flood Participation

Social communication designed to contact stakeholders, namely reciprocal relationships between a number of integrated stakeholders and forming sub-systems into one system for dealing with flood victims. Social communication at the stakeholder level is guided by two indicators, namely stakeholder connectivity and stakeholder desires. Stakeholder connectivity is the willingness of staff and leaders in Bojonegoro district to interact which is measured through the total influx of information between existing individuals, while the desire between stakeholders is the level at which staff and leaders share information about flood disaster victims with provincial or central parties. The interaction connectedness index can be taken through these two indicators, therefore staff and leaders in the district are the units in this analysis [17].

The description above shows the style of social communication that occurs in various problems for flood victims which consists of several vertical and horizontal networks, including autonomous services, central agencies and regions or with other parties. Disruption or loss of information about flood disaster victims between stakeholders can lead to misunderstandings so that decision making at the stakeholder level in dealing with flood disaster victims becomes inaccurate. Network analysis of interactions between stakeholders seeks to explain the density of interactions between stakeholders in the district concerned or fellow staff and leaders with other related people. A true understanding of a clear communication network will be useful when respecting the meaning and objectives to be achieved, namely how flood victims can be accommodated in temporary evacuation places.

Such a communication network indicates that on the one hand there is connectivity between staff and leadership, while on the other hand there is the desire of staff and leadership as well as with other parties as well as between staff or between leaders and other people. In order to understand the degree of connectedness of interactions between staff and leaders, a number of social networks of staff or leaders involved in the communication were included. The social communication designed was in order to ensure that the multi-stakeholder participation process could run well and achieve the target of building a temporary shelter for victims. floods. The multi-stakeholder process seeks to ensure a shared view of engagement, accountability and openness, as well as to build partnerships and networks of diverse multi-stakeholders.

According to [3], stakeholders are individuals, communities, groups or organizations who have an interest in development results, both positive and negative or are able to influence activities in a positive or negative way.

According to [2], stakeholders are people, community groups, or organizations that can influence or be influenced by a policy. Definition of stakeholders such as individuals, communities and/or organizations who have an interest and/or influence/power in the preparation and implementation of a policy. Stakeholders participate in discussing, consulting, hearing and paying attention to the opinions and views of each stakeholder in solving and modifying several inputs. from stakeholders. The discussion and consultation process can offer various ideas and suggestions according to the views of stakeholders. Multi-Stakeholders participate because the plan to build a temporary

evacuation site for flood victims requires resources such as: labor, food and drink, money or other incentives. Multi-Stakeholders participate by forming groups facilitated by the Regional Government or Non-Governmental Organizations. So these two groups can be used as the main and supporting sources in building temporary evacuation places for flood victims. Multi-stakeholder interactive participation must participate from the beginning of handling flood victims until the flood victims can be rehabilitated as before [11]

5.Analysis of the Social Impact of Flood Disasters

As stated above shows that the flood disaster in Bojonegoro Regency was caused by (1) changes in land function in urban areas causing a lack of absorption areas, (2). several embankments were damaged, (3) every year the Bengawan Solo river floods, (4) deforestation, (5) lack of development of reservoirs/reservoirs around Bengawan Solo, (6) extraction of river sand which can cause disruption to vital river infrastructure, (7) changes in the function of urban land use, (8) there are still many people who live in flood base areas [1]

That's why since 2016, there have been 126 villages inundated, with 15,114 households inundated and 3,884 residents displaced. Floods can be interpreted as disasters that often strike as a result of continuous rain in several places and result in an overflow of air across river basins, elevation of residences and careless movement of waste resulting in losses suffered by local communities [1].

Flooding is a disaster that causes death and loss of community resources such as husbands, wives, children and other people. It also causes the destruction of public and special facilities and infrastructure, including educational facilities, as well as some people's residences so that they cannot be lived in and even have to be built or rehabilitated. On the other hand, flood events cause trauma and psychological impacts on humans as a result of the flood events they experience [14].

In accordance with provisions [18] it has a role as a liaison when making efforts to overcome disasters. has a function in overcoming disasters both before a disaster, when a disaster occurs or after a disaster, which is carried out by all stakeholders (government agencies, business institutions and social organizations. One of these efforts is to organize costs, information and communication [14]

The data that is already available can help better preparedness efforts in flood emergencies from planning, organizational arrangements, and mobilization of resources that can be used to help identify victims, shelter and relocate people who are affected by the disaster. On the other hand, the existence of an accurate description of needs and prioritization according to input, information and mutual interaction via the internet, computer and telephone to design precautions, does not make it difficult to mobilize all the necessary resources to the place of disaster. Meanwhile, the situation that always occurs at the scene of a flood disaster is that it is difficult to collect input, information and mutual interactions regarding the readiness of resources that can be mobilized. Until this turn, information and interactions require a long time to be compiled.

Information, news and interactions, which can explain what is already available when dealing with disasters in more affected areas, will be expressed in the form of an activity Formulating preparedness resource conditions. by region. In the absence of these resources, it is impossible to effectively and efficiently prevent disasters and

floods so that people experience losses. The impact is that repair and restoration of public services to an adequate level in post-disaster areas will not be achieved.

6.Analysis of Temporary Evacuation Locations

The condition of emergency shelter locations is locations where emergencies are concentrated for victims of flood disasters or refugees when a flood disaster occurs. Bojonegoro Regency already has a temporary evacuation site that has been built in Trucuk District, with a land area of 1 (one) hectare and can accommodate up to 1,000 people. There are also two fields that can be used as temporary evacuation locations in Trucuk District. Trucuk District with a number of resources such as

a. Accessibility

What is meant by accessibility is ease of access from the shelter location which includes:

-More convenience of 2 and 4 wheeled vehicles;

-Ease of use for pedestrians who have limited abilities;

-Ease of monitoring by placing change routes for people traveling or vehicles and entry points into the shelter location;

-Ease of walking for people must be prioritized

b. Infrastructure

The facility use network system is:

-Traffic route system;

-Ease of obtaining lighting facilities (electricity;

-Easy to obtain communication facilities;

-Ease of obtaining clean water facilities;

-Ease of obtaining waste disposal facilities;

-Ease of obtaining a drainage system;

-Ease of obtaining waste disposal and processing facilities.

Clean water is a primary need for human habitation. Technical provisions and procedures designed by existing regulatory provisions, more specifically regarding general planning mechanisms and procedures for clean water

facilities around the residence, serve as a reference. The source of clean water supply is provided by the local regional drinking water company or its own source from groundwater deposits on the site land which is drawn using a suction pump and distributed using a push pump to existing residential unit installations. At the research location there are obstacles-obstacles faced in providing clean water include:

a. Clean water installations, many of which are not functioning because the water from the Local water company cannot flow so that follow-up clean water installations are built which are not well planned (very untidy and not integrated with the existing ones).

b. Many water pumps are old, so they are often damaged and repaired repeatedly.

From the above, it is evident that proper, correct and continuous planning, implementation, supervision, maintenance, socialization and assistance is needed to provide clean water availability, and the requirements that need to be considered are

a. Standards for clean water requirements are:

-water supply of at least 15 – 20 liters per person per day;

-fill the water flow at each water source at a minimum of 0.125 liters per second;

- the radius of the residence from the water source is at least 30 meters and not more than 500 meters;

-at least 1 (one) water tap for 80 – 100 people and for bucket wells no more than 200 people.

b. Air quality standards that must be provided:

-does not contain chemical or radiological ingredients

-still contains germs containing bacteria from human waste which does not exceed 10 coliforms per 100 milli liters;

-there must be no extraordinary cases of diarrhea, and must be disinfected before use and must meet the accepted criteria, namely residual chlorine in tap water of 0.2–0.5 milligrams per liter and saturation below 5 NTU);

-conduction below 2000 js/cm and commonly taken by mouth;

-There is no negative impact on health due to chemical or radiological pollution

c. Dirty Water/Drainage Network

A number of urgent problems that need to be considered in order to be used as a standard for analyzing the success of dirty water management (non-toxic liquid waste):

a. there is no stagnant water around water sources either in or around the Temporary Evacuation Location building;

b. must not collect rainwater that flows directly through the air drainage channel;

c. Availability of Public Facilities

-there are facilities and peace;

-there are medical facilities;

-there are learning and teaching facilities;

-there are public transportation facilities;

-There are trade/shop/market facilities for community needs

Several locations already have maps of disaster-prone areas, whether for floods, earthquakes, landslides or other disasters. With this map, it is easier to choose locations for disaster evacuation. Many of these maps are not yet known to the wider public. These maps are still owned by certain agencies. It is hoped that there will be socialization of maps of disaster-prone areas as well as the distribution of evacuation locations, the existence of which is:

c.1. Capacity

What is meant by capacity is the minimum area per person in one room of 3.5 m2/person, while the land requirement is 45 m2/person. Capacity in open locations is adjusted to refugee tents which are commonly used, namely army tents containing 10 people. with a size of around 24 m2, a team tent with a capacity of 20 people with a size of 48 m2 and a platoon tent with a capacity of 30 people with a size of 72 m2.

c.2. Size of the Temporary Evacuation Site

In determining the required spaces, it is necessary to pay attention to the occupant's mobility space which is determined by supporting equipment, including:

1. Bed

2. Stove, furniture cupboard and cooking table

3. Washboard

4. Pole or clothesline

Paying attention to the occupants' mobility space, facilities and air circulation, the sizes of shared residences,

communal toilets, shared bathrooms and shared washing areas that are available can be measured as follows:

1) Shared Residence:

The minimum area per person refers to explanation [6], namely 3.5 m2/person with the main function as a residence consisting of a multi-purpose room/sleeping area, dining and circulation.

2) Joint MCK

The existing types of MCK according to health standards are divided into 2 (two) service functions, namely:

a. MCK evacuation/refugee shelter field.

This MCK is not close to the evacuation location with a distance of approximately 50 m from the evacuation field.

b. MCK for sanitation of residential environments.

The location of the MCK is in the middle of the users at a distance of approximately 50 m. These MCK elements include:

a. The MCK room includes space for bathing, washing and defecating

b. Waste processing consisting of:

-Septic Tank

-Anaerobic Bafel Reactor

-Absorption

-Artificial Wetlands

c. Clean water sources (including water towers)

d. Complementary utilities such as electricity for lighting and the need for electric pumps and drainage for water used for bathing and washing.

e. Under certain conditions, MCK can be fenced.

For ease of service, provision of MCK can be provided by the relevant services/agencies at refugee locations of course, the provision of toilets must be supported by an adequate supply of clean water.

3) Communal Bathroom

In the design concept for the Temporary Evacuation Site, the bathroom/WC/washing and drying room are located in one communal space called the wet area. The consideration is that this communal space is for ease of maintenance by managers and repairs if there is damage. The number of men's toilets can be replaced with peturasan no more than 1/3 of the number of toilets required. Sizes that can be recommended for communal bathrooms include a minimum floor area of 1.2 m2 (1.0 m x 1.2 m) and make it non-slip with a slope towards the drain hole of approximately 1%. Door, size: width 0.6 - 0.8 and minimum height 1.8 m, for wheelchair users use a door width that matches the width of the wheelchair. The bathtub/water tank for bathing is equipped with a dipper. Rooms must be provided with roofs and ceilings that are free from asbestos.

4) Washing facilities

The minimum floor area is 2.40 m2 (1.20 m x 2.0 m) and is made non-slip with a slope towards the disposal hole of approximately 1%. The place for rolling clothes is done by squatting or standing, the height of the place for rolling clothes by standing is 0.75 m above the floor with dimensions of at least 0.60 m x 0.80 m.

5) Community Kitchen

Public kitchens are very important in evacuating victims of natural disasters. With the existence of a public kitchen, food needs are more secure, and the health of the refugees is also guaranteed. For this reason, a kitchen shelter with a knockdown system and multifunctional equipment package was developed, becoming a more effective alternative to the public kitchen system. From the results of this analysis, it can be concluded that the recommendations relating to the development of a public kitchen plan after the busibah are:

a. Design a public kitchen with easy and simple systems and operations so that residents can use it independently.

b. The design of a public kitchen can accommodate and adjust the types of food that can be received by residents in disaster areas so that the process of providing food needs is met.

c. Public kitchen equipment is designed to accommodate the process of cooking various types of food that can be adapted to the location of the disaster area.

The size of each space can be adjusted to the condition of the land. Based on the 2008 Ministry of Public Works Spatial Planning Dictionary, what is meant by building density is: the difference between the covered area and the land area. Building density needs to consider optimizing the effectiveness and efficiency of the land according to its function, as well as looking at the suitability and safety of the surrounding environment, while the position of the building needs to support the smooth running of daily activities by considering harmony, balance and integration. Building density is one element in efforts to control spatial development and building layout and environmental planning that pays attention to harmony, functionality, ecological aesthetics and the use of land space. Building density influences the intensity of the built-up area, which is the optimization of land capacity compared to land area. The basic building coefficient or what is usually called Building Coverage is a percentage figure comparing the entire ground floor area of a building with the area of plotted land. To calculate the basic building value coefficient or building coverage in an area, consideration of the homeland is used. These

considerations are used to consider the sustainability of ground air. This is related to determining the Building Coverage of a place. The basic principle is to calculate how much area remains open or preserved so that the air can have sufficient infiltration space. This is also useful for maintaining the availability of groundwater reserves so that it can balance groundwater utilization and prevent land subsidence in the area. Building density must:

1) taking into account the optimization of the usability and results of land use, in accordance with its function;

2) pay attention to the harmony and safety of the surrounding environment;

3) To prevent fires, a distance of 30 m is made between every 300 m2 building area.

Meanwhile, the building layout must:

1) Support the smooth running of daily activities with harmonization, balance and integration.

2) has a direct or indirect correlation with outside air in sufficient quantities;

3) have sufficient natural direct or indirect lighting;

4) Efforts are made to provide air circulation and artificial lighting if air exchange and natural lighting are insufficient

c.3.Land for Temporary Evacuation

The land/site where the announcement is made is set in a location that is safe from any disaster. The land/site for mentoring can be a public building that has been determined together with the community or an open space that is used for mentoring in the organization's area. According to the location and capacity of the shelter, the evacuation zones are divided into three levels which include macro, meso and micro evacuation zones. When a disaster occurs, residents are guided to move to save themselves to the micro evacuation zone at the Neighborhood Unit level. If the facilities and conditions in the micro evacuation zone do not support it, residents are guided to the meso evacuation zone which is at the Rukun Warga level with a greater capacity. Furthermore, if the facilities and conditions in the meso evacuation zone are inadequate, residents are directed to the macro evacuation zone which is at the village/district or even sub-district level.

1) Land/Site Analysis of Public Buildings

The problem of land acquisition in urban areas or densely populated areas is a difficult problem. To overcome this, several regional heads issued policies to use government buildings and public buildings as disaster evacuation sites. The phenomenon of people being reluctant to evacuate during floods for security reasons is a difficult problem for the government in evacuating refugees. Various things have been done to encourage people to evacuate when a flood occurs, for example, mobile posts are held around the organization to create a sense of security in leaving the house when a disaster occurs. Unfortunately, the majority of community members still do not want to evacuate. The difficulty for residents to evacuate is also due to the fact that the flood disaster that

occurred did not pose a threat to their lives. Sometimes they only think of it as a water reservoir and some are even used to the floods they experience every year. However, the importance of awareness about evacuating needs to be increased so that there are no casualties or victims suffering from various diseases. One effort to reduce casualties is to provide temporary shelter when a flood disaster occurs. Several public buildings that can be used as temporary hangout places have the following requirements:

-Safe building height from air reservoirs;

-Sufficient capacity to accommodate a number of refugees;

-Building construction must be earthquake resistant;

-Equipped with infrastructure, facilities and utilities;

-Far from sources that cause floods and other disasters;

-Easy road access;

-Distance from residential areas < 30 minutes;

-Near or has clean water resources;

-Close to other social facilities such as health services, education, worship and shops.

Sports buildings, government buildings (village hall, sub-district/sub-district offices), school buildings and other public facilities such as: terminals, sports fields, parks, markets can be used as evacuation places. Privately owned buildings such as hotels, supermarkets, world centers and offices, can be used as evacuation places with an area of 25% of the building area based on regional government regulations. Several survey location areas already have maps of the distribution of evacuation places that can be used in the event of a disaster and determined with the community. Unfortunately, the distribution of maps of the distribution of evacuation locations has not yet been carried out. Therefore, it is necessary to socialize the distribution of evacuation locations so that people can easily remember and easily evacuate themselves when a disaster occurs. As one of the efforts to mitigate earthquake disasters, it is necessary to determine refugee locations or evacuation points in the organization's area. Locations used as evacuation zones are open spaces within the organization's area. Residents can use these open spaces as recreation areas when disasters do not occur. To be able to support the conditions of refugees in evacuation zones, these locations must be equipped with facilities and infrastructure that can function optimally after a disaster.

2) Land/Site Analysis for Evacuation Buildings

If a district/city that has a flood-prone area still has empty land to build a Temporary Evacuation Site building, then the land/location requirements are:

a. belongs to the regional government;

b. in accordance with the land use plan regulated in the local Regional Spatial Plan or other planning documents determined by Regional Regulations by taking into account the following matters:

- Not protected areas, agricultural land, production forests, factory waste dump locations, building-free locations around airports, locations under high voltage power lines.

- Not a location that has air pollution, surface air and ground air pollution.

- The location is easy to reach, easy to interact with, easy to carry out activities.

- Sufficient greening, maintaining existing topographic and environmental characteristics.

- Pay attention to the ideal radius of achievement of people's ability to walk as environmental users towards the placement of environmental utility facilities and infrastructure.

- Pay attention to local socio-cultural characteristics.

c. has a slope/slope of the land not exceeding 15%

d. location of land ready to build.

e. have open land ≥ 20% of the land area.

Bojonegoro Regency has land according to the criteria with an area of 1 hectare. On this large area of land owned by the Bojonegoro Regency Government, a Temporary Evacuation Site with a capacity of 1,000 refugees has been built along with other supporting buildings such as a public kitchen, bathrooms and a health post.

3) Analysis of Construction and Building Materials

In general, structures are divided into upper structures and lower structures. Each part has alternatives that can be chosen in implementing the system structure. The alternative system structures that can be selected will be explained below.

a. Upper Structure

is the part of the building above the foundation divided into two parts, namely:

-gravity systems that can be planned using flat slab, flat plate, or a combination of slab and beam

systems

-Lateral systems that can be selected are portal systems, walls, or a combination of both.

The things that are used as guidelines for selecting the upper structural system are: - increasing the vibration period

of the building

-increases ductility

-seeking that structural elements can function as architectural elements such as shearwall as a wall

-reducing lateral stiffness and increasing torsional stiffness

-The use of basements should be avoided because it requires large costs and is impossible to build in flood-prone areas.

The upper structure consists of floors, walls and roof covering. Next things that need to be considered in selecting the upper structure of the Temporary Evacuation Place building are:

a.1.Search and turn on

The requirements for walls that can be met are:

-light material;

-fireproof material;

-easy to obtain as local building material;

-Use wall materials that are airtight, or add protection to maintain strength during heavy rains and floods;

-Using mortar mixed with coarse sand on the wall will make the wall durable against water;

-Openings in the walls must be adjusted to the building area (1/3 of the building area);

a.2.Floor

-The height/elevation of the floor must be higher than the usual collection;

-Provide a large stage/podium at the side of the building to place the refugees' belongings.

a.3. Roof Covering

Roof coverings that can be used can be:

-Rooftile

-Concrete Base

The use of tile roofs is more aesthetic in architectural development, but maintenance has many weaknesses. Using a concrete roof covering is more expensive but maintenance is easier and cheaper. Both types of roof coverings must be supported by water and fireproof materials. What is meant by substructure is the part below the main structure, namely the foundation. Substructure work cannot be standardized because it really depends on the condition of the soil where the building is placed, the location of the building, preferably in an area that is flat and free from tree roots. In this paper, only the selection of foundation systems is presented, and alternative systems that can be used are:

a. Driven pile

b. Pressed-in pile

c. Bored pile

d. Jacked-in mini pile

e. Matt foundation

Problems that can be used as a guide when selecting a foundation system are:

a. Driven pile is good to consider because it requires a small budget.

b. Jacked-in mini pile is also an economical option, but the capacity is smaller.

c. Pressed-in piles are quite expensive, but they are clean and suitable for construction sites in dense environments.

d. Bored piles are quite expensive and dirty, but have a large load and are also suitable for construction sites in dense environments.

e.Mat foundation is only good for use in good soil conditions and if the building has a basement.

However, the things that need to be considered when choosing a foundation for a Temporary Evacuation Site building are:

a. The foundation for the evacuation site must be strong and placed on stable ground.

b. The depth of the foundation must be strong enough to withstand moving water.

c. Drainage needs to be provided to minimize erosion and water pressure on the foundation.

d. Plastic tarpaulin can be placed between the soil and the foundation to further protect the structure.

e. The base of the foundation needs to be protected from erosion and rainwater by using gutters, gutters and other

drainage infrastructure. A poor drainage system will cause soil saturation and cause soil instability.

f. Watertight foundations (for example pile foundations) are highly recommended to resist water pressure and remain resistant when wet.

g. Foundations for stilt houses are highly recommended in areas where it is appropriate to build them.

4) Material Analysis

In general, the materials used for the main structure of a building can be divided into three types, namely:

a. Concrete

The use of concrete structures is widely used in buildings because it requires relatively cheap costs for buildings with a small number of floors. However, one of the obstacles encountered with this type of building is that it takes longer to implement. This is because it takes time for the concrete to reach sufficient strength (curing) before further casting is carried out.

b. Steel

Steel structures are generally chosen because they are easy and fast to construct. Apart from that, this material is very suitable for use in tall buildings or buildings that have large horizontal spans. However, this structure is relatively more expensive, because the price of steel material is quite high. Another disadvantage of this type of structure is that it is susceptible to high temperatures, such as those generated in a fire disaster. Although this can be minimized by applying a fire retardant coating, this will further increase construction costs.

c. Composite

A composite structure is a structure composed of a combination of two or more materials that work together to bear the load. One example of a composite structure that is quite widely used today is a floor plate which is a combination of metal deck and concrete. One of the advantages of using this material is that it is easy to carry out construction. General guidelines for selecting the types of building materials above are as follows:

- The specific gravity of the material will affect the amount of load borne by the structure.

- The capacity of the material to bear the design load is directly related to the required dimensions and will also influence the structural loading.

- Selection of materials must take into account the building configuration (number of floors, horizontal span, etc.), environmental conditions, access to the location, and so on.

- The time period for construction implementation has a significant influence on construction costs.

5) Load Analysis

Specifically for loading, issues that should be paid attention to in order to obtain efficiency and effectiveness outputs in the design and construction budget are as follows:

a. Building design should use materials with a light density. This also applies to architectural components. (example: brick wall vs gypsum partition)

b. Apply live load reduction factors, as stated in the building planning regulations. This can be applied to:

- Earthquake loading planning

- Portal system planning

- Calculation of axial load of vertical components

c.Placement of the roof tank in the middle of the building

d.Place the load as close as possible to the center of stiffness of the structural component.

6) Analysis of building component materials

a. Floor

The floor is the first dimension to form space. Completion of the floor shape is influenced by limited costs. Judging from the function of the space and the cost priority scale, the floor takes priority over the main component forming the floor, namely concrete mortar or concrete plates. Because the space for this refugee camp is also for residential purposes, it is best to add floor covering material such as ceramics. By adding ceramics, it is hoped that it will help maintain the main components that make up the floor.For support or service, where there will be the influence of humidity due to frequent and large use of water which will weaken the strength of the concrete, there is no need to add ceramics but simply finish with the main component of the floor, namely concrete mortar or concrete slabs known as exposed concrete, the maximum finish with the addition of a plastered screed and smooth plaster. The floor coating material found in many survey locations is 30 x 30, while for bathrooms/wet rooms it is 20 x 20. From the technical and speed of implementation as well as from the unit price of the material as well as from the continuity of the pair line / grout with other private room parts, the size of 30 x 30 is more economical than the size of 20 x 20. This is in line with [8] which states that the floor covering for stairs and hallways uses plaster and plaster without using ceramic coating, while the floor covering for residential units and rooms shower and toilet use ceramic

b. Wall

The second dimension that forms space is the wall. The position of the wall is vertical. If the base of the room is planned to be rectangular or square, there will be 4 (four) vertical wall areas. The walls are built according to the

function of the room. The positions outside and inside the building are known as exterior walls and interior walls. Also filled in public, semi-public, private and supporting or service spaces. For the outer walls of buildings (exteriors) and dividing walls between residential units as well as walls of supporting or service rooms such as KM/WC, massive walls such as concrete walls or brick or block masonry are needed. For other functional room walls within a residential unit, divider or partition walls, such as gypsum or multiplex, can be used.

c. saddle or shield

saddle or shieldconsisting of light frame and sheet construction roof covering. The completion of this roof can also be a combination from both ceilings/ceilings. The third dimension that forms space is plane ceiling or roof. The position of the ceiling is horizontal. The ceiling completes the formation of the floor and walls the interior becomes one space, more precisely the inner space. The space inside buildings, whether public, semi-public, private or supporting spaces or service is limited by the ceiling area. Type of ceiling material.The sky can be a light covering such as gypsum or multiplex or a solid area of the floor plate above such as a concrete plate, this is known with the term exposed concrete. Here the ceiling plane is finished with covers made of light materials in the form of sheets such as gypsum or lots

d. Roof covering

The roof is the covering component of the building. The roof material can be in the form of a flat surface such as a concrete plate or in the form of a frame construction with a light sheet covering the roof and a concrete plate around it or something similar. These two principles of roof shape have their advantages and disadvantages.

e. Door

Components of wall components such as doors and windows can be standardized based on room function and human movement standards. Door components can be divided based on their spatial function, such as:

-Main door

-Bathroom doors and service areas.

The type of building material for the door and frame can be aluminum or wood, depending on the availability of building materials at the Temporary Evacuation Site location.

f. Window

The following is a list of window types that are often used in construction in Indonesia. From the existing window types, Pivoted Windows can be selected for the type of window in Temporary Evacuation Sites with the following considerations:

-Windows must use pivot hinges

-easy to clean

-Open and close the windows for maximum air circulation

-height from floor to bottom of windows on the facade wall = 1.2 meters

-height from floor to bottom of window on corridor wall = 2.05 meters

Minimum ratio standards for opening windows for the needs of natural light supply and air circulation as well as space conditioning must be met during design and implementation. From the conclusions of expert studies, it is recommended that the minimum ratio be 1/6 of the area of the facade of the residential unit. Meanwhile, artificial lighting or lamps are needed between sunset and sunrise or between late afternoon and early morning after daylight. Artificial lighting or lamps are needed inside and outside the building. Artificial lighting or lamps need to be planned according to the level of illumination required and can be adjusted to the function of the space in the building, apart from that it remains a main concern while still paying attention to issues of efficiency and effectiveness, use minimal energy, does not cause light reflection. The artificial lighting used must be installed in a building with a specific function and can work automatically and have sufficient lighting levels to provide safe light. Based on the analysis of materials, loads and building materials, a table can be created to consider the choice of materials for Temporary Evacuation Sites as follows. What will be explained is the analysis of facilities for refugees consisting of:

1. Service posts

2. Bathing/WC/Latrine area

3. Public kitchen

4. Parking area

5. Pet area

Below we will analyze the needs for these facilities, such as service pods. The service posts that must be provided are:

a. Security post

b. Health post

c. Telecommunication post

d. Educational social assistance post

At the location of the Temporary Evacuation Place in the form of a public building, form These pods can be

tents, which are provided by the relevant agencies as well as those providing assistance. For service pods in the form of permanent buildings in Temporary Evacuation Place buildings, can designed according to needs by following human movement standards and also the furniture used. Other requirements that must be complied with in the construction of permanent service pods is a reliability requirement building as stated in [10]

c. Parking area

Parking is a non-temporary state of not moving a vehicle. Parking can also be interpreted as stopping, namely the condition of a vehicle not moving for a while with the driver not leaving the vehicle. Parking facilities are locations designated as non-temporary stopping places for vehicles to carry out activities for a certain period of time. Parking places are located on the road (on street parking) is a parking facility that uses the edge of the road, while off street parking is a vehicle parking facility outside the edge of a public road that is specially created or supports activities which can be in the form of a parking lot and/or parking building.A unit of parking space is the effective area for placing a vehicle (passenger car, bus/truck, or motorbike), including free space and door opening width. For certain matters without explanation, the parking space unit is for passenger cars. Parking space is an outdoor space requirement that needs to be considered in the Temporary Evacuation Site. Parking is needed to store refugee vehicles and aid vehicles. The need for parking space in the Temporary Evacuation Site building should refer to the standard area for 1 small car, large car (box), truck and motorbike. Determining parking spaces should refer to the technical guidelines for the implementation of parking facilities based on [7] that for refugee camps located in public buildings, in addition to parking spaces, environmental roads also need to be considered. The existence of environmental roads which provide access to evacuation sites can be used as parking lots with good security. The livelihood of most disaster victims in Indonesia is farmers who own livestock. It is often experienced by evacuation teams that victims do not want to evacuate if their livestock are not taken to a safe place. These social constraints must be considered in planning the Temporary Evacuation Site building. By having a place for pets, refugees can evacuate peacefully and the risk of losing pets can be controlled.

7.Conclusion

The conclusion of this research is that the social communication style that was developed in various problems for flood victims was designed through several vertical and horizontal networks, including autonomous services, central agencies and regions or with other parties. Disruption or loss of information about flood disaster victims between stakeholders can lead to misunderstandings so that decision making at the stakeholder level in dealing with flood disaster victims becomes inaccurate. The social impact that occurred during the flood disaster was that 126 villages were flooded, 15,114 houses were inundated and 3,884 residents were displaced. In Bojonegoro Regency there is a temporary evacuation site which has a land area of one hectare and a capacity of 1,000 refugees, two fields that can be used as temporary evacuation locations.

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