

**NATIONAL DISASTER MANAGEMENT
AGENCY (BNPB)**

**THE STUDY
ON
NATURAL DISASTER MANAGEMENT
IN
INDONESIA

FINAL REPORT**

VOLUME 2:

MAIN REPORT

**VOLUME 2-3: KABUPATEN JEMBER
REGIONAL DISASTER MANAGEMENT PLAN**

MARCH 2009

JAPAN INTERNATIONAL COOPERATION AGENCY

**ORIENTAL CONSULTANTS CO., LTD.
ASIAN DISASTER REDUCTION CENTER**

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KABUPATEN JEMBER

REGIONAL DISASTER MANAGEMENT PLAN

PART 1

RAIN AND STORM DISASTER MEASURES



SATLAK PB KABUPATEN JEMBER

In cooperation with



JICA STUDY TEAM

Oriental Consultants Co., Ltd.
Asian Disaster Reduction Center

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Section 1: GENERAL

(Basic Concept of the Plan)

CHAPTER 1. ELEMENTS COVERED IN THE PLAN

1.1 Objective of the Plan

SATLAK PB Kabupaten Jember collaborated with JICA Study Team to prepare this Kabupaten Jember Regional Disaster Management Plan based on Law No.24 2007 regarding Disaster Management enacted on 29th of April, 2007. This plan clearly mentions whole picture of disaster management in chronological order, consists of Measures in Disaster Mitigation, Preparedness, Emergency Response, Rehabilitation and Reconstruction. This plan aim to implement emergency response activity based on pre-prepared comprehensive plan, and reduce damages and save citizens lives and their assets, as well as maintaining social order and public welfare from disaster.

1.2 Interrelations among National Disaster Management Plan, and Regional Disaster Management Plan

This plan is interrelate with National Disaster Management Plan prepared by BNPB, and Provincial Regional Disaster Management Plan which will be formulated in near future.

1.3 Revision of the Plan

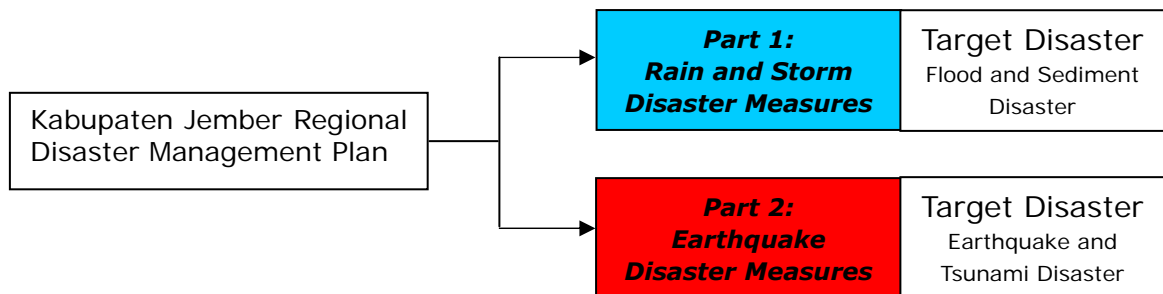
This plan is revised periodically and/or when required to keep efficiency of disaster management. In every revision phase, SATKORLAK PB should carefully investigate the contents of draft version of revised regional disaster management plan to keep the interrelations with disaster management plan in other area and in higher level.

CHAPTER 2. STRUCTURE OF THE PLAN

2.1 Structure of the Plan

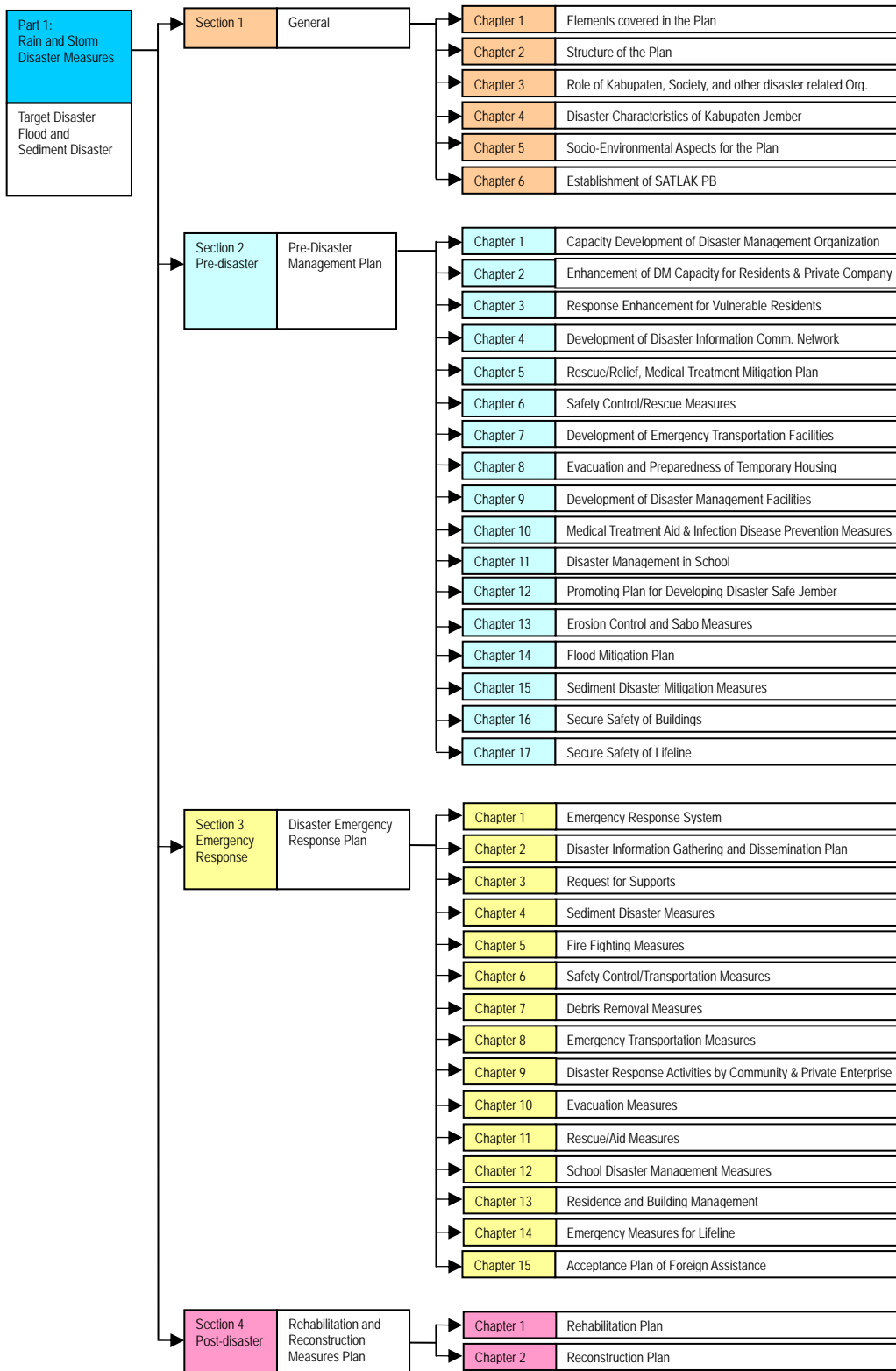
1) Composition of the Plan

This plan formulated as a basic plan to dealt with possible disasters in Kabupaten Jember, and it composed of “Part 1: Rain and Storm Disaster Measures”, and “Part 2: Earthquake Disaster Measures”. This part of the plan contains “Part 1: Rain and Storm Disaster Measures”.



2) Contents of the Plan (Part 1: Rain and Storm Disaster Measures)

Contents of “Rain and Storm Disaster Measures” are as follows;



CHAPTER 3. ROLE OF KABUPATEN, SOCIETY, AND OTHER DISASTER RELATED ORGANIZATIONS

Kabupaten Government and disaster management related organizations have obligations to prevent occurrence of disaster, or mitigate damage, and for securing citizen's life, and their assets.

3.1 Obligation of Kabupaten Jember related to Disaster Management

The disaster management and refugee handling at local region through following actions/implementations:

1. Bupati as Unit Administrator Chief of the disaster management and refugee handling (SATLAK PB) is responsible for coordinating, leading, and controlling, the regional structural and non structural activities in implementing disaster management and refugee handling in Kabupaten/Kota area before, during, and after disaster and evacuation.
2. Camat as Operational Unit Chief of the disaster management and refugee handling (Unit Ops PBP) is responsible in coordinating the sub-regional structural and non structural activity in implementation before, during, and after disaster and evacuation in Kecamatan area.
3. Chief of Village/Lurah as Hanship/Linmas Unit Chief responsible to coordinate and control the village activity in implementation of disaster management and refugee handling before, during, and after disaster and evacuation.

3.2 Obligations of Disaster Management related Organizations

Disaster management related organizations have obligation to support and help activity to mitigate damage by prompt action and with close coordination with Kabupaten Jember in case of disaster occurrence

CHAPTER 4. DISASTER CHARACTERISTICS OF KABUPATEN JEMBER

4.1 Natural Conditions

Kabupaten Jember is an area covered among other regencies and Southern Seashore, with boundaries as follows:

- North : Kabupaten Bondowoso
- East : Kabupaten Banyuwangi
- South : Indian Ocean
- West : Kabupaten Lumajang and Probolinggo

Administratively, Kabupaten Jember is divided into 31 Districts and 247 Villages.

According to the economics growth corridor of East Java, Kabupaten Jember is belong to East Corridor that is more developed based on premier sector production (agriculture), especially for tobacco and plantation product and other agriculture products besides of agribiz home industry, so that contribution and empowering PDRB perform an unsuccessful track and need financial aid from the Government so as to increase the economical growth.

Most people in Kabupaten Jember work as farmer. It can be seen from the big amount of residents living in rural area. Average land use in Kabupaten Jember is farmland and plantation; moreover, it can be said that the central area of Kabupaten Jember is surrounded by plantation in north and east part which stretch from west to east and from east to south. Meanwhile, the west and south parts of Kabupaten Jember are utilized as farming area. The fertility of soil in plantation and farmland in rural area is influenced by sufficient irrigation from river and its tributaries crossing along village area. Moreover, when rainy season comes, water fills the rivers. Such a fertilize soil with many rivers and streams in Kabupaten Jember will be potential to have disaster occurred during rainy season, especially landslide disaster as well as flood that will damaged the government buildings and the other people properties.

1) Geographical Condition

Kabupaten Jember has the Argopuro Mountain (highest point of altitude 3,072m) in the north, and the Raung Mountain (highest point of altitude 3,328m) to the northeast; while in the south South-eastern Mountains (highest point of altitude 1,223m) extend east to west. The lowlands are spread in the southwest part of the regency, surrounded by Argopuro Mountain, Raung Mountain and the Southern Mountains. Geographically, Kabupaten Jember could be divided into 4 areas.

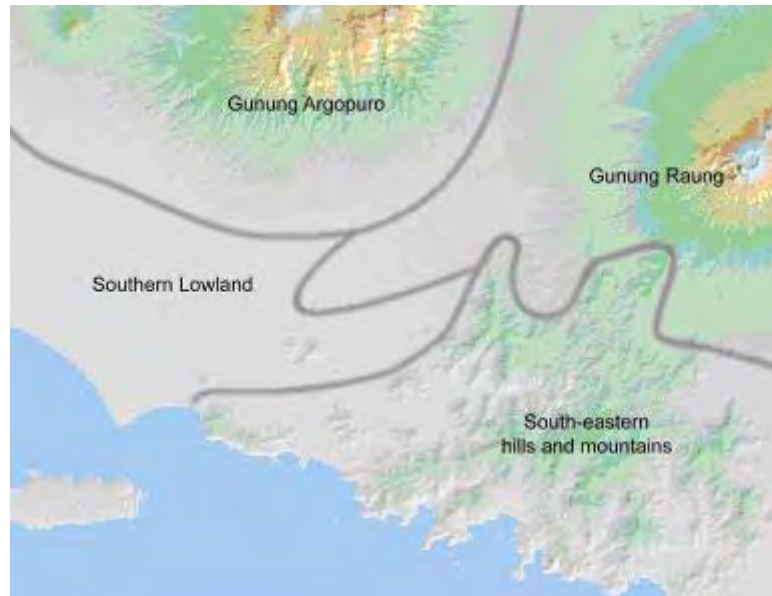


Figure 4.1.1 Geomorphological Divisions in Jember

(1) Southern Lowland

The lowlands extend through the central west of Kabupaten Jember at 0-50m elevation above sea level. The fluvial plain in the central area is made of the Bedadung River and its tributaries. The western area is comprised of a fluvial plain of sediment from the Malang and Bondoyudan rivers that flow down from Argopuro Mountain. Many tributaries and irrigation channels branch out from the river mid-downstream.

On the ocean side of the coastal plane, one sees sand dunes of approximately 10 meters in height, and further inland is a sand bar of approximately 5 to 9m in elevation.

(2) Raung Mountain Slope

The western slope of the Raung Mountain is part of Kabupaten Jember. A large, horse-shoe shaped edifice collapse slope is featured on the western face of Raung Mountain, with several mounds at its base. The mounds (Gumuk) that are distributed at the western base of Raung Mountain are known as the Ten thousand hills, or Bukit Sepuluh Ribu.

(3) Argopuro Mountain slope

The southern slope of Argopuro Mountain is part of Kabupaten Jember. The summit of Argopuro Mountain features 5 distinct cones; the southern slope is the old volcano slope. The south-east slope of Argopuro Mountain is dissected by several valleys so one can see the collapsed slope and deep valley. A representative valley is being devastated by the Karangbayat River, Klatakan River, Kali Putih River, and Kemiri (Jompo) River from the west, which all produce a large amount of deposits forming an alluvial fan at the foot of the volcano and a debris flow terrace.

(4) South-eastern Hills and Mountains “Meru Betiri Mountains”

A hill and mountain range stretches across the southern part of Kabupaten Jember and Kabupaten Banyuwangi at 50~1,200m above sea-level.

2) Climate

Meteorology in Kabupaten Jember is classified into 8 categories based on the length of rainy season and dry season (Refer to Table 4.1.1) which was analyzed by Karangploso Station in Malang, Badan Meteorologi dan Geofisika (BMG).

Table 4.1.1 Categories of Meteorology in Kabupaten Jember

Number	ZPI	RAINY SEASON			DRY SEASON		
		Period of Season	Length of Season	Rainfall (mm)	Period of Season	Length of Season	Rainfall (mm)
1	98	Oct II - May II	22	1720 - 2326	May III - Oct I	14	352 - 476
2	99	Oct I - May II	23	1784 - 2414	May III - Sept II	13	241 - 327
3	100	Sept I - June I	28	3935 - 5323	June- II - Aug II	8	258 - 348
4	101	Sept III - June	26	3191 - 4317	June II - Sept I	10	234 - 316
5	102	Oct I - May III	23	2763 - 3738	June I - Sept II	13	234 - 316
6	103	Nov II - Apr II	16	1194 - 1616	Apr III - Nov I	20	295 - 399
7	107	Oct III - May II	22	2679 - 3625	June I - Oct II	14	243 - 329
8	112	Oct III - May I	20	1709 - 2313	May II - Oct II	16	477 - 645

The basis of “Length of season” is the period which is equivalent to the third of a month (almost 10days). It means that the total length of rainy season and dry season is equal to 36 (12 months times 3). The area of ZPI=100 as indicated in Table 4.1.1 has the longest period of rainy season of 28 (=280 days of rainy season in one year). In Kabupaten Jember, the total amount of rainfall in the rainy season is varied from 3,935mm to 5,323mm. On the other hand, the rainfall amount in

the dry season (length of season: 8) of the area is from 258mm to 348mm only. The location of each ZPI area is indicated in the figure below (Figure 4.1.2).



Figure 4.1.2 Meteorological Classification in Kabupaten Jember

4.2 Social Conditions

1) Population

Information about population is an important consideration in disaster management. The main source of population data for Jember is Badan Pusat Statistic (BPS). BPS conducted a survey in 2005. The following are population data at desa level received from BPS Jember Office.

Table 4.2.1 Population and Household dissemination by Kecamatan for Year 2005

NO	KECAMATAN	POPULATION			HOUSEHOLD
		MALE	FEMALE	TOTAL	
1	KENCONG	31,322	32,949	64,271	18,088
2	GUMUKMAS	37,339	38,602	75,941	21,898
3	PUGER	51,391	52,810	104,201	29,602
4	WULUHAN	52,044	52,929	104,973	26,758
5	AMBULU	49,095	49,312	98,407	67,671
6	TEMPUREJO	33,502	35,939	69,441	19,362
7	SILU	46,266	49,416	95,682	32,277
8	MAYANG	20,905	22,446	43,351	14,741
9	MUMBULSARI	27,510	29,447	56,957	17,442
10	JENGGAWAH	33,653	35,863	69,516	22,431
11	AJUNG	31,808	33,550	65,358	20,266
12	RAMBIPUJI	34,850	36,752	71,602	21,559
13	BALUNG	35,048	36,431	71,479	19,328
14	UMBULSARI	33,522	34,112	67,634	18,779
15	SEMBORO	21,643	22,131	43,774	13,595
16	JOMBANG	23,835	25,430	49,265	N/A
17	SUMBERBARU	46,724	49,293	96,017	16,281
18	TANGGUL	36,843	38,856	75,699	59,200
19	BANGSALSARI	51,868	55,109	106,977	28,439
20	PANTI	27,932	29,250	57,182	16,996
21	SUKORAMBI	17,027	19,263	36,290	N/A
22	ARJASA	16,438	18,206	34,644	11,862
23	PAKUSARI	18,417	19,172	37,589	N/A
24	KALISAT	31,087	35,119	66,206	20,996
25	LEDOKOMBO	27,424	28,944	56,368	20,137
26	SUMBERJAMBE	26,529	28,370	54,899	19,492
27	SUKOWONO	26,327	27,780	54,107	N/A
28	JELBUK	14,809	15,091	29,900	N/A
29	KALIWATES	44,200	49,622	93,822	N/A
30	SUMBESARI	50,100	52,743	102,843	N/A
31	PATRANG	42,700	44,370	87,070	N/A
Total		1,042,158	1,099,307	2,141,465	557,200

Source (BPS- Jember office), 2005

Figure 4.2.1 shows the administrative boundaries of Kabupaten Jember at the Kecamatan and Desa level as of 1999.



Figure 4.2.1 Administrative Boundaries

Figure 4.2.2 shows the gross population density of Kabupaten Jember. To learn more realistic population density map, Figure 4.2.3 showing net population density distribution was prepared. To produce this map, population data was linked to both administrative boundaries and built-up area maps from Bakosurtanal. The map clearly shows that the population is distributed mainly along the main and collector roads passing west to east of Kab Jember peaking in the Kota Jember area. Some significant pockets of settlements can be found in the coastal kecamatans of Gumukmas, Puger, Wuluhan and Ambulu.

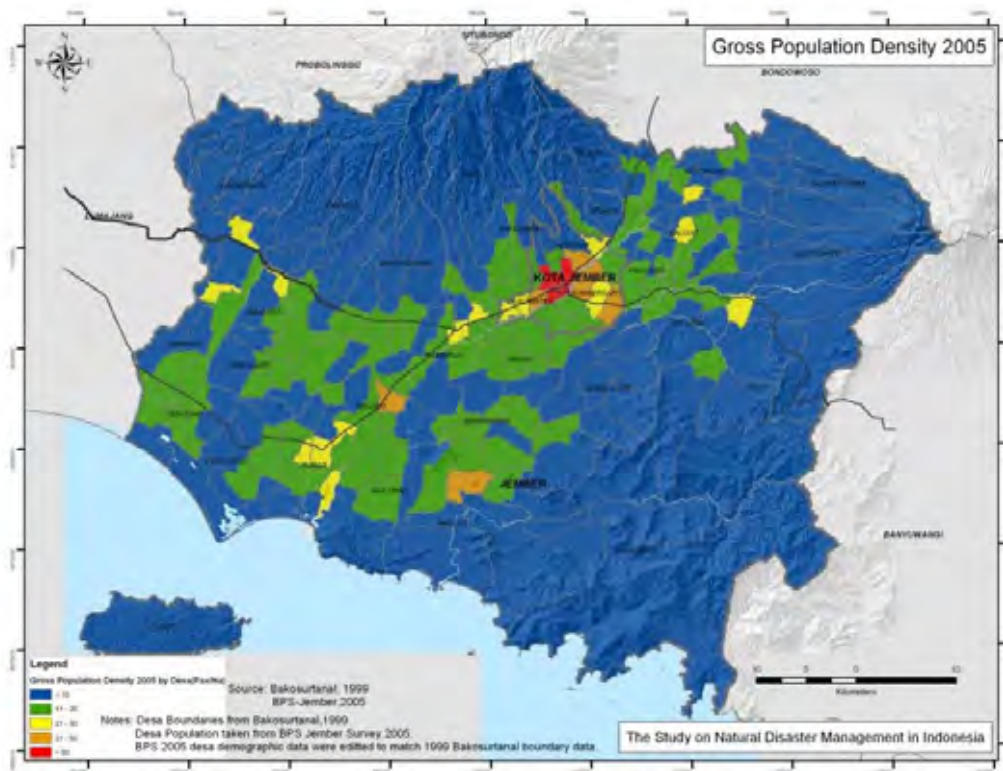


Figure 4.2.2 Gross Population Density of Kabupaten Jember

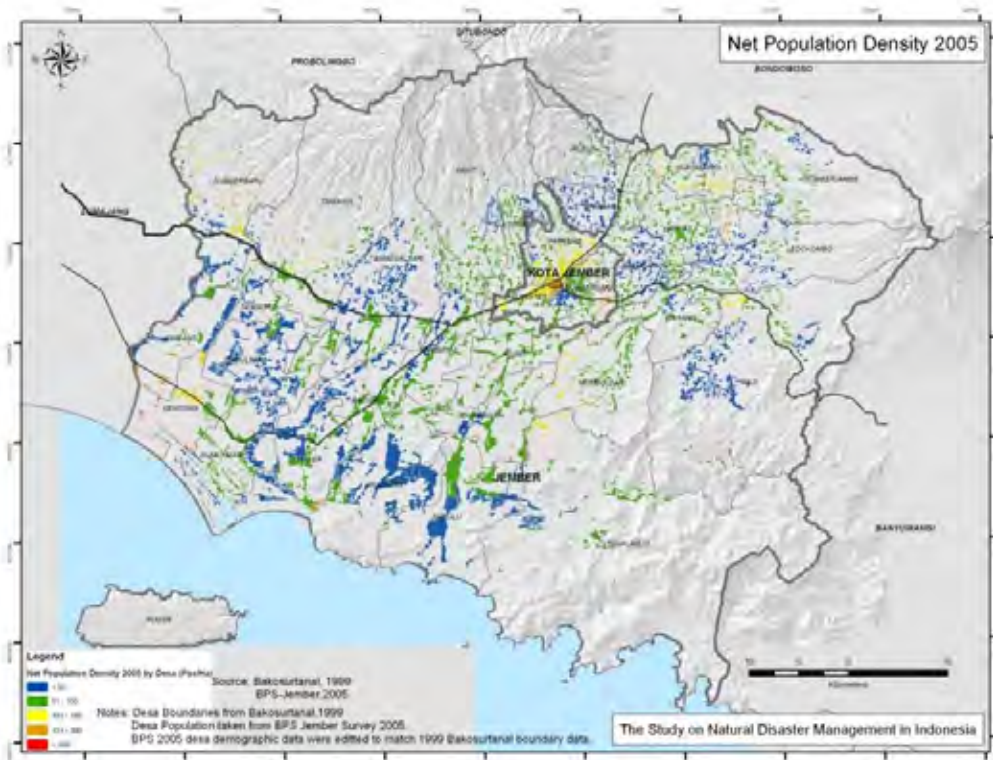


Figure 4.2.3 Net Population Density of Kabupaten Jember

2) Buildings

Information on building structure is another significant consideration in disaster management. For Kabupaten Jember, the main source of the building inventory data is the Badan Pemberdayaan Masyarakat (BAPEMAS, Society Cultivation Board). They conducted a building survey in cooperation with the Kecamatan and Desa offices in Kabupaten Jember in 2006. Table 4.2.2 summarizes the building data collected by Kecamatan.

Table 4.2.2 Number of Building and Type by Kecamatan

No	KECAMATAN	Total Area (Ha)	Built-up Area (Ha)	Concrete Bldg	Wood Bldg	Bamboo Bldg	Total Bldg	Total Households	Total Population	Household To Bldg Ratio	Population to Bldg Ratio	Bldg Density in Built-up area (Bldg / Ha)
1	KENCONG	5,963.95	528.26	13,281	1	1,133	14,415	18,088	64,271	1.25	4.46	27.29
2	GUMUKMAS	9,239.39	1,660.18	15,432	12	3,409	18,853	21,898	75,941	1.16	4.03	11.36
3	PUGER	15,813.45	1,935.46	21,001	178	2,553	23,732	29,602	104,201	1.25	4.39	12.26
4	WULUHAN	12,464.62	2,621.04	23,326	510	3,589	27,425	26,758	104,973	0.98	3.83	10.46
5	AMBULU	11,542.71	2,072.67	13,683	351	1,822	15,856	67,671	98,407	4.27	6.21	7.65
6	TEMPUREJO	53,005.14	1,128.10	N/A	N/A	N/A	N/A	19,362	69,441	N/A	N/A	N/A
7	SILO	32,307.44	1,836.00	18,366	3,953	6,885	29,204	32,277	95,682	1.11	3.28	15.91
8	MAYANG	5,766.93	771.48	7,004	179	8,202	15,385	14,741	43,351	0.96	2.82	19.94
9	MUMBULSARI	9,718.01	693.73	8,967	950	2,649	12,566	17,442	56,957	1.39	4.53	18.11
10	JENGGAWAH	6,131.78	1,078.51	11,862	1,098	4,128	17,088	22,431	69,516	1.31	4.07	15.84
11	AJUNG	6,000.89	933.01	6,429	430	1,824	8,683	20,266	65,358	2.33	7.53	9.31
12	RAMBIPUJI	5,659.45	1,245.29	7,746	200	1,711	9,657	21,569	71,602	2.23	7.41	7.75
13	BALUNG	5,061.08	1,213.17	11,823	192	2,578	14,593	19,328	71,479	1.32	4.90	12.03
14	UMBULSARI	7,120.62	1,579.97	14,100	N/A	6,330	20,430	18,779	67,634	0.92	3.31	12.93
15	SEMBORO	4,672.31	865.35	11,410	49	1,314	12,773	13,595	43,774	1.06	3.43	14.76
16	JOMBANG	5,557.19	850.15	8,983	1	416	9,400	N/A	49,265	N/A	5.24	11.06
17	SUMBERBARU	15,424.04	1,120.91	14,238	4,888	7,888	27,014	16,281	96,017	0.60	3.55	24.10
18	TANGGUL	20,389.97	950.48	7,421	856	1,402	9,679	59,200	75,699	6.12	7.82	10.18
19	BANGSALSARI	15,956.15	2,322.85	13,451	1,649	10,193	25,293	28,439	106,977	1.12	4.23	10.89
20	PANTI	18,097.12	929.09	6,440	2,581	4,368	13,389	16,996	57,182	1.27	4.27	14.41
21	SUKORAMBI	4,695.75	637.46	3,639	18	2,265	5,922	N/A	36,290	N/A	6.13	9.29
22	ARJASA	3,419.64	712.95	4,938	N/A	3,799	8,737	11,862	34,644	1.36	3.97	12.25
23	PAKUSARI	3,118.11	731.76	8,281	2,208	3,906	14,395	N/A	37,589	N/A	2.61	19.67
24	KALISAT	5,251.19	1,086.23	14,467	2,907	8,242	25,616	20,996	66,206	0.82	2.58	23.58
25	LEDOKOMBO	13,180.87	1,021.13	7,249	1,323	9,379	17,951	20,137	56,368	1.12	3.14	17.58
26	SUMBERJAMBE	13,588.34	924.98	6,308	3,041	8,197	17,546	19,492	54,899	1.11	3.13	18.97
27	SUKOWONO	4,546.60	744.64	7,414	4,405	5,486	17,305	N/A	54,107	N/A	3.13	23.24
28	JELBUK	7,303.63	549.30	3,002	3,395	6,548	12,945	N/A	29,900	N/A	2.31	23.57
29	KALIWATES	2,433.77	837.46	26,754	3,195	3,478	33,427	N/A	93,822	N/A	2.81	39.91
30	SUMBERSARI	3,661.75	1,093.65	32,674	765	4,446	37,885	N/A	102,843	N/A	2.71	34.64
31	PATRANG	3,801.27	915.42	9,433	644	3,153	13,230	N/A	87,070	N/A	6.58	14.45
		332,194.18	35,590.68	359,122	39,979	131,293	530,394	557,200	2,141,465	1.05	4.04	14.90

Sources: BAPEMAS, 2006
BPS, 2005
Bakosurtanal, 1999

Figure 4.2.4 is a thematic map showing building distribution by type for Kabupaten Jember. In terms of number, predominant material for building is concrete, followed by bamboo and then wood. The definition of concrete in the survey generally refers to structures with walls made of brick and cement. The highest concentration of building structures can be found in the Kota Jember Kecamatan Summersari and Kaliwates as supported by their high building density in the table. Spatially, the thematic map indicates significant concentrations of buildings also exist in the coastal kecamatans of Gumukmas, Puger, Wuluhan and Ambulu as well as the kecamatan of Silo in the east and Sumberbaru in the west.

The most number of houses made of bamboo material can be found in Bangsalsari, Ledokombo, Mayang and Sumberjambe. Bamboo material generally is preferred by poorer sections of the population.

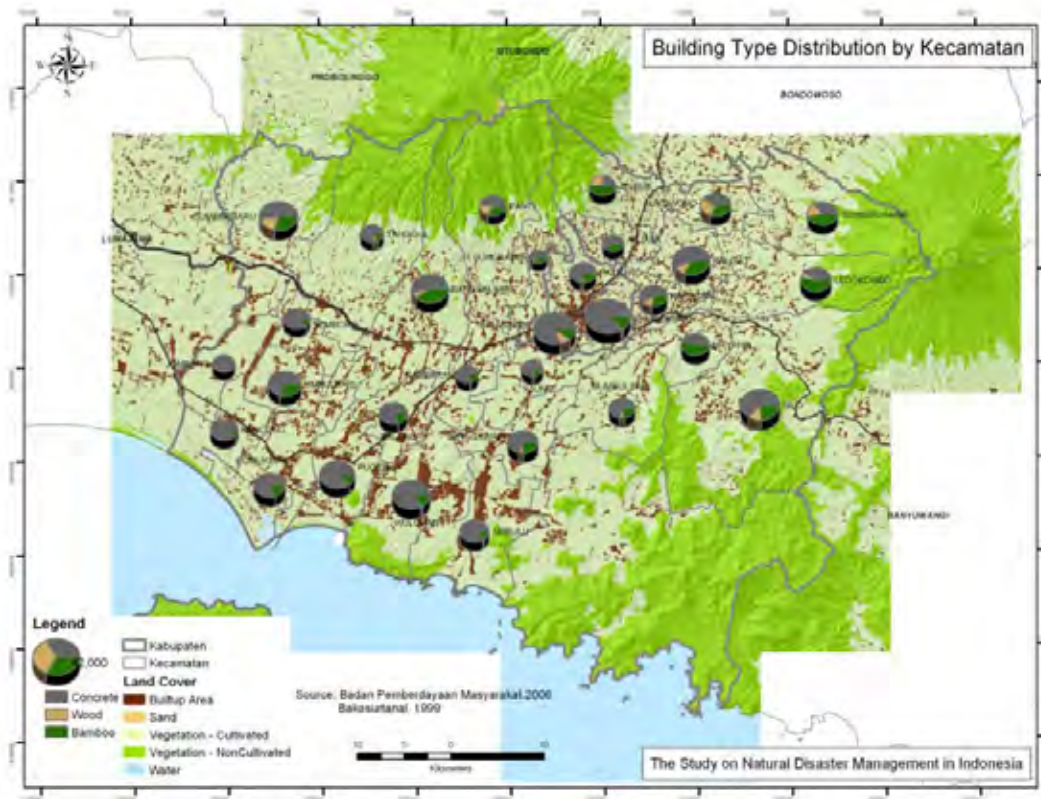


Figure 4.2.4 Building Type Distribution by Kecamatan

4.3 History of Flood and Sediment Disasters

The water-related disasters in Jember are shown in the table below (Table 4.3.1) which indicates the recent flood and sediment disasters in Kabupaten Jember. Off the table, a number of flood and sediment disasters had struck Kabupaten Jember frequently.

Table 4.3.1 Recent History of Major Flood and Sediment Disasters

Date (DD/MM/YY)	Type	Profile of Damages due to Disaster
22/03/07	Flood	Landslide in Dusun Mojan, Desa Bintoro, Kecamatan Patrang. 2 houses were damaged.
07/01/07	Flood	Flush flood disaster in Kecamatan Silo. A part of revetment works was collapsed. About 70 houses were damaged.
18/12/06	Flood, Landslide	Flood and Landslide along Sumber Lanas River in Desa Harjomulyo and Karangharjo, Kecamatan Silo. 28 houses were damaged.
22/04/06	Landslide	Landslide disaster in Desa Pondokdalem, Kecamatan Semboro.
01/01/06 02/01/06	Landslide, Flood	Kecamatan Panti and Kecamatan Rambipuji were seriously damaged due to the sediment and flood disaster. Kali Putih Settlement was totally washed away. Number of killed: 108 Damaged houses: 399 Damaged intake facilities: 11 Damaged agricultural land: some 1,400ha
29/12/05	Flood	Flood with mud flow at Dusun Jalinan, Desa Harjomulyo, Kec. Silo.
05/12/05	Flood	Disaster due to Rain and Wind in Dusun Glundengan, Desa Petung, Kecamatan Bangsalsari.
21/02/05	Landslide	Landslide Disaster in Dusun Krajan, Desa Seputih, Kecamatan Mayang.
28/11/04	Flood	Disaster due to Rain and Wind in Kecamatan Patrang and Kecamatan Pakusari. 3 houses were damaged.
21/11/04	Landslide	Landslide Disaster in Kecamatan Sumberbaru. 8 houses were damaged.
19/11/04	Flood	Disaster due to Rain and Wind in Kecamatan Panti. 21 houses were damaged.
31/10/04	Flood	Disaster due to Rain and Wind in Kecamatan Panti. 3 houses were damaged.
02/02/04	Flood	Flood Disaster in Dusun Krajan, Desa Jember Lor, Kecamatan Patrang. 100 houses were damaged.
02/02/04	Flood	Flood Disaster in Dusun Krajan, Desa Mangli, Kecamatan Kaliwates. 4 houses were damaged.
25/01/04	Flood	Flood Disaster in Dusun Krajan, Desa Sanenrejo, Kecamatan Jenggawah. 5 houses were damaged.
09/12/03	Flood	Flood disaster in Desa Tegalrejo, Kecamatan. A mosque was drifted. 5 houses were damaged severely. 8 houses were flooded. 1 secondary dam was damaged.
09/12/03	Flood	Flood disaster in Desa Pondokjoyo, Kecamatan Semboro due to overflow from Bondoyudo River. 45ha of rice field was damaged.
08/12/03	Landslide	Due to landside, A part of bearing wall was damaged in Kecamatan Kaliwates.

Date (DD/MM/YY)	Type	Profile of Damages due to Disaster
23/11/03	Landslide, Flood	Flood and Landslide disaster in Pasar Alas RW 12, Desa Garahan, Kacamatan Silo. 18 houses were damaged. 15ha of Communal Plantation were damaged.
23/11/03	Flood	Flood in Desa Suren of Kec. Ledokombo, in Desa Sempolan of Kec. Silo and in Desa Tempurejo of Kec. Tempurejo.
17/11/03	Flood	Flood disaster in Desa Slateng, Kecamatan Sumberbulus. 4ha and 9ha of farming areas were flooded.
09/03/03	Landslide	Landslide caused by continuous rain in Dusun Sumbercandik, Desa Panduman, Kecamatan Jelbuk. 2 houses were damaged severely. Estimated loss: Rp. 2.5 million.
18/02/03	Flood	Due to overflow from Bedadung river, 12 houses were damaged in Kelurahan Kepatihan. Estimated loss: Rp. 3 million.
24/02/03	Landslide	Landslide caused by heavy rain in Dusun Kopangkebun, Desa Kemuninglor. 2 houses were damaged.
24/02/03	Flood	Flood caused by the overflow from Kaliputih river and Bedadung river in Dusun Bedadung Kulon, Desa Kaliwaning, Kecamatan Rambipuji. Road, River dike were damaged. Estimated Loss: Rp. 151 million.

Source: Irrigation Agency, National Unity and Public Protection Board, Jember Red Cross, Forestry and Plantation Agency

4.4 Flood and Landslide Disaster Hazard

1) Flood

(1) Hazard Map

Figure 4.4.1 shows the flood hazard map for Kabupaten Jember, which was derived based on the flood maps or information from the relevant counterpart organizations. As shown in the figure, flood hazard areas are shown along Tanggul river, Bedadung river, Mayang river and Bondoyudo river especially in the alluvial low-lying area covering the central urbanized area to south-western area of Kabupaten Jember where the main land use is for paddy field. The most of the flood hazard areas in the alluvial low-lying area had been less than 2.0 degree in slope covering the central urbanized area to south-west area of Kabupaten Jember. In other words, the area can be defined as “flood plain/flood prone area” from a technical viewpoint, where large amount of discharge is washed out in short time from “run-off source area” in steep sided mountains. Once the flood plain area is flooded, it may take longer time until flooded water subsided if there is no reliable drainage system. In mountainous area in Kec. Silo, the hazard areas are shown as the recent banjir-bandan (flush flood with mud and debris) disaster on Jan. 7th, '07. Further, Kec. Panti and Kec. Rambipuji were also seriously suffered from banjir-bandang disaster from Dec. 31st, '05 to Jan. 2nd, '06. The one of the main causes of the disaster was excessive rainfall amount. It should be noted that the area is in steep sided mountains, thus flooded water is washed out in very short time.

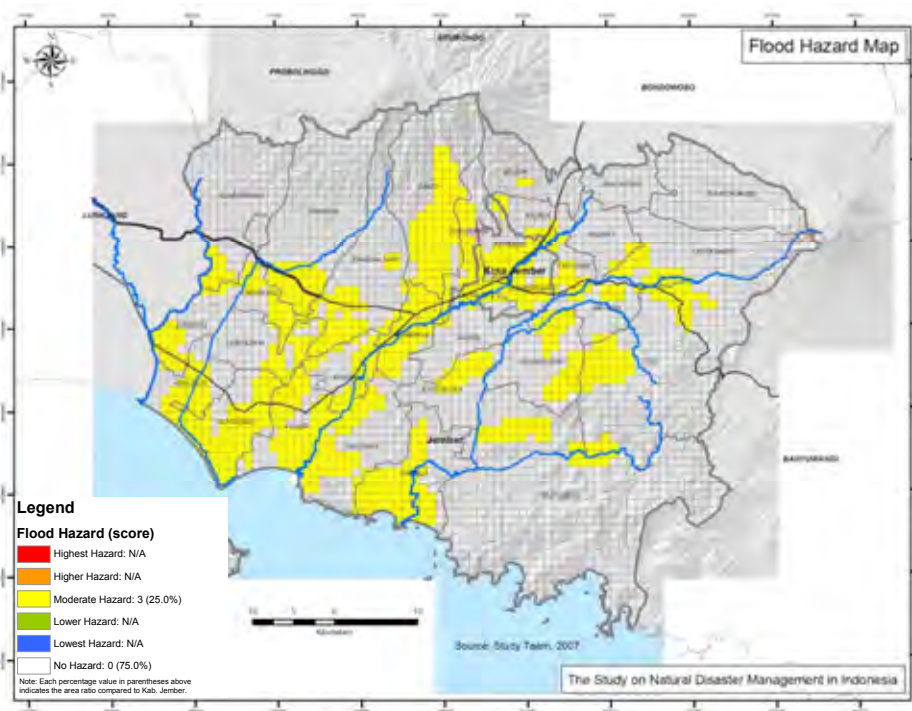


Figure 4.4.1 Flood Hazard Map

(2) Risk Map

Figure 4.4.2 shows the flood risk map for Kabupaten Jember which was derived from the flood hazard map and the vulnerability indices: 1) Population Density, 2) Built-up Area and 3) Vegetation/Cultivated Area (Land Use). The value of flood risk was divided into five (5) classes indicating relative risk classifications. “Red” means the highest risk and “Orange” indicates higher risk. Moderate risk is shown in “Yellow” while “Green” means lower risk. Further, “Blue” shows the lowest risk.

Overall trend covering Kabupaten Jember shows that the area, where population and property are concentrated along Tanggul river, Bedadung river, Mayang river and Bondoyudo river, are indicated as the higher risk of flood disaster. Highest risk indications can be seen in Kec. Kaliwates, Kec. Sumpersari and Kec. Patrang since the Kecamatan are located in urbanized and densely populated area in flood hazard. There are also the highest risk indications in Kec. Silo and some riverine areas along Tanggul river, Bedadung river, Mayang river and Bondoyudo river especially in the alluvial low-lying region covering the central urbanized area to south-western area of Kabupaten Jember.

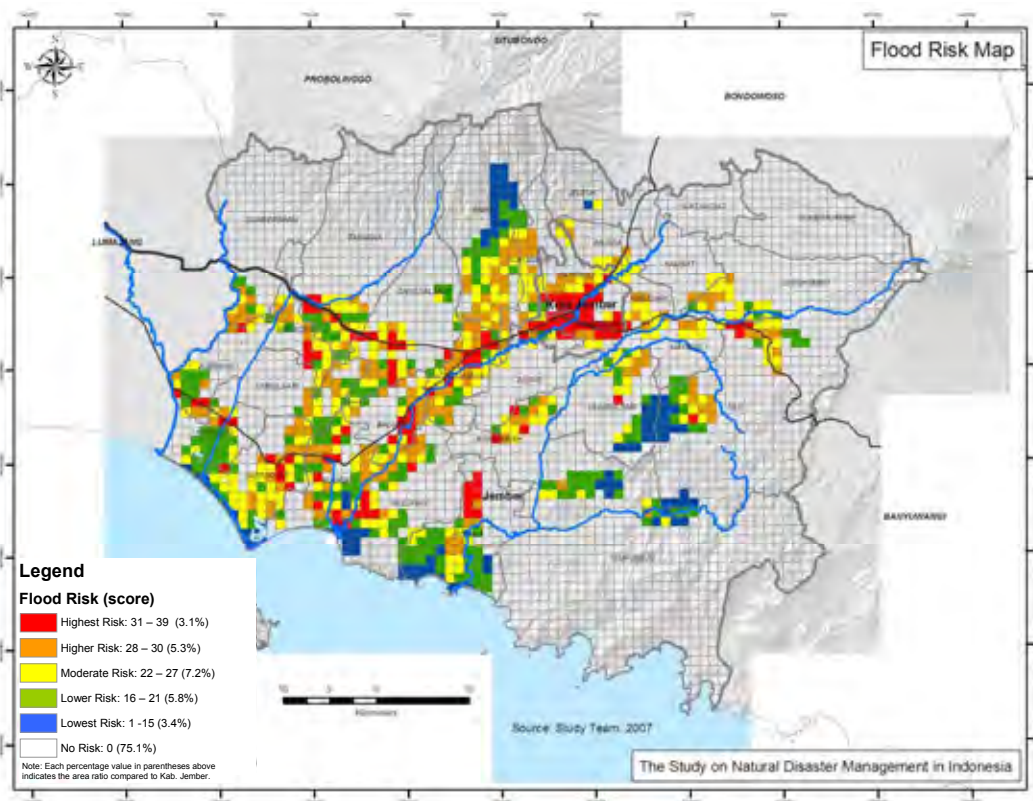


Figure 4.4.2 Flood Risk Map

2) Sediment Disasters

(1) Hazard Map

Figure 4.4.3 shows the sediment hazard map for Kabupaten Jember which consists of three hazard indices: 1) Slope, 2) Geology and 3) Annual Rainfall. The value of sediment hazard was divided into five (5) classes indicating relative hazard classifications. “Red” means the highest hazard and “Orange” indicates higher hazard. Moderate hazard is shown in “Yellow” while “Green” means lower hazard. Further, “Blue” shows the lowest hazard. As shown in Figure 4.4.3, the highest and higher hazards tend to be indicated in Kec. Sumberbaru and Kec. Tanggul, where are covered by volcanic products on the southern slope of Mt. Argopuro mountain, as well as in Kec. Bangsalsari and Kec. Panti, where are on mountainous area covered by tertiary deposit on western to southeast slopes of Mt. Raung. Particularly, sediment run-off processes are extremely active in Kali Klatakan catchment area and Kali Putih catchment area because of the following reasons: 1) Steep slope, 2) Friable geology covered by volcanic products, 3) Southern slope in high altitude and 4) Heavy rain. Furthermore, the highest hazards are indicated in Kec. Wuluhan, which is located in the south on central urbanized area of Kabupaten Jember on hilly area consisting of tertiary rock with the highest altitude of more than 300m. The reasons of the high hazard in Kec. Wuluhan are 1) Steep slopes and cliffs and 2) Heavy rain.

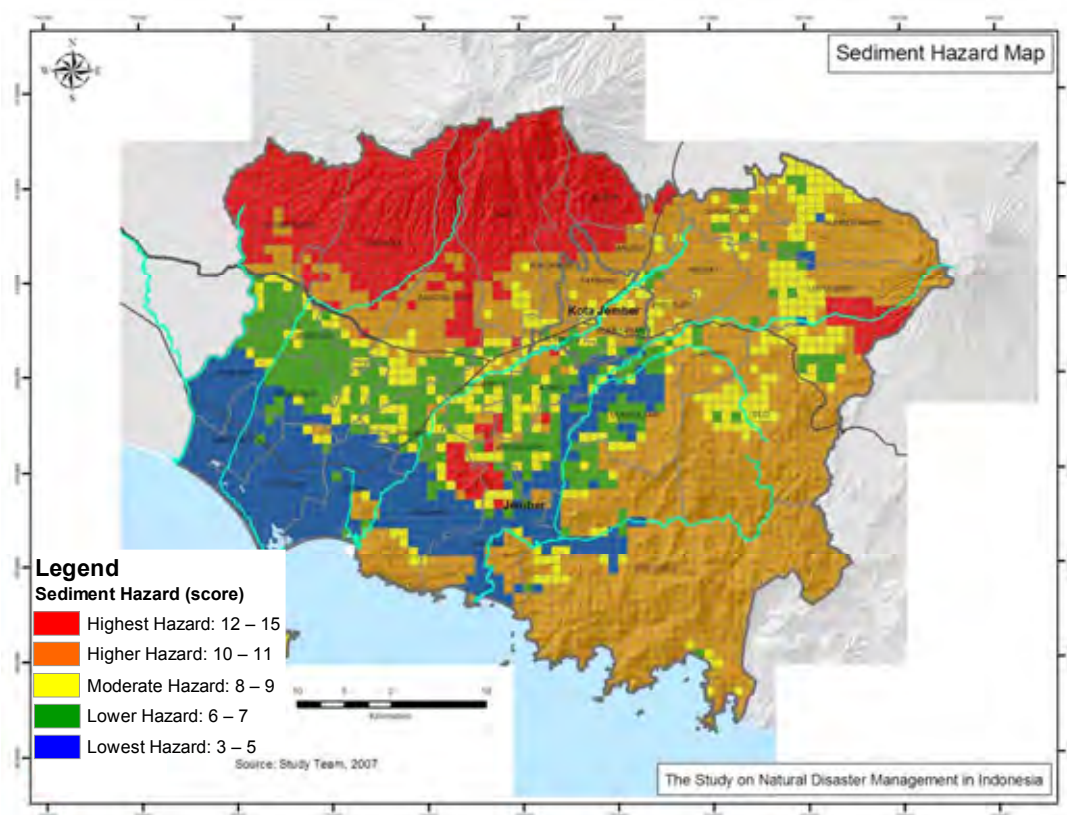


Figure 4.4.3 Hazard Map for Sediment Disasters

(2) Risk Map

Figure 4.4.4 shows the sediment risk map for Kabupaten Jember which was derived from the sediment hazard map and the vulnerability indices: 1) Population Density, 2) Built-up Area and 3) Land Cover. The value of sediment risk was divided into five (5) classes indicating relative risk classifications. “Red” means the highest risk and “Orange” indicates higher risk. Moderate risk is shown in “Yellow” while “Green” means lower risk. Further, “Blue” shows the lowest risk.

Kec. Sumberbaru, Kec. Tanggul, Kec. Bangsalsari and Kec. Panti are located in north-western mountain area and covered thickly by volcanic products with steep slope, thus the risk of sediment disaster is very high especially in densely populated and built-up area in the region. Kec. Sumberjambe is covered geologically by pyroclastic rock and in well-forested area. Recently, the number of land-slides and collapse increases year by year which is regarded as the result of illegal logging. In the area, the sediment run-off volume also increases recently and the risk of sediment disaster is very high. Most of the central urban area of Kota Jember is indicated as the highest risk. In the area, there are some steep slopes in residential area which may sometimes cause of sediment disaster. Furthermore, the highest risks are indicated in Kec. Wuluhan on hilly area consisting of tertiary rock because of the reasons: 1) Steep slopes and cliffs and 2) Heavy rain.

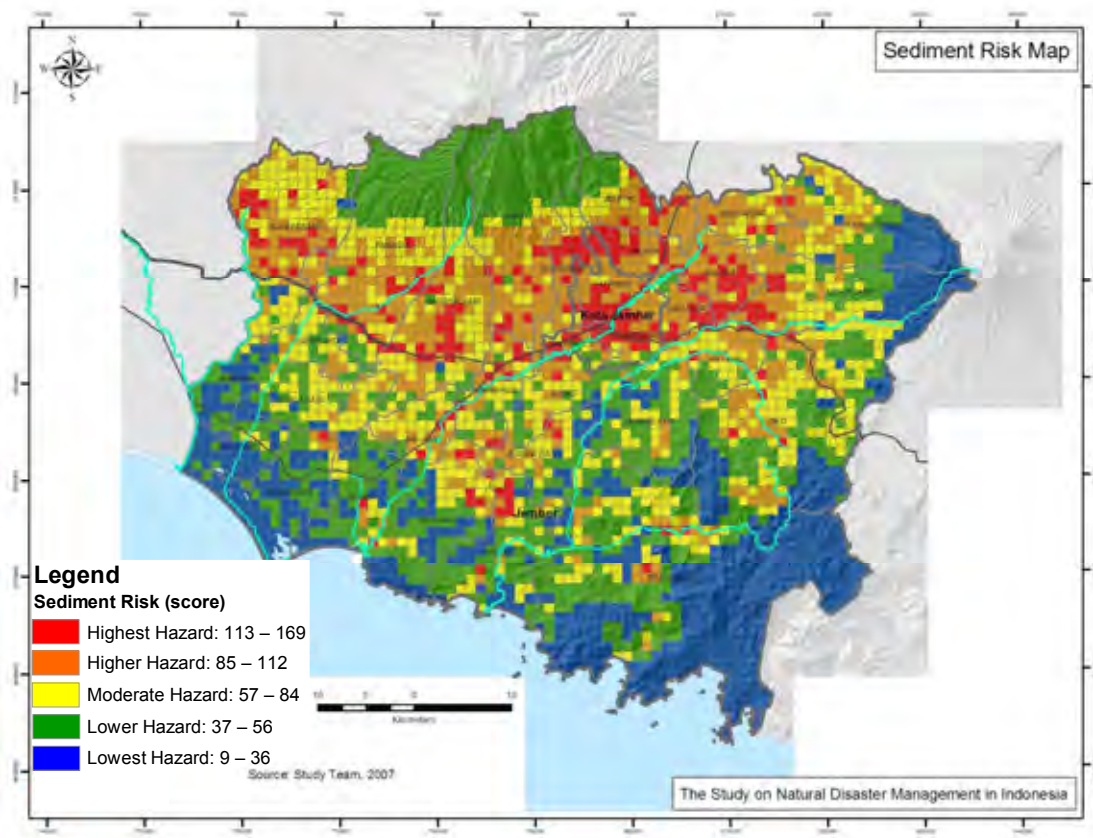


Figure 4.4.4 Risk Map for Sediment Disasters

CHAPTER 5. SOCIO-ENVIRONMENTAL ASPECTS FOR THE PLAN

In this chapter, recent trend and important points of disaster management is described briefly.

5.1 Data related with Disaster from Rain and Strom

Indonesia own steep hilly mountain and valleys area that is much greater than the lowland area and due to rapid deforestation in recent years, caused high risk of flood and sediment disasters which often occurred in the past .

Flash flood and sediment disaster are the main disasters in the region, causes potential of human losses. Of all victims by natural disaster, most of them are killed by flash flood in the region.

Rain and Storm related Disasters are predictable by observing rainfall data, and by increasing community awareness, number of victims can be reduced significantly.

5.2 Development of Computerized Information System

Due to development of information technology recently, such as mobile communication tools, PCs, and etc., information communication and data processing tools are widely pervaded. In developed country, GPS and GIS are widely pervaded and make it possible to observe real time climate data. Moreover, visual damage information system was also established. These systems will not only change means of communication, but also give great improvement on damage information gathering for disaster management when disaster occurred.

However, due to complication of the system, once the system is broke down by the disaster, all the system will be malfunctioned, therefore, dividing the system into multi-system is highly important. This distribution is useful when malfunction occurs, in the future. This kind of system could also be applied in Kabupaten Jember, however, weak point of the system must be considered in advance.

5.3 Safety of Emergency Transportation Network

At the time of disaster occurrence, safety of road network is one of most important criteria in disaster management to implement various emergency response activities. Since there is limited road network in Kabupaten Jember, it is necessary to design Emergency Transportation Network including Airport (under construction) in Jember. Safety of Emergency Transportation Network will help immediate response in emergency response.

5.4 Providing Lifeline during Disaster

In normal daily life, especially in urban area, dependence on main lifeline is extremely high, and malfunction or ceasing of these services will greatly impinge on citizens life. Lifeline provider companies have mandate to continue their service even in emergency period. Those companies must stringently prepare and organize in minimizing damages when disaster occurs.

5.5 Understanding the needs of Special Care for Vulnerable Groups

In Kabupaten Jember, ratio of elderly persons and young children is relatively high. In case of occurrence of disaster, especially for rain and storm related disaster which could be predictable in advance, so there will be certain time before disaster occurs, these vulnerable groups will need longer time to heal compare to adults. Therefore, requires special care for these vulnerable groups. Besides, it requires certain criteria of preparation, guideline or design to help this vulnerable group to evacuate in advance. These activities are undertaken within the community surrounding itself.

5.6 Guidelines for Society Regarding Disaster Mitigation Awareness

Not only government officials can be dealt with natural disaster. Disaster management must also prepare together with close collaboration with government officials, private enterprises and citizens. Therefore, each player must aware of the importance of disaster management, and it is extremely important to increase their knowledge and awareness regarding disaster management. It is rather difficult to realize the seriousness disaster management, however, disaster management is precious when disaster occurs. Mitigation measures could maximally reduce casualty.

CHAPTER 6. ESTABLISHMENT OF SATLAK PB

6.1 Definition of SATLAK PB

1) SATLAK PB has a duty to:

SATLAK PB has obligation to conduct disaster and refugee management activities in the area guided by the policy of BNPB and governor as the leader of SATKORLAK PB, in the stage before, during and after the disaster occurs, there are preventive, taming, awareness, securing, rehabilitations, and reconstructions.

2) SATLAK PB has functions to :

- (1) Illuminations, training, rehearsal and creations to increase the awareness of society on disaster management and evacuation in the area.
- (2) The enforcement of disaster countermeasure and evacuees enhancement directly in the area by using strength potency of disaster countermeasure and evacuees enhancement and also facilities in the area.
- (3) Cooperating enforcement of disaster countermeasure and evacuees enhancement with closer SATLAK of PB.
- (4) Accepting and distributing also responsibility of disaster countermeasure and evacuees enhancement aid in the area.
- (5) Other activities guided by governor as the leader of SATKORLAK PB.

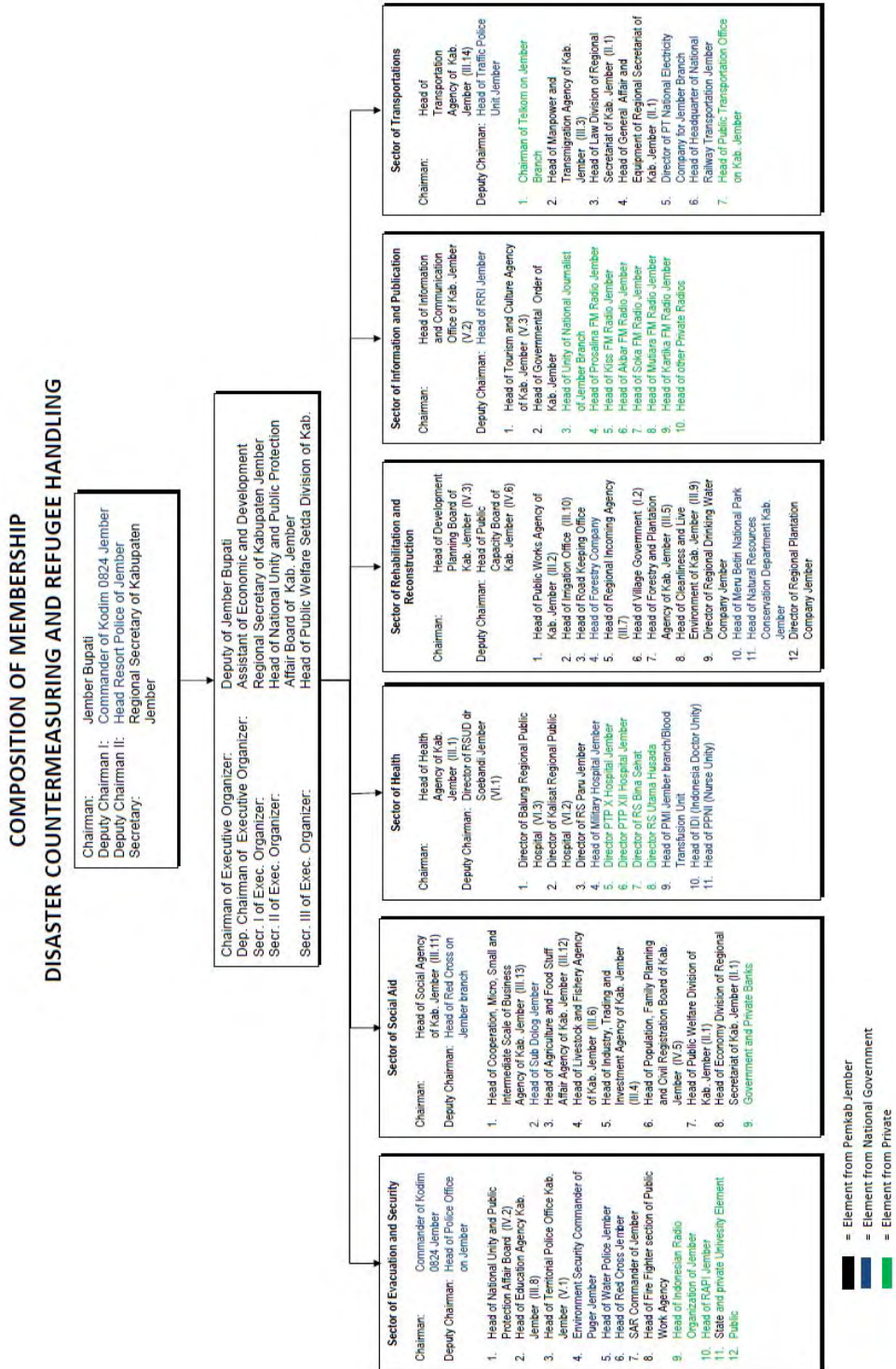
6.2 Obligations of SATLAK PB in Disaster Management Cycle

Duties of SATLAK PB in Disaster Management Cycle are shown below.

Phase	Sub Phase	Task
Pre Disaster	Prevention	<ol style="list-style-type: none"> 1. Create map of disaster area (Hazard Mapping) 2. Conduct and activate alert signals 3. Formulate general spatial planning 4. Formulate Regional Regulation on security, building, waste management condition, etc 5. Procure supply and equipment for disaster management activities 6. Formulate established procedure, implementation guidance, technical guidance of disaster management.
	Mitigation	<ol style="list-style-type: none"> 1. Honoring the established rule 2. Setting up the danger signs / disallowance signs 3. Building the security unit, the controlling unit 4. Building the danger securing facilities and retrofitting critical facilities (embankment, dam, tarsier and so on).
	Preparedness	<ol style="list-style-type: none"> 1. Conducting the training and drill on the disaster countermeasures area. 2. Publication of the history of the disaster and the way to avoid and to mitigate 3. Activated radar / ranger unit
Emergency Response		<ol style="list-style-type: none"> 1. Sounding the danger alert as the disaster is coming. 2. Controlling the emotion, managing the violence to the people to mitigate victims. 3. Recommending the emergency response team of SATLAK PB to the disaster stricken area in not least than 2 x 24 hours after the disaster occurred. 4. Mobilizing the Emergency Response Action Unit to give assistance to the disaster victims. 5. Searching and rescuing the lost victims. 6. Assisting the evacuation action (civil and property evacuation). 7. Securing the disaster stricken area especially the posses of the refugees. 8. Supplying the facilities support needed by e.g. food, clothes, drugs, temporally accommodations and so on. 9. Accepting government or public aid and distributing to the disaster victims through the Emergency Response Action Unit, Control unit (PUPSDALOPS PBP).
Post-Disaster		<ol style="list-style-type: none"> 1. Aware the possibility of the next disaster occurrence or the following disaster. 2. Recording the data of victims and property damaged. 3. Rehabilitation of the mental and physical condition of the victims so as to enable them back to the previous life as before by reengineering the damaged public facilities so as to work again. 4. Arranging a program and reconstructing accessibility, settlement, social and public facility so as to avoid or is powerful against the disaster that either the life or the living of the people and the welfare come to be better. 5. Prepare report of the disaster story and applied effort in the disaster countermeasures and the report of acceptance and distribution of disaster aid to the head of SATKORLAK PB.

6.3 Members and Organization Structure of SATLAK PB

Members and Organization Structure of SATLAK PB is shown below.



6.4 Obligations of Members in SATLAK PB

Obligations of members in SATLAK PB are shown below.

No.	SATLAK PB Sectors	Task
1	Head of Executive Organizer	1. Lead and coordinate disaster and refugee management activities.
2	Deputy Head of Executive Organizer	1. Assisting task of the head of executive organizer in the disaster countermeasures and refugees handling actions.
3	Secretary I	1. Planning and coordinating disaster aid contribution / logistic to the disaster victims. 2. Coordinating and facilitating medical aid /healthcare distribution to the disaster victims. 3. Coordinating and facilitating the victim's rehabilitation and reconstruction of facilities.
4	Secretary II	1. Coordinating and facilitating rescuing action and evacuation task to the disaster victims. 2. Coordinating and facilitating the security of disaster area and refugee evacuation and relocation of the disaster area. 3. Coordinating and facilitating the communication and transportation facilities so as to succeeding the disaster countermeasures actions and publication as well as information dissemination to the public.
5	Secretary III	1. Doing correspondences and reporting as well as data collecting. 2. Recording the acceptance, storing and distributing and responsible to monetary and material aid. 3. Facilitating documentation of the disaster countermeasures and refugees handling action.
6	Evacuation and Security	1. Coordinating all of victims searching and rescuing. 2. Coordinating / securing disaster and refugee evacuation area and blocking the danger area to mitigate number of victims. 3. Preparing temporary evacuation area / tent on a secure and accessible area. 4. Obtaining suggestion of policy formulation on the disaster countermeasures based on its department. 5. Conducting other task which is recommended by the head of SATLAK PB.
7	Social Aid	1. Planning and arranging the data of logistic supply and supporting facilities. 2. Arranging data of the needs of materials, facility and equipment. 3. Preparing and distributing logistic aid and all material needed. 4. Forming and operating the public logistic on the needed area. 5. Doing other task recommended by the head of SATLAK PB
8	Health	1. Preparing the facility of MCK (restroom and so on) and medical / physics action to the disaster victims and preparing accommodation supported by standard medical

No.	SATLAK PB Sectors	Task
		equipment and transfer victims to the hospital. 2. Coordinating medical supporting service to the disaster victims. 3. Doing other task recommended by the head of SATLAK PB.
9	Rehabilitation and Reconstruction	1. Arranging the plan rehabilitation caused by the disaster 2. Preparing all kind of supporting facilities in the temporal accommodation and repairing the needed facility. 3. Coordinating all the emergency action as well as rehabilitation and reconstruction actions. 4. Obtaining the formulation suggestion of the disaster countermeasures policy due to the department concerned. 5. Doing other task recommended by the head of SATLAK PB.
4	Information and Publication	1. Planning, preparing, and coordinating the information expanding and publicizing to the public about the case concerning with the disaster through news paper, electronic media to the public directly. 2. Documentation and publication of the disaster countermeasures action. 3. Obtaining formulation suggestion policy of the disaster countermeasures due to the department concerned. 4. Implement training and give educating to the people around the sensitive disaster area along with the others departments. 5. Doing other task recommended by the head of SATLAK PB.
5	Transportation	1. Arranging the facility and communication / transportation equipment. 2. Coordinating the communication and transportation equipment. 3. Obtaining formulation suggestion of the countermeasures policy due to the department concerned. 4. Doing other task recommended by the head of SATLAK PB.

Section 2:Pre-Disaster (Pre-Disaster Management Plan)

Damages, caused by rain and storm related disasters, sometimes exert great effects with spreading in wide areas. Due to heavy rains causing flooding and landslides affects and sometimes collapse daily life of citizens and force them for evacuation life. Damages to educational, medical, social welfare facilities will also increase the level of damages. Therefore, to prepare for disasters in Kabupaten Jember, which are often occurs, necessary measures are implemented in advance.

CHAPTER 1 CAPACITY DEVELOPMENT OF DISASTER MANAGEMNET ORGANIZATION

1.1 SATLAK PB

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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1) Roles of SATLAK PB

- Responsible for coordinating, leading, and controlling, the regional structural and non structural activities in implementing disaster management before, during, and after disaster and refugee handling with close coordination of members of SATLAK PB.
- Approval of Regional Disaster Management Plan and actual measures mentioned in the plan.
- Collection of information regarding disasters and its damages

1.2 Improvement of RUPUSDALOPS PBP

<i>Responsible Agency:</i>	<i>BUPATI</i>
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Existing establishment system of RUPUSDALOPS PBP is not clear for all procedures of emergency response activities, and in case of large scale disaster, it could caused confusion and will affect and smoothness of emergency response activities. Therefore, following measures are recommended to be implemented to improve existing RUPUSDALOPS PBP.

1) Revision of Initial Response System

(1) Primary Management System during Working Hours

Information flow regarding hazard condition, appliances used to deliver information and the responsible person for the information should be clearly decided. In this context, hazard condition means when weather worsened which may cause disaster, disaster already occurred or other conditions which already decided where emergency response should be undertaken.

Moreover, to be able to decide this hazard condition promptly, SATKORLAK PB and related organizations must improve their information collection system.

(2) Primary Management System during Night and Weekends

To anticipate if disaster occurs during night and weekends, people to mobilize communication appliances used and place to mobilize will be decided in advance.

2) Preparedness Measures of RUPUSDALOPS PBP

Respond to disaster depends on damage condition and time after the disaster, operation after disaster indicated as follows;

(1) Secure Necessary Commodities to Establish RUPUSDALOPS PBP

Head of RUPUSDALOPS PBP organize a meeting basic policy of RUPUSDALOPS PBP by collecting and analyzing disaster information. In order to establish and operate RUPUSDALOPS PBP, secretariat of RUPUSDALPS PBP should prepare necessary commodities, secure communication means and backup generators.

(2) Drills Implementation for RUPUSDALOPS PBP

Regular drill are implemented for members of RUPUSDALOPS PBP, so when disaster occurs they are able to coordinate disaster site and RUPUSDALOPS PBP, and transmit information smoothly, check equipment readiness, and able to perform procedures to decide basic policy.

(3) Room Designation of for RUPUSDALOPS PBP

Room Designation for RUPUSDALOPS PBP will help in performs emergency response appropriately and smoothly without confusion. RUPUSDALOPS PBP is established at following location;

- RUPUSDALOPS PBP is established at following location;

Priority	RUPUSDALOPS PBP Location
1	Conference Room of Bupati Office
2	Conference Room of Bupati Residence
3	Special room that accessible from anywhere

- If large scale disaster occurs and these designated indoor buildings can not be used. Open space of *Alun-alun* will be used to establish RUPUSDALOPS PBP. In this case, tents are prepared for emergency use.
- If scale of disaster is relatively small and disaster site is far from PEMKAB, RUPUSDALOPS PBP will be established in nearer location.

1.3 Supports from Other Area

<i>Responsible Agency:</i>	<i>Social Agency</i>
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In case of large scale disaster, or if implementation requirement of emergency response and recovery already fulfilled, hence, food support for staff and other commodities can be requested from adjacent Kabupaten, Indonesian Red Cross, Military, and etc. through SATKORLAK PB. In order to prepare for aid request, the following measures are implemented.

1) Preparation of Aid Acceptance from Other Area

- Coordination with related organizations, to be able to implement disaster mobilization activities smoothly, trainings and drills are implemented regularly by estimating disaster location.
- Prepare cooperation agreements for goods and foods, equipments etc.
- Cooperation Agreement with other Kabupaten. In order to implement the cooperation promptly and smoothly, base camp with all supporting activities must be prepared.
- Each supporting organization must conduct their responsibilities well.

2) Designate Base Camp for Supporting Activities

Following location is designated as base camp for supporting activities;

- Main base camp for supporting activities is *Alun-Alun* in front of Bupati Office.
- If affected area is far from *Alun-alun*, base camp will located to nearer area and it is decided by Bupati.

CHAPTER 2 ENHANCEMENT OF DISASTER MANAGEMENT CAPACITY FOR RESIDENTS AND PRIVATE COMPANY

Main concept of “self-protection” is concerned as vital elements in disaster management. Preparation for natural disaster individually could increase residents’ awareness and company owners for disaster preparedness. Everyday effort will strengthen city and the residents against natural disasters..

2.1 Expectation to Residents

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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1) Participation in Disaster Prevention Drill

In order to develop awareness of disaster and appropriate emergency response, disaster prevention drills at community and company levels should be conducted regularly. Knowledge and skill of disaster prevention drill are disseminated in an appropriate way such as by seminars, brochures and websites. Also through these information tools, SATLAK PB will encourage residents to participate in disaster prevention drills.

2) Participation in Community Group

Participating in community activities will make residents know each other and could share information. Residents and local businesses are strongly encouraged to participate in Community Organization for Disaster Risk Management so they could be familiar with activities that must be done when disaster occur.

3) Discussion with Family Members

Family members are not always in same place when disaster occurs. Discussing a defined meeting place, how to communicate, and what should be done by each family members when actual disaster occurs will help greatly to mitigate any confusion. Therefore, every family are strongly encouraged to often have discussion with the family members.

4) Water and Food Supply

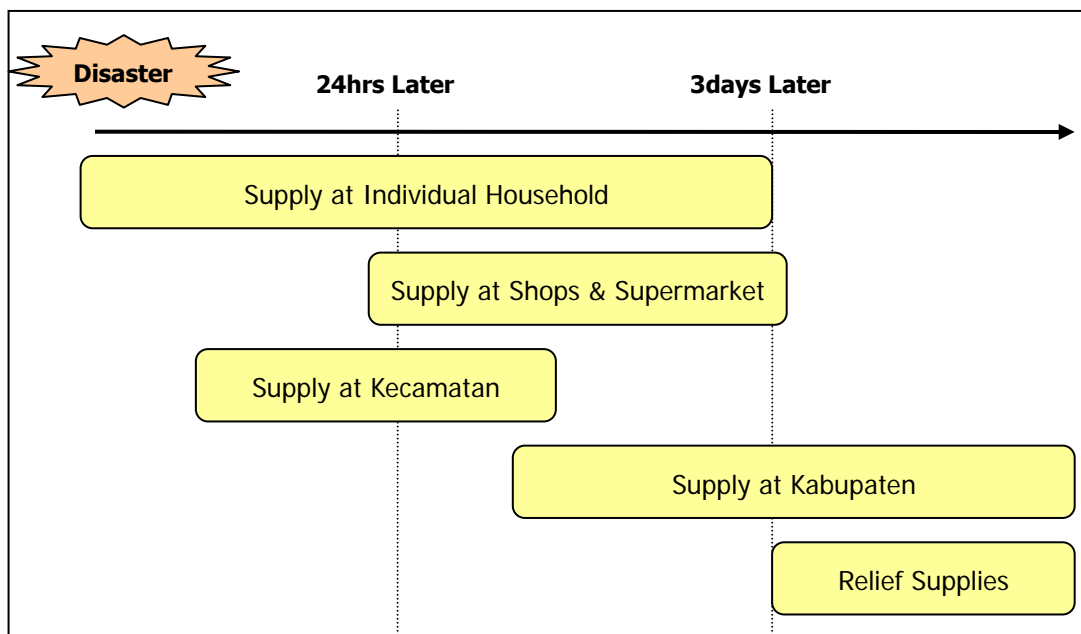
After disaster occurs, transportation system is likely to be in trouble due to obstacle of road condition and social chaos. Hence, each household is suggested to keep water and food supply at least for three days in case Kabupaten and Kecamatan could not immediately deliver water and foods because of the above reasons. The following tangible advices for residents are considered.

(1) Water Supply

Necessary water for drinking is considered approximately three liters per person per day. Stockpile of water should be three liters multiple number of family members at least. Apart from drinking water, extra amount of water for toilet and bath will be necessary. Bath tubs and buckets used in household are recommended to fill up with water regularly.

(2) Food Supply

Appropriate amount of food should be kept as stockpile individually. Notably in case of the households with infants or/ and elderly, the stockpiles should be prepared in consideration of specific foods such as powder milk.



Source: Sapporo Emergency Management Office, 1998, SAPPORO: Provision Against Emergencies

Figure 2.1.1 Necessary Supply Based on Time

5) Preparation of Commodities

Under the emergency situation, some items as well as stockpiles are needs to bring out of the house quickly. These items including cash, torch, portable radio, first aid kit, clothes and foods are recommended to be packed for carry on.

6) Safety Confirmation and Reinforcement of Houses

Residents are encouraged to check structure of houses and other goods in order to confirm the safety against disasters. In case of the absence of safety, buildings and physical structures shall be reinforced. Things that strength is encouraged to be confirmed are as follows:

- Roofs and signboards

- Columns and outside antennas
- Fences and stonewalls

7) Confirmation of Evacuation Place

Evacuation places near houses and the routes should be informed to residents.

2.2 Expectation to Society

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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Communities receive primary impact of disasters; meanwhile, the first and continued response on the disasters will come from community members itself. Well prepared and protected communities are important factors to reduce adverse impact of disasters. Therefore, establishing a well resourced, organized and sustainable community organization is a key strategy to effective disaster risk management.

1) **Activities of Community Organization for Disaster Risk Management**

Disaster risk management has collective responsibility to a large extent. When people bind themselves into a group, they play more active roles in realizing a better disaster risk management including disaster response in case of emergency and disaster preparedness in normal time. In addition, there are usually big gaps in understanding needs for disaster risk management between governments and communities. To share common understanding with governments, group actions of communities for identifying needs and priorities, developing proposals, and having risk communication would be promoted. Therefore, community organization for disaster risk management should conduct the following activities:

(1) **Development of Community Level Disaster Risk Management Plan**

To ensure dependable, timely and coordinated actions in case of emergency, advance planning for disaster risk management is very important. The plan includes (a) organization structures in case of emergency and in normal time, (b) community's emergency response activities such as information collection & dissemination, evacuation support, search and rescue, and coordination at evacuation shelters, and (c) annual plan of community organization activities.

(2) **Identification of Community Risks and Vulnerability**

To make an appropriate plan, it is important to identify accurate condition of risk and vulnerability of community. Community-based hazard map utilized local information should be developed in each community. Evacuation routes and places should be decided in advance based on the hazard map.

(3) **Knowledge Dissemination on Disaster Reduction**

To assure prompt and appropriate actions of community members in case of emergency, people should be well informed and educated by correct knowledge on disasters and disaster reduction.

Providing opportunities for learning disaster risk management to all community members is one of the important activities of community organization.

(4) Conducting Disaster Risk Management Drills

To be ready for proper actions in emergency situation, just merely having knowledge is not enough. Conducting regular drills is very important to understand the plans, confirming coordination with other related organizations, and practicing emergency actions that are very useful for further improvement action implementation. Organizing community-oriented disaster risk management drills on regular basis is essential.

(5) Maintenance of Shared Equipments and Materials for Disaster Risk Management

Equipments and materials for community to conduct disaster risk management activities should be well prepared and maintained. The proposed equipments and materials to be prepared for the purpose include generator, two-wheeled cart, rescue tools, helmet, tool kit, (electrical) saw, hydraulic pump, shovel, and bucket, battery-powered radio, hand loud speaker, torch, blanket, first-aid kit, drinking water, and tent.

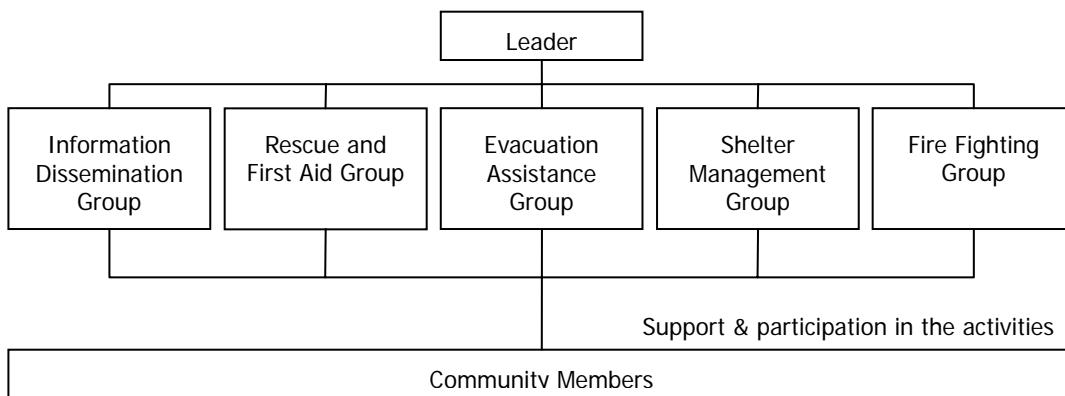
(6) Safety Check of Facilities and Buildings/Houses

To avoid damages caused by collapsed and falling objects/construction, regular safety check of facilities and buildings/houses should be promoted. Inspection conducted by people at their own home as well as community systematic inspection for each area should be conducted periodically.

2) Establishment of Community Organization for Disaster Risk Management

The existing community organizations or groups should be utilized for community organizations for disaster risk management rather than establishing a new organization. Especially, civilian defense unit (LINMAS) in village could be used as core group for this purpose. The Koran reading groups will be also effectively utilized for ensuring wider participation of the community.

The proposed organization structure is shown in the figure below.



3) Enhancement of Capacities in Community Organization for Disaster Risk Management

SATLAK PB has responsibility for promoting establishment of a community organization for disaster risk management in each village and capacities enhancement in the organization. The following activities should be conducted for the purpose; (a) conducting training programs for leaders of community organization, (b) providing subsidy program for activities and preparation of equipments in community organization, (c) development of publications or materials to be utilized in community activities, (d) promoting cooperation with neighboring villages, and (e) promoting collaboration of community organization with relevant organizations such as volunteer groups and local private company.

2.3 Expectation to Private Company

<i>Responsible Agency:</i>	<i>Trading Industry</i>
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1) Formulation of Disaster Management Plan for Private Company

Private company are expected to make their own disaster plan for preparedness and emergency responses according to characteristic of each company such as type of business, number of staff and office location.

2) Development of Disaster Formation in Each Private Company

In time of disaster, private company owners are required to lead emergency responses including giving instruction and communication to their employees. Under such circumstance, cross-sectional action would be necessary to mitigate damages and confusion. Development of internal special formation in advance is recommended. In certain situation, confirmation of communication procedure to RUPUSDALOPS-PBP is strongly advised in order to report damages suffered during disaster. Emergency telephone number at Rehabilitation and Construction Section at RUPUSDALOPS-PBP must be distributed to all of private companies in advanced.

3) Disaster Education for Employees and Conducting Disaster Prevention Drill

Discussion regarding disaster mitigation measures with employees periodically is efficient in handling disaster. Through series of discussions, the awareness of disaster management in employees can be developed. Disaster prevention drill is also an effective way for disaster preparation. Information of disaster management plan for private company and good drill practice should be distributed to all of the private company in Kabupaten Jember.

4) Confirmation Safety and Maintenance of Facilities

In order to mitigate damage of buildings and facilities, safety inspection should be carry out regularly, especially by reinforcement of facilities and improvement of emergency equipments.

Notably, there are many retail shops along the roads that sell (benzene) in bottles. The bottled-benzene may cause fire as secondary disaster. Shop owners are advised to change these bottles from glass container to plastic one.

5) Supply Encouragement for Private Company

Private companies are encouraged to keep stockpile such as water and foods, and emergency kits in their facilities. The amount of food and water for stockpile is at least for three days period according to number of employees. Emergency kit includes rescue and relief facilities such as lamp, portable radio, first aid kit and blankets. Information of stockpile for private company will be delivered by brochures and website.

6) Coordination with Community Organization for Disaster Risk Management

When disaster occurs, private company should play emergency responses role as member of local community. For this, each private company could participate in disaster prevention drill at community level. Through such cooperative activities, linkage between Community Organization for Disaster Risk Management and private company will be strengthened enough in order to take appropriate actions under emergency circumstance.

2.4 Volunteer Organization

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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Based on experiences from previous disaster, volunteer organization including NGO has played an important role in emergency responses. Therefore in order to strengthen cooperation with volunteer organization it is vital to exploit all efforts for rescue and relief activities when disaster occurs. For this purpose, two major activities will be carried out before and after disaster.

Before disaster, Social Agency at Kabupaten Jember should collected data of local, regional, national also international volunteer organizations/groups in both local and international, and make registration for those organizations in advance.

After disaster an “emergency sector” in order to coordinate with volunteer organization will be established under Social Aid in RUPUSDALOPS-PBP. This sector will develop a formation and clarification of each role for volunteer organization/groups in order to smooth activities and increase efficiency. The following activities are considered to carry out under emergency situation.

- Development of coalition with volunteer groups and organizations
- Supply controlling of voluntary activities

1) Establishment of Emergency Coalition

To establish emergency coalition among not only government agencies and volunteer organization but also local private company and Community Organization for Disaster Risk Management is important for efficient emergency responses after disaster occurred. Coordination with military service in terms of sharing information and dispatching volunteer groups will also increase efficiency.

2) Coordination with Volunteer Groups outside Kabupaten Jember

Volunteer groups outside Kabupaten Jember such as international NGOs will be coordinated under SATKORLAK-PB.

2.5 Dissemination of Disaster Management Knowledge

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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Disaster management plan by government agencies is not enough to minimize damages caused by disaster, disaster risk management by community organization and residents also hold important role. Therefore, both employee of related government agencies and residents should have the right knowledge regarding disaster management and disaster itself.

For example, erosion and flood are generally caused by heavy rain or/and continuous rain in rainy season. Residents are required to increase their awareness and be aware of signs of disasters. Confirm the nearest evacuation place and routes in advance could be effective to mitigate number of victims.

The following activities will be carried out in order to disseminate disaster management knowledge for all parties

1) Explanation and Education of Disaster Management Knowledge

(1) Explanation on Disaster Management to Government Employee

Seminars and lectures regarding responses on disaster should be conducted for government employee in order to disseminate of disaster management knowledge.

A. Methodology

- Seminar and workshop at the office
- Work training
- Brochure distribution for disaster management
- Lecture

B. Contents

- Basic knowledge of rain and storm related disaster such as flood, erosion and storm wind
- Kabupaten Jember regional disaster management plan
- Past natural disasters in Kabupaten Jember
- Roles of government agencies
- Prevention of infection disease at the time of disaster

(2) Explanation regarding Disaster Management for Resident

Knowledge dissemination and explanation concerning disaster management should be conducted for residents in order to increase their awareness.

A. Methodology

- Publishing article concerning disaster management in public newspaper
- Brochure distribution regarding disaster management
- Exhibition regarding disaster management
- Making video related to disaster management
- Lecture
- Making internet site regarding natural disaster management

B. Contents

- Basic knowledge of rain and storm related disaster such as flood, erosion and storm wind
- Brief explanation about Kabupaten Jember regional disaster management plan
- Preparation for disasters
- Emergency responses

(3) Education for Students and Children

Education in disaster management will be provided for the students and children with the purpose of protection against the disaster. In particular, it is efficient that residents are promoted to have an awareness of disaster prevention from their childhood.

A. Methodology

- Brochure distribution for disaster management
- Making video related to disaster management

B. Contents

- Basic knowledge of rain and storm related disaster such as flood, erosion and storm wind
- Preparation for disasters
- Emergency responses

2) Disaster Prevention Drill

Disaster drill and simulation will help all parties to take prompt and appropriate actions when actual disaster occurs. The disaster simulation should be comprehensive and involve all related parties also residents in disaster hazard location. In addition actions towards handicaps and sick people should also be taken into account.

(1) Comprehensive Disaster Prevention Drill

Comprehensive disaster prevention drill and simulation will be conducted as if large-scale disaster actually occurs in Kabupaten Jember. The drill includes information dissemination regarding earthquake, establishment of disaster prevention headquarters, fire fighter, rescue, relief, security, and recovery. Before conducting the drill, duties of each related parties should already be define in order to have smooth and efficient drill.

(2) Emergency Responses Drill for Related Agencies

A. Mobilization Training

This mobilization practice of government agencies will be conducted as if disaster occurs outside office hours in order to simplify mobilization of officer and establishment of RUPUSDALOPS-PBP as soon as possible.

B. Training on Establishment and Management of RUPUSDALOPS-PBP

Training on establishment and management of RUPUSDALOPS-PBP will be conducted to attain efficient and quick emergency responses.

C. Training on Information Dissemination

Training on dissemination the most basic information such as damages and casualties will be carried out according to disaster condition occurred.

D. Emergency Evacuation Drill

This evacuation drill is not only for emergency condition but also will be conducted for rescue and relief activities in order to smooth evacuation process.

(3) Drill of Private Company

A. Information and Communication

Private company suffering from damages because of disaster should report to the sector of Rehabilitation and Reconstruction at RUPUSDALOPS-PBP. For such circumstance, all of the companies are encouraged to understand the reporting procedure at normal condition. In addition, important telephone number of RUPUSDALOPS-PBP should already be disseminated to each company.

B. Evacuation Drill

Every company is encouraged to conduct evacuation drill.

C. Training on First Aid and Rescue

Private companies are encouraged to practices on emergency medical care including first aid and carrying casualties on a stretcher.

(4) Individual Emergency Prevention Drill

A. Emergency Drill

The drills include evacuation and guiding drill for old and sick people who needs support to evacuate.

B. Training on First Aid and Rescue

Training of emergency care includes first aid and method to carry casualties on a stretcher.

CHAPTER 3 *RESPONSE ENHANCEMENT FOR VULNERABLE RESIDENTS*

3.1 Measures for Vulnerable Group

<i>Responsible Agency:</i>	<i>Social Agency</i>
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Elderly, patient, and infant may need to support for taking appropriate action under emergency circumstance. Therefore, measures for these physically weak people should be included in disaster management plan.

1) Measures for Invalids

(1) Data Collection of Invalids

Social Agency should collect data on amount and dissemination of invalid residents in order to have smooth evacuation at the time of disaster. This registration system for the invalids should be conducted so invalids and their family know how to react properly when disaster occurs. Except the amount and dissemination, data that should be collected for registration are address and condition of the invalids. The registered information including their address and conditions will be updated every six months. This information should be shared with the Army/Fire Fighters so evacuation plan for invalids can be prepared.

(2) Communication System for Invalids and their Families

Information delivery system when disaster occurs for invalids and their families should be made to secure their safety, for example by using home telephone or mobile phone. In case that invalids and their families have no such communication facility, leader of the Community Organization for Disaster Risk Management or neighborhoods will be requested to deliver the information when disaster occur. Also exploit the speaker of Mosques are considered as alternative communication tool in emergency situation.

(3) Instruction for Families with Invalids

Disaster management brochures should to be distributed for the invalids and their families. They are also expected to participate in local community activities in order to have supports from other community member at emergency situation.

(4) Instruction for Community Organization on Disaster Risk Management

Community Organizations for Disaster Risk Management which have invalids are expected to pay attention in helping those weak people in time of disaster. When the member is unable to

walk, Community Organization for Disaster Risk Management should prepare stretchers for emergency condition.

3.2 Foreigner Management

<i>Responsible Agency:</i>	<i>Social Agency</i>
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Currently a number of foreigners reside in Kabupaten Jember, they might be suffered from disaster itself or/ and secondary disaster due to language barrier and absence of information about disaster management.

1) Registration of Foreign Residents

Kabupaten Jember needs to collect the data about foreign residents in order to disseminate information of disaster management for them. Therefore a registration system should be established. This system will encourage foreign residents in Kabupaten Jember to register at the Social Agency about their data such as address, language ability and occupation. Based on these data, an appropriate brochure will be formulated in English or other appropriate language which includes disaster management information and map with evacuation places and facilities, and emergency telephone numbers.

2) Disaster Prevention Drill with Foreigner

Area where the foreign residents live is encouraged to conduct disaster prevention drills which involving foreigners. Private companies which hire foreigners are also requested to conduct the drills by involving them. Through these activities, foreign residents are expected to be able to obtain their awareness about disaster management and emergency responses.

3) Broadcasting for Foreigners

After establishment of registration system, urgent and important information such as metrological warning messages will be broadcast through radio or local television for public in Indonesian and English or other appropriate language.

3.3 Safety of Infants and Children

<i>Responsible Agency:</i>	<i>Health Agency</i>
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Infant and children are very vulnerable to become victim when disaster actually occurs because they are still unable to take appropriate action when flood, erosion, or mudflow happens. For securing their safety, following measures should be implemented.

1) Disaster Management Instruction for Families

Information of disaster management and emergency responses will be provided to families with infants and children. Brochure which includes information on how to handle infants and children when disaster occurs will be planned to prepare and disseminate to related families to encourage their awareness.

2) Dissemination and Instruction for Communities and Neighborhoods

Under emergency situation, parents or family members might not be with their infants or children. For such case, infants and children need help from community or neighborhoods for taking appropriate action. Therefore dissemination and instruction of disaster management on how to handle infants and children will be delivered to communities and neighborhoods.

CHAPTER 4 DEVELOPMENT OF DISASTER INFORMATION COMMUNICATIONS NETWORK

Development and effective operation of disaster information communication network, enhancement of radio communication network, and multiplexing of information network will be advanced in order to disseminate the proper information rapidly to the citizens as well as that agencies engaging in rescue and relief activities grasp the damage condition adequately so as to conduct the effective activities in close contact with each other.

4.1 Design of Disaster Communication System

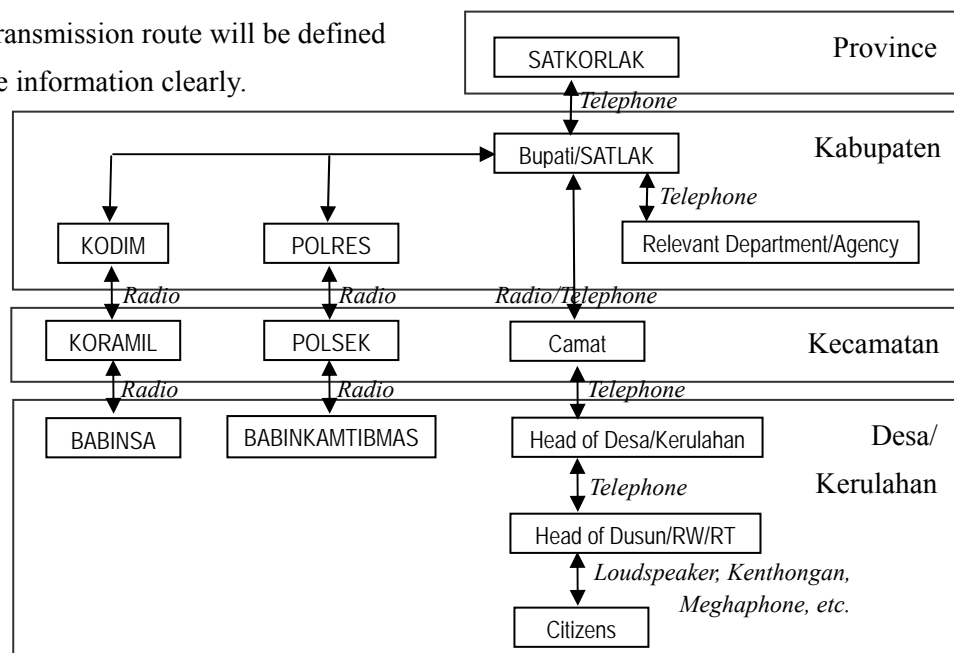
Responsible Agency:	Transportation Agency Communication and Information
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1) Objective of Disaster Communication System

- (1) Means and route of information transmission at a disaster will be established for rapid and effective emergency response.
- (2) Disaster information like damage, affected area, etc. will be unified and shared among relevant agencies who responsible for emergency response at time of disaster.
- (3) Disaster information will be provided to the community in order to give a sense of safety.
- (4) Disaster information will be deliver to related agencies, provincial government also other Kabupaten and other cities in East Java province.

2) Information Transmission Route

Information transmission route will be defined to transmit the information clearly.



3) Development and Multiplying of Information Transmission Device

The following various means for information transmission will be developed in order to provide and disseminate information rapidly and clearly.

- (1) Telephone (wired phone and mobile phone), SMS
- (2) Radio communications for disaster prevention and administration between SATLAK and Kecamatan

Radio communication system will be installed at desa/kelurahan and small government unit like dusun and RW/RT.

- (3) Other radio communication system such as military radio, police radio and amateur radio
- (4) Private radio station
- (5) Mosques loudspeaker, Kenthongan, car loudspeaker
- (6) HP of Kabupaten Jember, E-mail through internet
- (7) Messenger

4) Development of Disaster Information Network, and Information Gathering and Store System

In addition to the above, disaster information network will be developed. Disaster information network will be used not only for information sharing at time of disaster but information from each department/agency and the residents should also be compiled and stored. Based on these data, disaster information database in Kabupaten Jember will be prepared and the database will be utilized to update temergency response plan, plan the structural and non-structural disaster countermeasures, and to and revise the hazard map, etc.

(1) System Outline

This system is information sharing system using network by computer LAN system and WEB to connect with each department and relevant agencies in Kabupaten Jember. Network among each department will be utilized as an administrative information system on normal days, and will be operated as disaster information communication network system at time of disaster. The network will also be utilized as disaster information database.

(2) Centralization and Share of Disaster Information

This system should be able to accommodate information from society by making link between communication network of military and police WEB, and disaster information from each department using computer network. The system should also be able to access from entire Kabupaten Jember.

(3) Providing Information to Residents

This system can be access by public through internet in order to enable them to have disaster information and method of handling.

This system will also be connected with computers at schools, especially schools which will be use as emergency shelter at time of disaster.

4.2 Operation of Disaster Information Communications Network

<i>Responsible Agency:</i>	<i>Transportation Agency, Communication and Information</i>
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1) Development and Implementation of Information Transmission Route

The following activities will be done to receive and transmit the information certainly.

- (1) To make a list of telephone number of agencies and persons in charge of information receiving and transmission, and update it regularly
- (2) To clarify the priority order of means of information transmission
- (3) To establish flexible route of information transmission so as not to interrupt the information transmission on the way

2) Maintenance of Information Transmission Devices

Regular maintenance of equipments, regular test for confirming information transmission, and information transmission drill will be done to confirm the equipment could function well at emergency situation.

4.3 Improvement of Operational Skill of Employee

<i>Responsible Agency:</i>	<i>Transportation Agency, Communication and Information</i>
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It is important to increase official staff with good skills for information communication equipments so they could operate the disaster information communication system to function well at time of disaster. This skill enhancement is conducted through training by the equipments.

CHAPTER 5 RESCUE/ RELIEF, MEDICAL TREATMENT MITIGATION PLAN

5.1 Capacity Development of Fire Fighting

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Firefighter takes primary role of rescue, relief, and medical treatment when disaster occurs. Capability of the firefighter might influence to size of damages and casualties. Therefore enhancement of firefighter capability is quite useful to cope with disasters. Improvement of the internal formation and encouragement of disaster knowledge and their awareness for firefighters are strongly promoted.

1) Capability Building of Fire Fighting Facilities

(1) Facility Improvement

Improvement of firefighter facilities is carried out for functional activities. At this moment, there are six fire engines in Kabupaten Jember, in which two fire engines are old. For this circumstance, Public Works Agency intends to increase the number of fire engines or at least upgrade existing fire engines for preparation of emergency.

Built up area, especially urban and business district area, is likely to have high density and complexity in accordance with progress of economic development. For efficient relief activities in these areas, equipments including ladder truck are very important in case emergency situation occurs in the area.

(2) Establishment of Information System

Emergency responses of firefighter are in collaboration with RUPUSDALOPS-PBP (emergency response head quarter) and fire brigades at community level (LWLP) when disaster occurs. Sharing information is vital to process smooth activities. Therefore, information system is planned to be establish to connect these three organizations. Emergency equipments such as radio transmission also should be introduced to firefighter and LWLPs in case of disconnect telephone line.

(3) Education for Firefighters

To improve emergency responses of firefighters, an instruction manual intends will be made and distributed to them. This would encourage each firefighter to understand methods of rescue and relief under emergency circumstance.

2) Establishment of Fire Fighting Network

(1) Organizing of Firefighters

Firefighter needs contact with many organizations and groups in the time of disaster. Under emergency circumstance, for avoiding any confusion, firefighting should make sure how to communicate, and who is the contact person of organizations and groups in advance.

After disaster, firefighter should make contact with Evacuation and Security sector at RUPUSDELOPS-PBP. For quick information gathering, an emergency committee for operations management will be established within the firefighter. Firefighters are also encouraged to exchange information with LWLPs.

On the other hand, fire fighters are required to coordinate with Health Sector at RUPUSDELOPS-PBP. Firefighter needs to cooperate with and inform to hospitals and Red Cross Jember for rescue effort of the casualties. For this occasion, firefighter also requires close communication with hospitals and Red Cross in advance.

(2) Network Development between Firefighters and LWLPs

In Kabupaten Jember, there is only one firefighter facility. For preparing large scale disaster, the network between firefighter and LWLPs is a fundamentally important to cope with the emergency situation. Disaster prevention drills with LWLPs will be organized for development of strong linkage and sharing information between firefighter and LWLPs.

3) Increasing Member of Firefighters and Skill Increment like Life Guards Member

(1) Increasing Member of Firefighters

Total number of fire fighting personnel at this time is only 16 personnel, which is not enough to handle large scale or series disaster. Therefore, number of fire fighter member need to be added..

(2) Skill Increment like Life Guards Member

Kabupaten Jember does not have life guards. This could be a weak point in disasters management efforts, especially in the implementation of medical treatment at emergency situation. The fire fighters would be better to have basic knowledge about first aid treatment and techniques. The Public Works Agency has a plan to send a request to central government for dispatching a person who can train the fire fighter for such skills.

After obtain those skills, the firefighter will disseminate the knowledge and skills to LWLPs, Community Organization for Disaster Risk Management and residents so that they could give first aid when emergency situation occurs.

5.2 Education for Residents and Communities

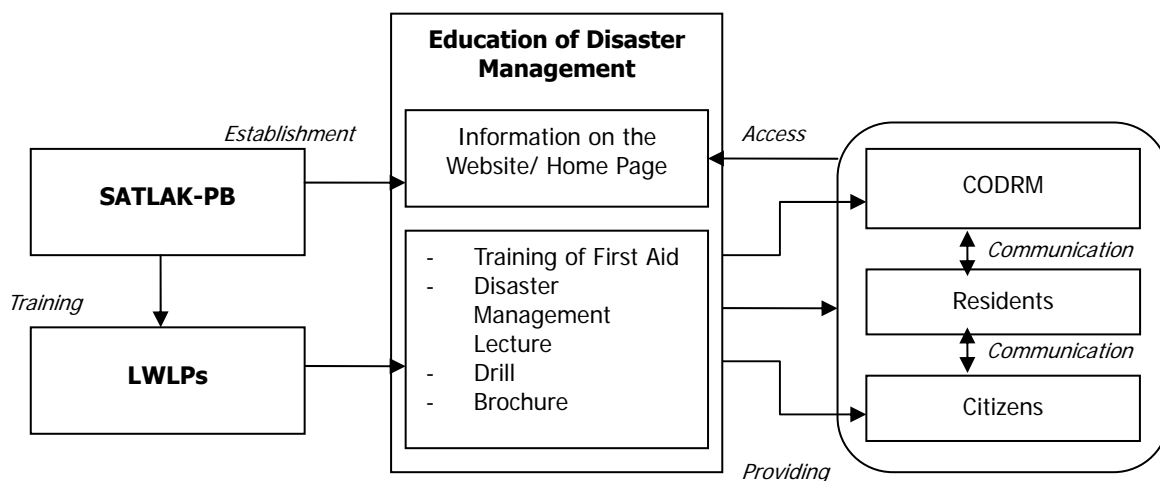
Responsible Agency:	SATLAK PB
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1) Providing Education of Residents

Constant awareness of disaster management for residents could help to mitigate the damage from disasters. Through experiences of participating in disaster prevention drills and lectures, their knowledge of disaster prevention might be expanded enough to prepare for disaster by themselves. For this, the following actions are considered to be taken.

- First aid training
- Lecture on disaster management
- Disaster prevention drill
- Brochure of disaster management
- Establish information of disaster management on the web

For sufficient education of disaster management for residents, LWLPs and Community Organization for Disaster Risk Management take a central role in the education.



CODRM: Community Organization for Disaster Risk Management

Figure 5.2.1 Education System

2) Education for Households

First responses when disaster occurs are fundamentally important for mitigation of damages from disaster. Therefore information of first responses which should be taken at the time of disaster should be disseminated to citizen. Following actions are necessary to give education to households..

(1) Public Information of Disaster Management

A. Public Information for Entire Kabupaten

Information of storms, and heavy rains supposed to be disseminate to all of residents in order to promote disaster management measures.

B. Public Information by Each Kecamatan

Information of flood and erosion should be disseminated to residents who live in the disaster risk Kecamatan. Dissemination of necessary information should be conducted by each Kecamatan.

(2) Distribution Method of Public Information

A. Disaster Management Week

“Disaster Management Week” will be planned for one week every year to promote disaster management activities such as drills and lectures. On that week, a series of promotions will be conducted by targeting on not only government agencies but also residents, Community Organization for Disaster Risk Management and private company.

B. Explanation by Posters and Brochure

Disaster prevention will be promoted for residents through audiovisual materials such as posters, brochures, stickers, public papers, video, films and slides.

C. Explanation by Organizing Meetings

After disaster prevention drill or disaster management lecture, discussions will take place among the related people or organizations of disaster management. These discussions are also effective in developing their awareness about disaster.

CHAPTER 6 SAFETY CONTROL/ RESCUE MEASURES

6.1 Safety Control and Rescue Preparedness Measures by Police

<i>Responsible Agency:</i>	<i>POLRES</i>
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1) Improvement of Equipments

Required equipment will be improved or upgraded for emergency responses by police such as rescue, evacuation induction, forecasting and warning notice, damage information gathering, and safety control of damaged area. In particular, radio transmission and related equipment are well maintained.

Police should also prepare supplies for themselves including drinking water, foods, fuels and batteries. Therefore a procurement procedure should be established in Police.

2) Participation in Drills

For strengthening among related agencies of disaster management, police will participate in all drills organized by Kabupaten Jember.

3) Preparedness to Receive External Aid

Under emergency situation, police will take an appropriate formation for acceptance of external supporting staff and agents in order to accelerate emergency response and rescue activities.

6.2 Safety Control and Rescue Preparedness Measures in Sea

Responsible Agency:	KAMLA
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1) Improvement of Equipments

Required equipment will be improved or upgraded for emergency responses by sea such as marine salvage, and transportation of relief supply and manpower. In particular, radio transmission, lifeboat, life jackets and related equipment will be well maintained.

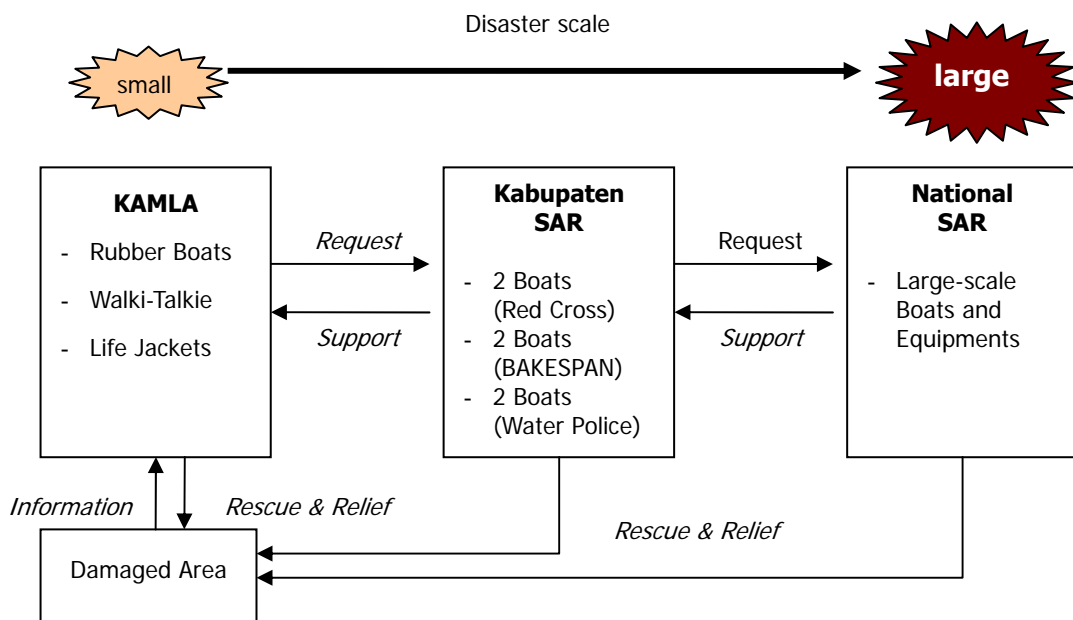
KAMLA will request boats and any other necessary equipment to Kabupaten SAR and National SAR depends on the scale of disaster.

2) Participation in Drills

For strengthening among related agencies of disaster management, KAMLA will participate in drills organized by Kabupaten Jember.

3) Information Gathering

KAMLA will collect weather information, metrological data and damage condition at the time of disaster, and convey to Kabupaten SAR. SAR will coordinate related organization and take appropriate action such as emergency responses, rescue and relief.



Source: JICA Study Team

Figure 6.2.1 Framework of Rescue Measures by Sea

CHAPTER 7 DEVELOPMENT OF EMERGENCY TRANSPORTATION FACILITIES

7.1 Development of Emergency Transportation Facilities

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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In the time of natural disaster, comprehensive transport network is necessary to smooth evacuation, rescue, and transportation of materials and supplies. Kabupaten Jember is completely relies on land transportation mode, that is, roads and railways. For more efficient transportation at the time of disaster, roads and railways should always be maintained to anticipate emergency situation.

1) Designation of Emergency Transportation Route

Emergency transportation network mainly consists of primary and secondary emergency transportation routes. Primary emergency transportation route will be designated by Kabupaten Jember with the purpose of transferring the injured and conveying materials and supplies from/ to outside Jember. Meanwhile secondary emergency transportation routes will be designated by Kecamatan of Jember with the aims of transferring inside Jember.

(1) Primary Emergency Transportation Route

Primary emergency transportation routes should link between important facilities, that is routes connect with RUPUSDALOPS-PBP and materials transportation bases such as airport and seaports. Figure 7.1.1 shows idea of two primary emergency transportation routes of Surabaya and Banyuwangi. Surabaya might be the most important city for Kabupaten Jember in terms of the gateway from/to East Jawa. There are not only physical facilities such as seaport and airport but also major emergency organization such as SATKORLAK and SAR National. Meanwhile Banyuwangi that is close to Kabupaten Jember, has another seaport as a aid gateway from eastern regions.

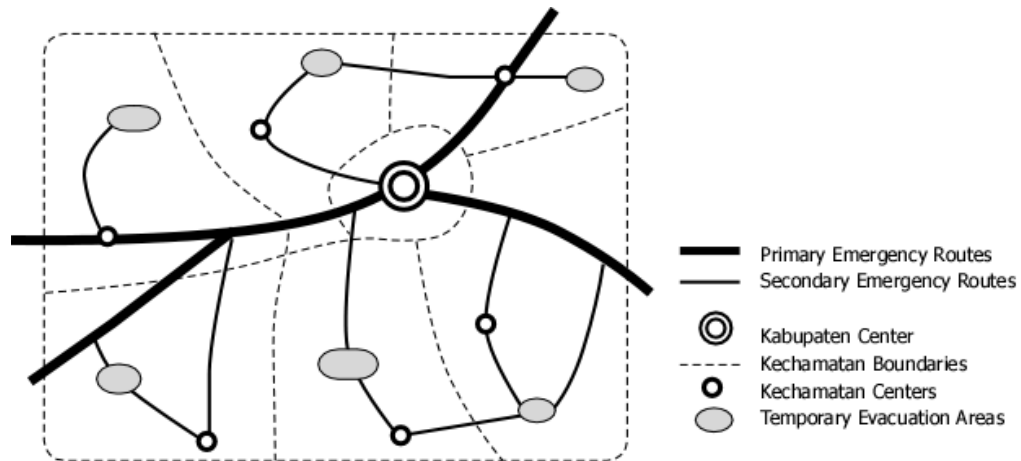


Source: JICA Study Team

Figure 7.1.1 Idea of Primary Emergency Transportation Routes

(2) Secondary Emergency Transportation Routes

Secondary emergency transportation routes play a role as feeder routes. These routes hence shall branch off from primary routes and stretch out to Kecamatan centers and temporary evacuation areas. The route plan will be decided by each Kecamatan by considering smooth transferring of the injured and emergency supplies from/ to their centers and evacuation places. The general idea is illustrated in Figure 7.1.2



Source: JICA Study Team

Figure 7.1.2 Schematic Image of Emergency Transportation Route Network

2) Maintenance of Emergency Transportation Routes

(1) Maintenance of Emergency Transportation Routes in Kabupaten Jember

Roads designated as primary and secondary emergency transportation routes should be well maintained for preparation of emergency. These roads need to be kept at good condition by repaving and widening for evacuation, transportation and conveying at the time of disaster. Particularly for primary emergency transportation routes should be always clear and forbidden for street parking.

On the other hand, Kabupaten Jember has number of rivers and irrigation channel due to geographical condition and agricultural industries. Emergency transportation routes therefore require bridges to those rivers. Therefore, strengthening of those bridges is requires in order to enable it to be use in emergency situation.

(2) Maintenance of Arterial Roads outside Jember

Kabupaten Jember relies upon land transportation due to absence of any airports and seaports inside the Kabupaten. Hence arterial roads which connect between Jember and Surabaya, and Jember and Banjuwangi are vital accesses at occurrence of disaster. These roads must be well maintained, especially the bridges. SATKORLAK will be requested maintenance for these road facilities.

(3) Maintenance of Railways

Existing railway links between Surabaya and Banjuwangi through Jember. When disaster occurs, after checking the safety, railway can play a role of transportation. For this, maintenance of railway facility is required.

3) Emergency Air Transportation

Due to lack of airport in Kabupaten Jember, helicopter is the only way to transfer by air. In the case that road network is cut off because of disaster, helicopter will play an important role in transportation. Therefore tentative heliports should be prepared at each Kecamatan for emergency response. The following facilities might be appropriate places as tentative heliports.

- City Town Square or *Aloon-aloon*
- Sport Fields
- Military Court
- Agricultural land (excluding paddy fields)

On one hand, Kabupaten Jember is developing an airport at Kecamatan Ajung at this moment. This project will be enhanced not only for strengthen disaster management but also trigger to stimulation of local economy.

CHAPTER 8 *EVACUATION AND PREPAREDNESS OF TEMPORARY HOUSING*

8.1 Temporary Evacuation Area

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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1) Role of Temporary Evacuation Area

When disaster such as heavy rain, storm and erosion occurs, temporary evacuation area will be established for citizens protection from disaster suffering. Evacuation area also functioned as accommodation for refugees after disaster. For two major roles, temporary evacuation areas should already be decided in each Kecamatan.

2) Criteria of Temporary Evacuation Area

Selection of temporary evacuation area should consider following criteria.

- Safety places according to hazard map
- Well accessibility area
- In form of wide plain area
- No hazardous facilities in the neighborhood (e.g. chemical factories)

3) Selection of Temporary Evacuation Area

(1) Selection of Temporary Evacuation Area

Temporary evacuation areas are selected in each Kecamatan. These evacuation areas will be reviewed periodically in line with dynamics of population and building areas.

(2) Establishment of Signboard

Establishment of signboard for temporary evacuation areas will be conducted in order to lead the citizen to suitable area. Signboard is also efficient to develop the citizen's awareness for disaster management.

8.2 Evacuation Facilities

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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1) Selection of Evacuation Facilities

Appropriate evacuation facilities are needed for accommodate the people who lose their house because of storm or erosion. Evacuation facilities are basically selected from existing buildings in each Kecamatan. These buildings selected as evacuation facilities should have enough room to accommodate certain number of residents. Structure of the building should be strong enough against disaster and located in safety area according to hazard map.

(1) Evacuation Facilities

Some facilities such as schools and mosques are selected as evacuation facilities in advance by each Kecamatan. Required number and space of evacuation facilities are depended upon the population. At least, a certain number of the injured, children and elderly need to stay in evacuation facilities. These selected facilities will be maintained and reinforced for the disaster.

(2) Establishment of Signboard

Establishment of signboard for evacuation facilities should be conducted in order to lead the citizen to right facilities without any confuse. The signboard is also efficient to develop the citizen awareness for disaster management.

2) Equipments of Evacuation Facilities

(1) Required Equipments for Communication and Supply

After disaster occurred, required equipments are different between initial period (within 72 hours) and restoration period (after 72 hours). Equipment needed for both periods are as follows.

A. Initial Period: within 72 hours after disaster occurred

- Radio transmission
- Mobile phone
- Radio
- Billboard
- Electric generator and battery
- Motorcycle and bike

B. Restoration Period: 72 hours after disaster occurred

- Radio transmission

- Mobile phone

(2) Provision regarding Drinking Water and Foods

Commodities, drinking water and foods are essential to life in evacuation facilities. Supply will be prepared in order to have sufficient amount of commodities, drinking water and food to be provided to refugees.

A. Water Supply

To guarantee enough water supply after disaster occurred, the following facilities should be inspected and maintained in advance.

- Water supply in schools and mosques
- Wells
- Plastic canteens or containers
- Rear cars

B. Foods

Following cooking equipments for foods supply should be prepared.

- Cooking stove
- Large sized pan
- Propane gas
- Plates and utensils

3) Establishment of Working Committee for Evacuation Facilities

Working committee for each evacuation facility should be established with two purposes. One,, the committee will maintain the facilities themselves. The other, the committee prepared the equipments so refugees are able to stay at evacuation facilities without any confusion.

(1) Organization of the Working Committee

Organization of working committee will be advised to include following member:

- Leader of Community Organization for Disaster Risk Management, or private company such as plantation companies
- Member of Kecamatan Office
- Owner or manager of the facilities
- Others (private company, volunteers, and so on)

(2) Role of Working Committee

The working committee will be expected to make the following preparation at each evacuation facility in order to smooth operation of the facility under emergency situation.

- Making a list of user of evacuation facilities

- Formulation of manual for operating evacuation facility including rescue measures for the elderly, weak and handicaps
- Training for implementation of the manual
- Disseminate method of disaster management and increase awareness
- Discussion disaster prevention measures with citizens
- Conducting disaster prevention drill with citizens and private company
- Prior discussion on how to close evacuation facility when refugees already occupy their houses or temporary housing

8.3 Formation of Evacuation Plan

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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1) Community based Evacuation Plan

Community based evacuation plan will be promoted to formulate by each Community Organization for Disaster Risk Management. Formulation of an evacuation plan could encourage the residents to understand the location of evacuation area and facilities.

Evacuation route, which links between residence area and evacuation area/ facilities, will be designated in the evacuation plan. In case that the route includes slopes or/ and bridges, maintenance plan of these facilities should be included in the plan.

2) Manual for Evacuation Instruction

Evacuation instruction shall be carried out with appropriate timing otherwise the damage would relatively increase to the delay of announcement. Manual for evacuation instruction which demonstrates the way of decision and instruction will be formulated in accordance with the disaster characteristics by each Kecamatan.

8.4 Preparedness of Temporary Housing

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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Temporary housing will be provided to people whose houses became uninhabitable because of disaster. The following preparation will be considered to carry out in advance.

Construction materials and enough space for temporary housing will be confirmed in coordination with Kabupaten Jember and private company. Particularly available land for temporary housing will be decided and these data will be update periodically. Number of temporary housing that can be calculated based on the land space, will also be confirmed.

Temporary housing manual including criteria of tenant and operation methods will be established in order to prevent any confusion when transfer.

CHAPTER 9 DEVELOPMENT OF DISASTER MANAGEMENT FACILITIES

Supplies are vital for disaster preparedness such as materials and equipments for damage prevention, rescue activities and restoration, foods and drinking water.

9.1 Supply of Disaster Management Equipments and Goods

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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In order to rescue activities and relief after the awake of disaster quickly, necessary materials will be stored as supply. For taking account of unavailability of resources and shut off the transportation in the aftermath of disaster, the materials shall be dispersed appropriately.

1) Supply of Equipments and Goods

The following equipments are quite useful for emergency response, rescue and restoration. These goods will be kept as supply.

- Electric generator
- Alley light
- Shovel
- Saw
- Rope

2) Supply Location

The above supplies should be store at appropriate evacuation centers such as evacuation facilities and evacuation area. The list of location will be prepared.

9.2 Supply of Emergency Foods and Commodities

<i>Responsible Agency:</i>	<i>Social Agency</i>
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Distribution of food and supply should be conducted if large scale disaster occurs and resulted in refugee losing their houses. Therefore, certain amount of foods and commodities should be prepared by Social Agency.

1) Emergency Foods Supply

Rice and canned foods are appropriate for emergency foods. Powdered milk and general medicines will also be prepared for infants, sick people, and elderly. When necessary, Social Agency will cooperate and ask for aid from private company and other relevant companies to provide food.

2) Commodity Supply

As emergency commodities, blankets, disposable diaper and sanitary goods are appropriate for supply. When necessary, Social Agency will cooperate and ask for aid from private company and other relevant companies to provide those commodities.

3) Supply Location

Supplies of foods and commodities are planned to be stored in supply room at relevant agencies not only SATLAK but also Kecamatan offices, SAR, Red Cross, and other related offices. Emergency facilities such as schools and mosques could also be use as storage place. Location of supplies must be disseminated in order to keep on guard in case transportation route get disconnect when emergency situation occurs.

9.3 Supply of Drinking Water, and etc.

<i>Responsible Agency:</i>	<i>Region Drinking Water Company</i>
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Emergency response and relief activities assumed to start three days after disaster. If water is needed by one person around three liter per day, hence every person requires at least twelve liters of water to keep as supply to survive for four days without any aid.

1) Equipments Preparation for Emergency Water Supply

Kabupaten Jember has seven water tank trucks at this moment. These trucks will take an important role for water supply to damaged area. Thus, maintenance of these trucks will be conducted periodically for preparation. In the meantime, small plastic tanks or containers will be prepared for receiving water from the water tank trucks.

Emergency water storage tank will be established at evacuation area. Particularly the area which rely on water services or located far from water resources such as well and river are given priority to establish these equipments preparing for absence of water services due to disaster.

2) Confirmation of Water Resources

Instead of water services, wells and rivers become important water resources under the emergency situation. Location of these water resources are confirmed and listed in advance.

3) Water Supply for Household

Every household will be emphasized to keep certain amount of water in their house as supply for when disaster occurs.

CHAPTER 10 MEDICAL TREATMENT AID AND INFECTION DISEASE PREVENTION MEASURES

Supply of medical equipments and medicines will be prepared for medical treatment in time of disaster. Particularly immediate examination of corpse will prevent outbreak of infection disease.

10.1 Development of Activity Base of Medical Treatment

<i>Responsible Agency:</i>	<i>Health Agency</i>
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1) Secure Safety of Medical Facilities

As emergency aid station at time of disaster, clinics (PUSKESMAS) and disaster management center which are located in each Kecamatan will mainly accommodate heavy injured and pregnant people. Slightly injured will be accommodated in temporary facilities such as schools and mosques.

Disaster management center and clinics should secure the essential facilities such as electricity and communication tools including telephone and radio transmitter. In the meantime, certain amount of water is also needed for medical treatment. Therefore supply of water therefore is strongly encouraged for clinics and disaster management centers.

2) Coordination with Medical Professionals

In time of disaster medical professionals such as doctors and nurses must come to emergency aid station immediately. For dispatch of these medical professionals promptly, the sending system of medical manpower will be established in coordination with hospitals and Red Cross in advance.

10.2 Medicine Supply and Medical Equipments

<i>Responsible Agency:</i>	<i>Health Agency</i>
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Some medicines and medical equipments should be stored at clinics and disaster management centers as supply in case disaster occurs. To consider the possibility of disconnected transportation as result of disaster, certain amount of materials should be dispersed evenly not only at clinics and disaster management centers but also mosques and schools.

1) Supply of Medical Equipments

Medical equipments which are necessary for first aid and health care will also be stored as supply. For example, injection equipment and external medicines, disinfectant, and sanitary equipments will be stored.

2) Supply Location

- Clinics
- Disaster Management Centers
- Evacuation Facilities (schools, mosques and so on)

3) Procurement of Medicines and Medical Equipments

Apart from medicines supply and medical equipments, procurement method of extra medicines and medical equipments should be planned in coordination with Red Cross and SATKORLAC for preparation in case medicine shortage caused by large-scale disaster occurs.

10.3 Prevention of Infectious Disease

<i>Responsible Agency:</i>	<i>Health Agency</i>
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1) Infection Disease Prevention Activity

Rain and storm related disasters are likely to cause a variety of infection disease. In order to prevent such disease, citizen must the have right knowledge about infection disease. Hence, information about major infection disease, the sources of outbreak and prevention method will be distributed by brochure and website in advance. Besides, examination of drinking water and rat destruction should be conduct periodically in order to reduce the possibility of outbreak in time of disaster.

2) Supply of Materials for Infection Disease Prevention

Antiseptic and disinfectant will be kept as supply at each clinic and disaster prevention center in order to disinfect flooded houses and toilets also well after disaster occurred.

10.4 Preparedness Measures of Corpse

<i>Responsible Agency:</i>	<i>Health Agency & Indonesian Red Cross</i>
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1) Settlement of Mortuary

In case that disaster involves human lives, mortuary would be established in appropriate facilities. Enough room space for doctors to examine dead bodies is required. For avoiding any confusion under emergency situation, candidate facilities or buildings should be decided in each Kecamatan.

2) Establishment of Backup System

In case of large fatality caused by disaster, lack of the doctors who can examine dead bodies might occur. For such case, Health Agency and Indonesian Red Cross will request assistance from other agency, NGO and related private company. For this, the backup system in coordination with these organizations will be established for disaster preparation.

CHAPTER 11 DISASTER MANAGEMENT IN SCHOOL

11.1 Formulation of Evacuation Plan

<i>Responsible Agency:</i>	<i>Education Agency</i>
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For protection of children and students from disaster, the following measures should be conducted.

- Establishment of security system for students
- Formulation of safety programs at school including communication networks system
- Development of disaster management plan for school

In addition to the above measures, to strengthen people's awareness of disaster will be emphasized especially targeting with teachers, school staff and students' parents.

1) Formulation of Disaster Management Plan for School

Establishment of disaster management committee which consists of principal, vice principal, school manager and so on will be emphasized in order to formulate disaster management plan for school.

2) Contents of Disaster Management Plan for School

For appropriate management in the time of disaster, following activities will be conducted.

(1) Person in Charge of Emergency Response at School

Principals are advised to formulate the school emergency response headquarter and to define responsible role of teachers and school staff.

(2) Backup of Person in Charge for Emergency Response at School

By considering that disaster happens when principle is absence, a backup system should be established. For example, a vice principal or school manager could take over the leadership of emergency response headquarters instead of principal.

(3) Coordination between School Elements

Principal will be advised to develop a method of assemble teachers and school staff under the emergency situation. The system should involve a way of communication among the teachers and school staffs such as contact number list.

(4) Communication System

In time of disaster, schools will immediately contact students' parents, PTAs, disaster management center in Kecamatan, and clinic for exchanging information. Based on the garnered information, principals will instruct all of teachers and school staffs. In case that disaster occurs when students are in school, instructions of emergency response such as evacuation or waiting in school will be announced to all students over through loudspeaker or explanation from teachers in each class.

(5) Safety Confirmation for Routes to School

In the case that disaster happens in the time of school commuting, school routes safety should be confirmed in advance.

(6) Return Route from School

Return route from school for students in the time of disaster is planned beforehand. Accordingly, communication procedure between school and parents should be formulated.

(7) Protection System when Students Stranded in School

School should prepare accommodation when in time of disaster, the students are stranded at school and isolated. Therefore, school must prepare communication equipment to contact student's parents, and prepare supply of drinking water, food, medicine and blanket.

(8) Measures for Safety of School Building and its Facilities

School must have lists of buildings and facilities that exist and which will be use for occasional security inspection. Important places should have more detailed explanation, and emergency supplies such as supplies will be checked.

(9) Measures of Important Commodity and Dangerous Material

In the case that evacuation from school to other places must be conducted, important things such as documents and dangerous chemicals using for experiments has to be carried out from school. These things should be in the list for such circumstance.

(10) Sanitary Management

For appropriate sanitary management, principal will be encouraged to establish first aid group inside school. Besides supply of first aid equipments, medicine will be prepared and checked regularly.

(11) Psychic Stress on Students caused by Disaster

Disaster might cause not only physical damage but also psychic stress on children and students. In order to cope with the psychic trauma of students due to the disaster, principals will have discussion with school physicians and teachers beforehand.

11.2 Preparedness Measures of School Facilities for Emergency Situation

<i>Responsible Agency:</i>	<i>Education Agency</i>
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Due to that schools are likely to be used as evacuation places, schools are required to prepare the facilities and supplies for disaster prevention management. Schools have to secure the facilities, stationeries and teachers for reopening school as soon as possible after awake of the disaster.

1) Utilization of School Facilities for Disaster Prevention

(1) Evacuation Facilities

Schools can be used as evacuation facilities. This is because of existence of schools at every area along with its facilities.

(2) Improvement of School Facilities

To smooth school function as evacuation facilities, the following action will be taken.

- School buildings and facilities will be reinforced against disaster occurrence.
- Electric facilities, propane gas, and gas (benzene) will be kept as supply and be inspected periodically

(3) Enhancement of Capacity for Evacuation Places

Evacuation activity because of disaster will take several days. Therefore, school must conduct preparation in order to be able to handle those refugees. Several preparations must be conducted, especially providing foods and medicines as supplies.

(4) School Management as Evacuation Places

Principals are encouraged to develop the management manual of school as evacuation places beforehand, and also recommended to discuss the disaster prevention measures and control system with related organization such as disaster management center, Kecamatan office, clinic, community groups and PTA.

2) Improvement of School Facilities for Reopening after the Disaster

(1) Preparation of School Supplies

To reopen schools immediately after awake of a disaster, extra school supplies will intend to be kept in schools.

(2) Guarantee of Temporary Teacher

Disaster might make teachers unable to engage in education or to attend school due to suffering or disconnected of transportation. To anticipate it, principal should contact with temporary teachers or communicate with Educational Agency.

11.3 Disaster Management Education

<i>Responsible Agency:</i>	<i>Education Agency</i>
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Teachers and school staffs should received education regarding disaster management in order to be able to take appropriate action under emergency circumstance. This education could be conducted in form of seminar, workshop or lectures. Information of disaster prevention measures for school will be distributed through brochure or/ and website.

Meanwhile, students should also get disaster management education. Proper knowledge about flood and erosion, becomes basic idea for disaster prevention, and should be educated in school. Through this education, hopefully disaster management can be applied in school and household. Therefore, it is highly recommended that disaster management subject also included in student educational curriculum.

CHAPTER 12 PROMOTING PLAN FOR DEVELOPING DISASTER SAFE JEMBER

12.1 Promoting Disaster Safe Land Use Planning

<i>Responsible Agency:</i>	<i>Development Planning Board</i>
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Efficient land use could contribute to strengthen the city against natural disasters such as flood and erosion. Land use plan is necessary to take account of evacuation routes and evacuation spaces for disaster mitigation.

1) Improvement and Multiplexing of Evacuation Routes

When disaster occurs, secured evacuation and transportation routes are needed for smooth evacuation and emergency activities. Main roads such as state roads and provincial roads designated as evacuation and emergency routes will be included in the land use plan. These roads should link among evacuation places and emergency facilities. Additionally, based on the multiplexing evacuation route system, alternative roads should be selected as evacuation route and will be shown in the land use plan.

The following actions for implementation of evacuation routes are improved;

- To select evacuation routes and alternative routes in the land use plan
- To assign high priority to improve these roads such as road widening and repaving

2) To Secure Open Spaces for Promoting Disaster Measures

In build-up area and residential area, open spaces such as parking spaces and green spaces play an important role as evacuation places when natural disaster occurred. Therefore existing open spaces outside hazardous zone selected by hazard analyses should be improved and maintained for the purpose of developing appropriate evacuation area. The current vacant lands and public spaces also could utilize as open space.

Each Kecamatan will select their open space as evacuation places based on the population and density. These evacuation places are reflected in the land use plan in Kabupaten Jember.

3) To Mitigate Buildings in Vulnerable Zone

Based on hazard map, vulnerable areas are clearly designated, and some residences and buildings are recognized as hazardous. In order to mitigate such vulnerabilities, priority of development and redevelopment is given to these vulnerable areas in land use plan. The following measures are considered to carry out.

- To strengthen existing buildings in vulnerable area against natural disasters
- To distribute open spaces appropriately in high dense area

On the other hand, the land use plan shows constraints in these vulnerable areas.

- To avoid construction of new buildings in vulnerable area
- To postpone development of vacant land in high dense area

Area development and redevelopment in vulnerable area are also concerned.

12.2 Development of Disaster Mitigation Facilities

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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Development of disaster mitigation facilities including basic infrastructure, parking space, roads, railways, and bridges is vital process in order to strengthen city against natural disasters.

1) Improvement at Evacuation Routes

For smooth and safe evacuation and emergency responses when disaster occurred, facilities at evacuation routes are necessary to be improved and well maintained. In Kabupaten Jember, bridges on roads and tunnels on the railway to/from Surabaya are important transportation facilities. In case these facilities are recognized as hazardous, upgrading and maintenance would be delivered by concerned agencies.

In addition, alternative transportation is necessary to consider in case of large-scale disaster. Kabupaten Jember might be isolate when large-scale flood and erosion happen due to complete reliance on the land transportation inside and outside the Kabupaten, if lifeline belongs to only road and rail transportation. For this, it will be necessary to consider air and sea transportations as alternative ways. Facilities improvement, for this alternative ways such as airport, heliport and seaport will be considered. Especially the development of new airport which is been built at the moment must be finished as soon as possible.

2) Improvement of the Slope Area

Kabupaten Jember has many slope areas due to the geographic characteristics. There are Argopuro Mountain in the north, Raung Mountain in the northeast, and South-Eastern Hills and Mountains in Southeast. For taking advantage of such landform, many farm villages are existed in slope area for agriculture, agro-forest industries, and limestone excavation. In terms of disaster prevention management, many people can be said to live in the vulnerable area. Therefore these areas need disaster management measures against natural disaster in particular erosion and land slide. Two measures could contribute to mitigate damage from disasters.

First, to secure roads is the most important measures for people who live in the slope area for evacuation and relief activities. Not only major roads such as state roads and provincial roads but also community roads are emphasized to be improved and maintain. To formulate road networks based on community roads is also promoted.

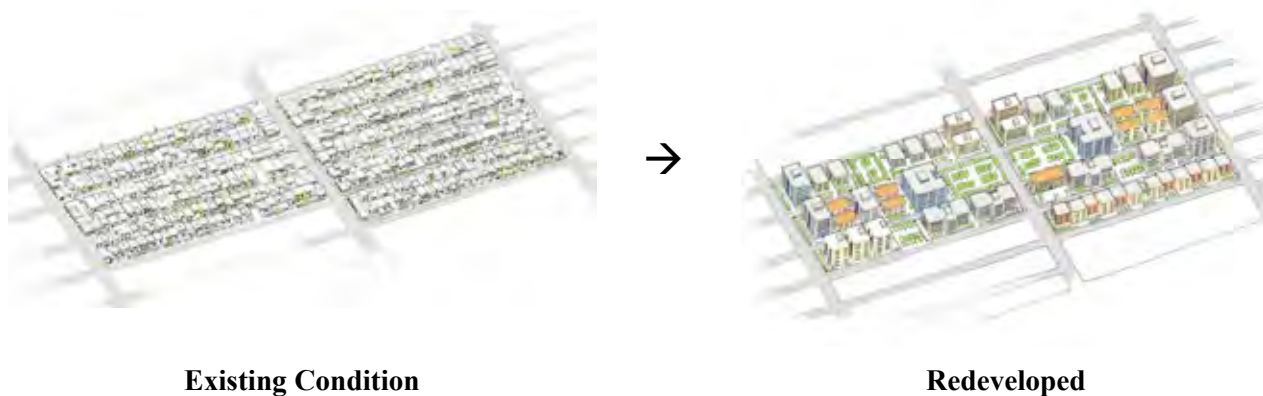
Second, to encourage awareness of people who live in the slope areas about disaster management and basic knowledge of natural disaster should be carried out through conducting drills and distribution of brochure and posters.

3) Improvement of Build-Up Area

In order to avoid large-scale suffering from disasters, the city should have strong structure against natural disasters. In particular, build-up area is likely to be difficult for evacuation and smooth relief activities due to high-dense buildings and lack of evacuation places. Hazardous build up area will be clearly determined by using the hazard map. In such area, appropriate size and number of open space and evacuation roads will be planned.

Area Development and Redevelopment

Area development and redevelopment is one of drastic measures for strengthening the city against natural disasters. This measure is efficient for vulnerable area with high-dense buildings or residences. By means of area development and redevelopment, it could allow to maximum utilization of land use, notably, expanding open space for evacuation and emergency responses and widening evacuation roads. Additionally buildings and residences in hazardous area are promoted to remove into safe places. However this solution needs not only time and costs in order to obtain consensus from the residence but also social impact. Hence, implementation of this measure intends to be examined carefully.



Source: JICA Study Team

Figure 12.2.1 Image of Area Redevelopment

CHAPTER 13 EROSION CONTROL AND SABO MEASURES

13.1 Erosion Control Measures

<i>Responsible Agency:</i>	<i>Company of Forestry & Agency of Forestry and Plantation</i>
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In Kabupaten Jember, the south part of Gunung Argopuro and the west part of Gunung Raung, and also the mountainous southeastern area under which lies a Tertiary layer present a high risk for sediment disaster and a risk of slope collapse when heavy rain occurs. Therefore, if a landslide occurs from this mountainous area to a section of flat-ground at the time of a heavy rain, the river current will serve as a terrible mudflow that will directly hit residences. Moreover, there is constant apprehension that an earth-and-sand disaster could occur at the residential site along the river and such, including the plantation currently developed on the slope of the mountain, so that erosion control measures are an urgent issue.

1) Afforestation plan

In Kabupaten Jember, uncontrolled logging progressed has given way to the development of gully erosion. Such logging practices have caused the current situation where sediment disaster may easily occur. These areas are undergoing proactive afforestation, carried out in such a way as to fortify the forests against disaster.

2) Prevention of collapse and sediment outflow

A naked mountain face is extremely vulnerable to heavy or long rains, etc. which could cause collapse and outflow, or a mudflow of earth and sand. The mountainous area of this city in particular is dotted with many places at risk to collapses, as well as the indication of areas in danger of mudflow occurrences. Therefore, the maintenance and enhancement of the water retention capability of forests are also critical matters to disaster prevention. Moreover, in aiming to maintain the forest, endeavors will also be made to perform forest conservation works that will prevent earth and sand collapse, sediment outflow, as well as the movement of riverbed sediment and riverside erosion.

13.2 Sabo Measures

<i>Responsible Agency:</i>	<i>Irrigation Agency</i>
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In Jember there is a lot of area that vulnerable to sediment disaster, dotted along the river by the riverside.

CHAPTER 14 FLOOD MITIGATION PLAN

14.1 Measures for Rivers

Responsible Agency:	Irrigation Agency
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1) Major Rivers in Kabupaten Jember

There are four main rivers in Kabupaten Jember which are Tanggul river, Besini river, Bedadung river and Mayang river. Along the border between Kabupaten Jember and Lumajang, there flows Bondoyudo river. The profiles of the rivers are shown in Table 14.1.1.

Table 14.1.1 Main Rivers in Kabupaten Jember

River	Catchments Area	Length
Tanggul River	212.77 Km ²	45 Km
Besini River	19.30 Km ²	40 Km
Bedadung River	149.22 Km ²	88 Km
Mayang River	649 Km ²	120 Km
Bondoyudo River (in Kabupaten Lumajang)	1,196 Km ²	110 Km

Source: Irrigation Agency of Jawa Timur Province (DPU Pengairan Propinsi Jawa Timur) (2004)

2) Countermeasure in Flood Area

In the beginning of January 2006, Kecamatan Panti and Kecamatan Rambipuji were especially suffered from the serious flood and sediment disaster. Moreover, a number of flood and sediment disasters had struck Kabupaten Jember frequently.

It can be pointed out that the insufficient preparedness for evacuation is one of the main problems during flood events. Therefore, it is necessary to make appropriate actions for prompt and smooth evacuation before flood event. In order to solve the problem, it is necessary to clarify/draw flood susceptible area first of all. Subsequently, the countermeasure plan in flood susceptible area can be formulated such as procedure for flood warning, locations of evacuation shelters, preparedness action for prompt and smooth evacuation, etc.

(1) Creation of Flood Susceptible Area Map

Probable flood map or flood susceptible map is indispensable for planning appropriate countermeasures against flood disaster. There are two main types of methodology for creation of flood map: 1) Creation of flood map based on the past flood disaster areas, 2) Creation of

probable flood map based on the hydro-dynamic simulation model. The methodology for creation of flood map should be decided based on personnel, budget, available technological level, etc.

(2) Development and Improvement of System for Early Warning and Evacuation

A concrete methodology should be formulated for development and improvement of system for early warning and evacuation. It is also indispensable to raise public awareness. In order to develop the awareness and behavior in the time of natural disaster, participation in disaster prevention drills regularly is highly promoted.

Not only non-structural countermeasure mentioned above but also structural countermeasure (e.g. river improvement works, construction of dike, etc.) will be implemented appropriately in terms of integrated flood management.

14.2 Drainage Measures

<i>Responsible Agency:</i>	<i>Irrigation Agency</i>
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Drainage channel shall be planned to allow the safe passage of rainwater in order to minimize flood damage as well as improvement of life environment and conservation of water quality in Kabupaten Jember. The effort should be made for strengthening main drainage network and facilities to minimize flood damage. The specific measures are shown below.

(1) Prevention of Inundation

The storm-water drainage facilities shall be developed in a planned and consistent way for prevention of inundation during heavy rainfall.

(2) Maintenance of Existing Facilities

The maintenance of existing facilities (e.g. Reparation, Dredging, Cleaning, etc.) should be performed sufficiently at regular intervals for maximization of the capacity in case of flood event.

(3) Development of Drainage Facilities

The development of drainage facilities will be performed especially for the expected flood area to minimize damage from flood disaster.

(4) Inspection of Facilities for Necessary Protection

In case of flood disaster expected, inspection for the important facilities should be performed and the appropriate protection works before flood event shall be done if necessary.

(5) Store of Equipment and Materials

The necessary equipment and materials should be stored at facilities in order to perform emergency rehabilitation in case of flood disaster. Further, the equipment and materials should be inspected at regular intervals so that one can confirm whether they functions sufficiently or not.

14.3 Maintenance and Repair of Flood Disaster Mitigation Facilities

<i>Responsible Agency:</i>	<i>Irrigation Agency</i>
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There are a number of facilities which can be utilized for minimizing flood disaster (e.g. Dike, Water-gate, Revetment Works, etc.) in Kabupaten Jember. It is indispensable to grasp the conditions of obsolescence and breakage of the facilities at regular intervals in order to perform appropriate maintenance and reparation of the facilities. The followings are the specific items for the proper maintenance and reparation.

(1) Inspection of Facilities

The inspection for the existing facilities should be performed at regular intervals so that the security and reliability against flood disaster will be assured. Further, in case of inappropriate occupational structure in river zone, the owner of the structure shall be warned for implementation of necessary measures.

(2) Rehabilitation and reinforcement of dike structure

Rehabilitation reinforcement of dike structure should be performed such as 1) Raising the height of dike, 2) Qualitative improvement of dike structure, 3) Rehabilitation & reinforcement of Sluiceway structure, etc.

(3) Rehabilitation and reinforcement of agricultural facilities

- Rehabilitation and reinforcement of agricultural facilities shall be performed in organized manner such as rehabilitation works for deteriorated channel, revetment, etc.
- Agricultural drainage channel facilities should be strengthened in organized manner especially for the area where inundation or flood is expected in case of excessive discharge along the channel.
- Vulnerable structure in riverine agricultural zone should be reinforced in organized manner.

CHAPTER 15 *SEDIMENT DISASTER MITIGATION MEASURES*

15.1 Disaster Mitigation Measures for Failure of Steep Slope

<i>Responsible Agency:</i>	<i>Company of Forestry</i>
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There are a number of deep dissected valleys in the southern part of Argopuro Mountain located to the north of the city. The upper and middle sections of these valleys are steep inclines, created by prior collapses. In particular, Kali Klatakan and Kali Putih are steep slopes made up of volcanic product that geologically could easily collapse, and their high altitude and amount of rainfall are such that the valleys are very unstable. For this reason, the following preventive measures are performed in order to minimize the risk of disaster from landslide and so forth.

1) The survey of areas at-risk for sediment collapse

At-risk areas are investigated in advance in order to prevent disaster before it happens and keep damage to a minimum when disasters occur. Moreover, the actual condition and use of at-risk areas, homes and roads that could be affected, and so forth are taken into consideration as the underlying data to create an evacuation advisory.

2) Disaster prevention activities

The following matters are carried out for the purpose of sediment disaster prevention.

(1) Issue warnings for at-risk areas

A warning is issued to alert the concerned residents to any specific area known to present a danger. Moreover, while forbidding any dangerous conduct that could induce sediment collapse, concerned residents are encouraged to observe the dangerous area themselves and grasp an understanding of the present condition.

(2) Comprehension of actual condition of at-risk areas

A close watch is kept over the areas deemed to be at-risk, and strive to comprehend the actual conditions over a larger area or new at-risk areas in addition to this.

(3) Advocate residents to check at-risk areas

Efforts are made to urge residents to check the location of areas at-risk for sediment disaster, along with evacuation areas, and evacuation routes.

(4) Measures in established residential areas

Support the construction of disaster prevention for the purpose of preventing established residential areas from suffering sediment disasters. Moreover, safety patrols are performed with citizens, particularly during seasons with much rain.

3) Regulate construction in sediment disaster areas

When new construction is expected within range of a sediment disaster area, it is desirable to select location which avoids the danger of sediment disaster. When unavoidable, it is advisable to construct the appropriate preventive structures, such as retaining walls, according to the soil properties or scale of the structure.

15.2 Disaster Mitigation Measures for Reclaimed Land

<i>Responsible Agency:</i>	<i>Irrigation Agency</i>
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When development projects take place in an area where there is a danger of sediment disaster present, the related city office is consulted as matters proceed. If sediment disaster prevention is deemed necessary, recommendations and improvements are given concerning the suspension of construction in order to prevent disaster that would accompany construction.

15.3 Comprehend location of High Risk Area of Sediment Disaster

<i>Responsible Agency:</i>	<i>Agency of Forestry and Plantation</i>
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Investigations are carried out based on past disaster history etc. of the places where earth-and-sand disaster tends to occur, and the places where new sediment disasters are expected to occur, and a ledger of those at-risk places is created.

CHAPTER 16 SECURE SAFETY OF BUILDINGS

16.1 Secure Safety of Private Buildings

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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To prevent accidents caused by collapse of building and falling objects from rain and storm related disasters, implementation of preventive measures are necessary by maintaining building safety to minimize damages. Following measures are effective;

1) Dissemination of Disaster Management Knowledge

- Most general dwelling houses in Kabupaten Jember are constructed by amateur builder who do not experience a special education of structure engineering. When thinking about this respect the citizens themselves should have practical knowledge, and the skill for construction, in order to make these dwelling buildings strong against disasters. For this purpose responsible Agencies in PEMKAB will disseminate the disaster management knowledge to citizens.

2) Inspection Diagnosis on Existing Dwelling Buildings

- Responsible Agency in Kabupaten Jember will draw up an implementation outline for building diagnosis for existing dwelling buildings in Kabupaten Jember.
- Responsible Agency in Kabupaten Jember will carry out the building census investigation in order to have basic knowledge about the distribution of building structure type and building material type of all dwelling buildings in Kabupaten Jember. Responsible Agency in Kabupaten Jember will promotes the implementation of building diagnosis on every dwelling building by the order of priority according to level of danger which becomes clear by the result of the building census and the hazard map.

3) Reinforcement of Building Structure Confirmation and Permission System

- Responsible Agency in Kabupaten Jember will establish the building structure confirmation and permission system. Therefore only the buildings which have efficient strength may be given construction permission. Related agencies will check the building condition at necessary timing and give effective guidance to builder when the improper construction is found.

- Responsible Agency in Kabupaten Jember will cancel the building permission if the builder does not make improvement. Legal compulsion should be applied when building constructor does not acknowledge the guidance and caused remarkable danger for the surrounding area.

4) Retrofitting and Strengthening in Existing Building

- Responsible Agency in Kabupaten Jember will promotes activity for retrofitting and strengthening in existing building when problem against disaster is found by building diagnosis.

5) Financial Support for Strengthening of Existing Buildings

- Responsible Agency in Kabupaten Jember will make the support plan for retrofitting and strengthening existing building. Responsible Agency in Kabupaten Jember will inform this support system widely in order to encourage self-motivation on strengthening of existing buildings.
- Responsible Agency in Kabupaten Jember will make best effort to achieve financing system of strengthening construction for individual who has a concrete plan of strengthening construction.

16.2 Secure Safety of Public Buildings

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Medical facilities and school buildings should be completely protected because those facilities play an important role when a large disaster occurs (i.e. emergency place, relief, and shelter place). Therefore the Responsible Agency in Kabupaten Jember should take the following measures in order to prepare a strong institutional-building at the time of disaster.

1) Investigation on Existing Public Buildings

- Responsible Agency in Kabupaten Jember will promote establishing an earthquake-disaster mitigation plan for the facilities, which have an important role for medical purpose and shelter base, and inspect them. If an unqualified building is found, order and guidance to implement improvement will be taken.

2) Earthquake retrofitting and earthquake strengthening in existing institutional-building

- Responsible Agency in Kabupaten Jember will draw up an implementation outline for building inspection on existing institutional-buildings in Kabupaten Jember.
- Manager in each institutional-building will investigate the disaster mitigation capacity of their building utilizing a method that is stipulated in the implementation outline.
- Responsible Agency in Kabupaten Jember should completely guide the manager in each institutional-building to install important facilities (i.e. Fire protection system on disaster prevention, alarm equipment, refuge accommodation etc). A management system that enables mutual cooperation between each different management authority will be established if some usages are set for single facility and management authority has divided.
- Responsible Agency in Kabupaten Jember should organize an activity plan of emergency aid monitoring and guide refugees who take shelter after disaster occurred.

3) Function Reinforcement of Institutional Utility

- Reaction ability towards a large disaster depends on whether the emergency response activity is promptly implemented or not. Responsible Agency in Kabupaten Jember should check the required equipment and existing capacity of each institutional-utility which will become bases of emergency activities of medical treatment relief and shelter accommodation. If those utilities are insufficient, hence a plan to reinforce the function will be established.

CHAPTER 17 SECURE SAFETY OF LIFELINE

Utilities referred as “Lifeline” such as Water, Electricity, Telecommunication, and etc. are critical system of our life. Therefore, if these utilities are damaged because of flood and sediment disasters, urban malfunction will occur, and the effect is considered to be extremely large.

Consequently, to minimize damages to these utilities, following measures will be implemented.

17.1 Coordination Enhancement among Lifeline Provider Companies and PEMKAB

<i>Responsible Agency:</i>	<i>Social Agency, Regional Drinking Water Company, National Electricity Company, TELKOM</i>
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Lifeline provider companies and PEMKAB should conduct good coordination to perform facility recovery with high priority such as medical, social welfare facilities, and evacuation facilities, etc. To improve coordination method, PEMKAB and these companies should formulate a better method.

17.2 Water Supply Facility

Responsible Agency:	Public Works Agency, Regional Drinking Water Company
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Water is something indispensable for daily life of residents. Therefore, water supply facilities must take measures to avoid damages from rain and storm related disasters. To build disaster resistance water facilities, continuous efforts must be taken in the future.

For water supply, if electric supply stopped for long period of time, hence water supply should be conducted by using back-up generator to pump the water. Therefore, increase of water stock in each water reservoirs is necessary. Moreover, even though parts of distribution pipes are damaged by disaster, to supply water smoothly, multiplex routes are promoted to be developed.

Furthermore, depends on weather condition, designated risk points (Information from Hazard Maps) requires patrol for inspection during bad weather. This inspection is useful to inspect whether dangerous situation occurs or not. In case of dangerous situation, hence surrounding residents should be informed so no one will enter the dangerous area. Besides, this inspection is also useful to decide the needs of evacuation for surrounding residents.

1) Existing Condition

(1) Purification Plant

Source of water such as river is purified in purification plant to be usable for daily life, however mostly water is unsafe for drinking purpose in Kabupaten Jember. There are 2 purification plants in Kabupaten Jember and total purification capacity reaches 5,616 m³ per day.

(2) Water Reservoir

Water Reservoirs are constructed for controlling volume of water supply by time, and also to secure water volume and pressure. There are 4 water reservoirs in Kabupaten Jember and total capacity is 4,100 m³. (Semeru 250m³, Darungan 1,600m³, Slawu 750m³, Kaca Piring 1,500m³)

(3) Pumping Station

Pumping Station is constructed for distributing purified water at water reservoirs to higher locations. However, there is no pumping station in Kabupaten Jember.

(4) Water Pipe

Water Pipes are categorized as Raw Water Transmission Pipe (Water Resource to Purification Plant), Distribution Pipe (Purification Plant to Water Reservoirs), and Service Pipes (Water

Reservoirs to End User). Total length of water pipes in Kabupaten Jember is 590,574 m. In detail, length of transmission pipes, distribution pipes, and service pipes is 2,470 m, 129,655 m, 458,449 m respectively. Considering vulnerability of pipes, in the past disaster, it is proved that Asbestos pipes are vulnerable against disaster, and ratio of Asbestos pipes of transmission pipes, and distribution pipes reaches 67% and 28% respectively.

2) Mitigation Plan

In order to implement water supply smoothly in case of disaster occurs, continuous efforts for strengthening water facilities will be undertaken in the future at major facilities for water supply, by following measures.

(1) Disaster Safe Facility

For targeting disaster safe facility, replacement of old pipes especially for Asbestos pipes that have relatively high ratio in Kabupaten Jember, strengthening pipe joints and major facilities should be conducted. Moreover, on emergency situation, emergency water tank should also be installed. To supply water normally when disaster occurs, construction of disaster safe facility will be strived continuously.

(2) Installation of Backup Generators

Electric malfunction will cause stoppage of clean water supply, therefore, to secure continuous water supply, backup generators should be installed at major facilities. However after installation periodical maintenance and check up should be conducted to confirm the generators can still function well.

(3) Equipments Supply

In case of stoppage of water supply, to be able to supply residents, supply of portable water tanks is necessary, also, water tank engines must be maintained and checked periodically.

(4) Secure Emergency Water Resources

There are many wells in Kabupaten Jember, therefore, these facilities must be maintained well for use when disaster occurs.

(5) Preparation of Disaster Management Plan

Preparation of individual disaster management plan starting from pre-disaster, emergency response, and post disaster is strongly encouraged.

17.3 Electric Facility

<i>Responsible Agency:</i>	<i>National Electricity Company</i>
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To prevent the occurrence of secondary disaster during recovery process at electric network facilities, it is necessary to announce it to residents in disaster affected area who become subject to recovery impact also to confirm their safety from damaged electric network, also information sharing among related organizations and companies should be implemented.

Moreover, in order to prepare for actual damages due to disaster, it is necessary to attempt to secure resources and equipments so later it will be able to implement recovery works, periodical disaster management drills on recovery and communication should also be implemented.

1) Existing Condition

- There is no electric power plant in Kabupaten Jember (Nearest power plant is located at Kabupaten Probolinggo, Kecamatan Paiton located 65 km away from Kabupaten Jember). To distribute electricity, there are 2 transformer stations reduces 150kV to 20kV, and 1,341 transformer stations reduces 20kV to 220v and transmit to individual customers in Kabupaten Jember. Length of 150kV, 20KV, and 220v is 65km, 2,937km, and 3,040 km respectively.
- For Electric Facilities, each facility is inspected from regular time, and operation and maintenance of facilities are implemented.

2) Mitigation Plan

To mitigate damage to facilities and secure stable electric supply, following measures are promoted in the future.

(1) Electric Supply Facilities

Electric supply facilities are inspected periodically, and strive for their security. If level of transformer station can not be constructed higher than water stage, level of foundation should be increased. If there is risk of flooding, drainage facilities should be installed.

(2) Preparation of Disaster Management Plan

Preparation of individual disaster management plan including pre-disaster, emergency response, and post disaster is strongly promoted.

17.4 Telecommunications Facility

<i>Responsible Agency:</i>	<i>TELKOM</i>
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Disaster prevention measures should be conducted to guarantee disaster-secure telecommunication facility. Safety of organizations and companies that related with emergency response activity, evacuation place and facilities, also temporary telephone facilities for emergency necessity should be confirmed. In addition, staff mobilization for recovery work must also be conducted. To guarantee smoothness of the work, staff with required specification should be determined and their safety should be guaranteed. Necessary training and drills for these staffs must also be continuously implemented.

If large scale disaster occurs, telephone line will be congested, and it will be very difficult to connect the affected area. Therefore, necessary measures to connect important numbers in priority such as emergency response relevant organizations and companies are highly recommended.

1) Existing Condition

- In Kabupaten Jember, there are 2 landline telephone operators, those are Telkom Indonesia and Ceria. However, Telkom Indonesia has 99% share having approximately 50,000 subscribers in Kabupaten Jember.
- There are 13 exchange stations for landline telecommunications service and all of exchange stations equipped with batteries which can operate for 8 hours in average without supplying electricity, and for 2nd backup system, if electric supply is changed to battery operation and continues for more than 30 minutes, diesel generator (650kVA) will start automatically. There are stockpiles of fuel at each exchange stations, and its capacity is 5,000 liters, which can operate generators for 48 hours.
- In Kabupaten Jember, there are 5 mobile telephone operators and the largest operator is Telkomsel having approximately 100,000 subscribers with 41% of share in Kabupaten Jember.
- There are 15 exchange stations for mobile telecommunications service of Telkomsel, and they are mostly located at the same location of landline exchange stations. Therefore, backup system is shared with landline.
- For Telecommunication Facilities, each facility is inspected from normal time, and operation and maintenance of facilities are implemented.

2) Mitigation Plan

To mitigate damage to facilities and secure stable telecommunication, following measures are promoted in the future.

(1) Inundation Prevention Measure

For measures on flood, tsunami, inundation, and etc., by using watertight doors etc. prevent from inundation into building.

(2) Secure Communication Means when Disaster Occurs

To prevent form disconnection of telecommunication occurs, multiplex transmission route, should be promoted by coordinating other means such as mobile phones, satellite phones, walkie-talkies, etc, communication must be secured. Especially for emergency response organizations, special care should be taking into account.

(3) Preparation of Disaster Management Plan

Preparation of individual disaster management plan including pre-disaster, emergency response, and post disaster is strongly promoted.

Section 3:Emergency Response

(Disaster Emergency Response Plan)

Damages as well as responses to Rain and Storm related disaster could be in various ways. Rain could cause flood, flash flood, and landslide, while storm could cause fire and falling objects. To mitigate damage requires disaster preparedness plan, system and resources development, and emergency response measures. This Disaster Emergency Response Plan is emergency response measures which should be implemented promptly and efficiently by Kabupaten Jember Government and other disaster management related agencies in case of occurrence of a large variety of damages.

CHAPTER 1. EMERGENCY RESPONSE SYSTEM

In case of heavy rains occurs, Kabupaten Jember Government will establish response system by the following procedures in order to implement emergency response activities promptly and precisely to mitigate damages.

1.1 Initial Response System (IRS)

<i>Responsible Agency:</i>	<i>Bupati Office</i>
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In order to response disaster precisely, prompt response by Kabupaten Jember Government together with related organizations is important for next emergency response activities. Initial Response System is defined as response that carried out until Emergency Response Headquarter (Rupusdalops PB) is established. This Initial Response System should be ready for 24 hours to receive weather information from BMG.

Initial Response System is proposed based on criteria mentioned in 1.3 Rupusdalops PBP (Emergency Response Headquarters) and SATLAK PBP.

1) IRS during Working Hours

When continuous heavy rain occurs, if there is a risk of disaster occurrence, Bupati Office will coordinate with SATLAK PB to collect and analyze necessary information and share information with related agencies within PEMKAB, SATKORLAK PB, Police, and other organizations. The result will be reported to Bupati and ask for decision for on further response activities.

2) IRS during Night and Weekends

When there is a risk of disaster occurrence, Bupati Office will report to SATLAK PB representatives to gather in PEMKAB and collect and analyze necessary information and share information with related agencies within PEMKAB, SATKORLAK PB, Police, and other organizations. The result will be reported to Bupati and ask for decision on further response activities.

1.2 Warning Deployment System

Responsible Agency:	Bupati Office
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When warning level is not reached the criteria for establishing Rupusdalops PB, however, there is still a risk of occurrence of disasters due to heavy rain, Vice Bupati will discuss on deployment system, and if necessary, Bupati will order warning deployment.

1) Deployment Criteria

1. **Alert III** is announced, when forecasted that certain amount of rainfall will continue

2) Deployment of Staffs

Deployment Staffs for each agency are as follows;

Agency	Deployed Staffs
National Unity Agency	3
Social Agency	2
Social Welfare Agency	2
Health Agency	2
Public Works Agency	2

3) Implementation Order for Staff Mobilization

1. *When Warning Deployment System is decided, Bupati office will announce to SATLAK PB*
2. *Each head of agencies Warning Deployment System order to staffs designated in advance*

1.3 Rupusdalops PBP (Emergency Response Headquarters) and SATLAK PBP

Responsible Agency:	Bupati Office
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When disaster occurs or in high risk of occurrence, to implement disaster emergency response, Rupusdalops PBP will be established and SATLAK PB meeting will be hold.

1) Rupusdalops PBP

(1) Establishment of Rupusdalops PBP

A. Criteria for Establishment of Rupusdalops PBP

Criteria for establishment of Rupusdalops PBP
1. Heavy rain, flood, windstorm warning is announced in Kabupaten Jember Region and there is possibility of occurrence of large scale disaster
2. Large scale disaster occurs
3. When Bupati decided to do so

B. Substitution in case of Absence of Bupati

If Bupati is absent, the following are person will substitute the position of Bupati.

1. Vice Bupati
2. Economics and Development Assistant
3. Head of National Unity Agency

C. Announcement of Establishment of Rupusdalops PBP

Bupati or his substitution when Bupati is absent, will report promptly to head of SATKORLAK PB of East Jawa Province and related organizations regarding establishment of Rupusdalops PBP. Announcement of establishment of Rupusdalops PBP to community will be done through mass media and other means.

(2) Organization of Rupusdalops PBP

Organization of Rupusdalops PBP is composed of related agencies in PEMKAB based on duties described in “Disaster management and refugees handling established procedure (Protap PBP) of Kabupaten Jember”.

From time to time, type of emergency response will change, thus organization must be re-formulated in order to handle emergency response activities.

A. Organization and Role of Rupusdalops PBP

Organization and role of Rupusdalops PBP is based on Protap PBP.

B. Duties of Substitution of Head of Rupusdalops PBP

Head of Rupusdalops PB is Bupati, however, if Bupati is absent or cannot execute his duties, all Bupati's role will be substituted by the following person, respectively:

- | |
|--|
| <ol style="list-style-type: none">1. Vice Bupati2. Economics and Development Assistant3. Head of National Unity Agency |
|--|

C. Enhancement of Relationship with Related Organizations

Rupusdalops PBP has to share disaster information and implement emergency response promptly with well coordination and participation from military, police, Indonesian Red Cross, lifeline provides, etc.

D. Coordination with SATKORLAK PB of East Jawa Province

If the disaster level is low, it is not necessary to establish Rupusdalops PBP in Provincial level. However, if the disaster cannot be handled within Kabupaten level, Bupati should request for support.

In order to have efficient coordination with SATKORLAK PB, necessary information is transmitted to SATKORLAK PB.

2) SATLAK PB Meeting for Emergency Response

(1) Holding of SATLAK PB Meeting for Emergency Response

When Rupusdakop PBP is established, SATLAK PB meeting will be held to decide basic strategy for emergency response measures.

(2) Composition and Operation of SATLAK PB Meeting for Emergency Response

A. Composition of SATLAK PB Meeting for Emergency Response

All member of SATLAK PB will attend SATLAK PB Meeting for Emergency Reponse.

B. Participation Request from Related Organizations

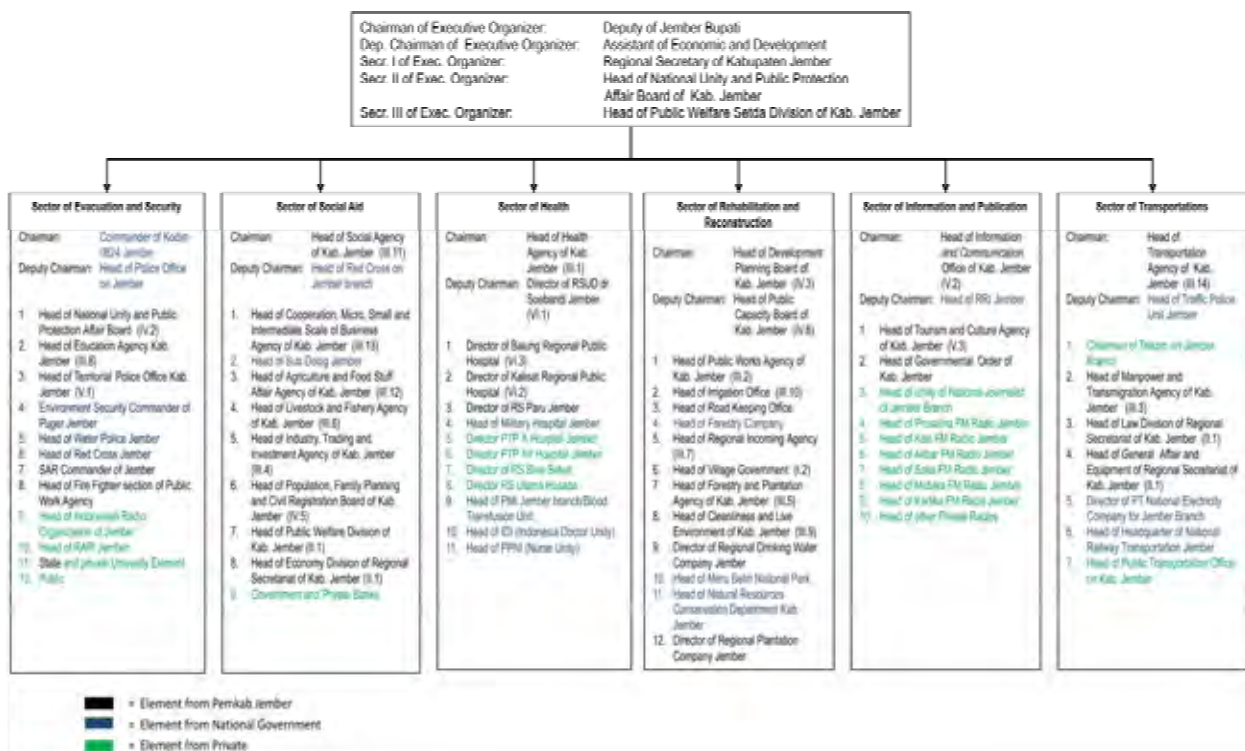
If necessary, all related organizations non-member of SATLAK PB are requested to participate in SATLAK PB Meeting for Emergency Response, such as lifeline companies, police, etc.

3) Dismissal of Rupusdalops PBP

1. Bupati will dismiss Rupusdalops PBP when there is no more risk of disaster or emergency rehabilitation is almost completed after occurrence of disaster
2. Bupati will inform head of SATKORLAK PB regarding dismissal of Rupusdalops PBP, and also inform the community through mass media and other means
3. After dismissal of Rupusdalops PBP, if still necessary, Bupati will order to continue implementation of emergency response measures based on Rupusdalops PBP.

4) Organization of Rupusdalops PBP

(1) Organization Chart of Rupusdalops PBP



(2) Role of Each Agencies of Rupusdalops PBP

PEMKAB

Agencies	Chapter	Sub Chapter	Tasks
Head of District	9	9.1	Disaster Response Activities by Community
	9	9.2	Disaster Response Activities by Community Groups
Bupati Office	1	1.1	Initial Response System (IRS)
	1	1.2	Warning Deployment System
	1	1.3	Rupusdalops PBP (Emergency Response Headquarters) and SATLAK PBP

Agencies	Chapter	Sub Chapter	Tasks
Health Agency	11	11.5	Rescue, First Aid, Medical Treatment Measures
	11	11.6	Procurement of Medicines and Medical Equipments
	11	11.7	Health Care and Hygiene Measures
	11	11.10	Epidemic Prevention Measures
	11	11.11	Searching for missing victim and casualties treatment
Public Works Agency	7	7.1	Target of Removal
	8	8.2	Securing of Transportation Network
	13	13.1	Investigation of Damaged Buildings
	13	13.2	Survey of Damaged Residential House
	13	13.3	Construction of Temporary Housing and Emergency Restoration of Damaged Buildings
Education Agency	12	12.1	Management of School Facilities
	12	12.2	Measures for Students and Pupils
	12	12.3	Procurement and Provision of School Supplies, etc.
	12	12.4	Management of Education Facilities
Cleanliness and Environment Agency	7	7.2	Team of Removal
	7	7.4	Temporary Storage Sites for Debris
	11	11.8	Solid Waste Management
	11	11.9	Human Waste Management
Irrigation Agency	2	2.3	Receive and Transmitting Weather Forecasts and Warnings
	4	4.2	Preventive Measures for Secondary Disaster
Social Agency	3	3.1	National and Province
	3	3.2	Peripheral Kabupatens
	11	11.1	Food Provision Measures
	11	11.3	Daily Commodity Provision
	11	11.4	Acceptance of Goods from outside Disaster Affected Area
Transportation Agency	2	2.1	Communication Tools
	2	2.2	Establishing Disaster Communication Operation System
	2	2.3	Receiving and Transmitting Weather Forecasts and Warnings
	5	5.2	Emergency Call Up and Mobilization
	6	6.3	Road Transportation Management
	8	8.1	Securing Transport Equipments
	11	11.3	Daily Commodity Provision
National Unity Agency	3	3.3	Disaster Management Related Organizations
	3	3.5	Volunteers
	4	4.1	Warning, Evacuation, and Guidance Measures
	10	10.1	Announcement of Evacuation Warnings
	10	10.2	Set up of Alert Area
	10	10.3	Advice for Evacuation and Transfer
	10	10.4	Set up of Temporary Evacuation Facility and Its Management and Operation
	14	14.1	Recovery Information of Lifeline
	14	14.2	Water Supply Facility
15	15.1	Information Sharing with National and Provincial Organization	

Agencies	Chapter	Sub Chapter	Tasks
	15	15.2	Acceptance of Foreign Assistance
Information and Communication	2	2.1	Communication Tools
	2	2.2	Establishing Disaster Communication Operation System
	2	2.4	Collection of Disaster Information
	2	2.5	Publication of Disaster Information
	4	4.3	Publication and Dissemination of Information to Community
Regional Secretary	1	1.4	Rupusdalops PBP Staff Mobilization

Other Organizations

Agencies	Chapter	Sub Chapter	Tasks
Indonesian Police	6	6.1	Security Measures by Police
Indonesian Red Cross	11	11.1	Food Provision
	13	13.3	Construction of Temporary Housing and Emergency Restoration of Damaged Buildings
TELKOM	14	14.4	Telecommunication Facility
Regional Water Company	11	11.2	Water Provision
National Electric Company	14	14.3	Electric Supply Facility
KAMLA	6	6.2	Sea Safety Control and Security Measures
Air and Water Police	6	6.2	Sea Safety Control and Security Measures
Fire Fighting Office	5	5.1	Fire Fighting Organization
	5	5.3	Fire Fighting Activity
Commander of District Military	3	3.4	Military, etc.
SAR	11	11.11	Searching for Missing Victim and Casualties Treatment
BMG	2	2.3	Receiving and Transmitting Weather Forecasts and Warnings
Private Enterprises	9	9.3	Disaster Response Activities by Private Enterprises
Cooperation	7	7.3	Method of Removal

1.4 Rupusdalops PBP Staff Mobilization

Responsible Agency:	District Secretary
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1) Mobilization Criteria

Bupati as a head of Rupusdalops PBP will mobilize staffs and implement relevant activities based on the criteria mentioned below:

Category	Mobilization Criteria
1 st Mobilization	1. When heavy rain, flood, or windstorm warnings were announced in Kabupaten Jember Region, and actual damages were able to observe and certain level of damage were anticipated 2. When heavy rain, flood, or windstorm warning are announced in Kabupaten Jember Region, and BMG forecasted there will be certain level of rain fall occurred
2 nd Mobilization	When heavy rain, flood, or windstorm warnings were announced in Kabupaten Jember Region, rain fall and damage occurred at certain level of danger situation
3 rd Mobilization	When heavy rain, flood, or windstorm warning were announced in Kabupaten Jember Region, and devastating damage occurred or anticipated

2) Component of Mobilization

(1) 1st Mobilization

Each head of Agencies will mobilize number of staffs assigned to designated location or to their offices.

(2) 2nd Mobilization

Each head of Agencies will mobilize number of staffs assigned to designated location or to their offices. Head of Social Welfare Agency and Health Agency have to mobilize number of staffs to take a role in evacuation faculties.

Moreover, in case of occurrence of disaster after working hours, each agency which hold jurisdiction on facility utilized for emergency response activities, should mobilize staffs.

(3) 3rd Mobilization

All staffs will be mobilized to designated location or to their offices, as assigned in advance.

3) Staff Mobilization

Staff mobilization of each agency is mentioned as below. Moreover for 1st, and 2nd Mobilization, staffs in charge are designated in advance.

Agencies	Responsible Sector	1 st Mobilization	2 nd Mobilization	3 rd Mobilization
Health Agency	3. Health	3	1/3 of Staffs in each agency	All Staffs
Public Works Agency	4. Rehabilitation and Reconstruction	3		
Manpower and Transmigration Agency	6. Transportation	1		
Industry, Trading and Investment Agency	2. Social Aid	1		
Forestry and Plantation Agency	4. Rehabilitation and Reconstruction	2		
Livestock and Fishery Agency	2. Social Aid	2		
Regional Incoming Agency	4. Rehabilitation and Reconstruction	1		
Education Agency	1. Evacuation and Security	3		
Cleanliness and Live Environment Agency	4. Rehabilitation and Reconstruction	3		
Irrigation Agency	4. Rehabilitation and Reconstruction	2		
Social Agency	2. Social Aid	4		
Agriculture and Food Affairs Agency	2. Social Aid	2		
Cooperation, medium and small scale business Agency	2. Social Aid	1		
Transportation Agency	6. Transportation	3		
National Unity and Public Protection	1. Evacuation and Security	4		
Development Planning Board	4. Rehabilitation and Reconstruction	2		
Population, Family Planning and Civil Registration Board	2. Social Aid	2		
Public Capacity Board	4. Rehabilitation and Reconstruction	1		
Territorial Police Office	1. Evacuation and Security	3		
Information and Communication Office	5. Information and Publication	4		
Tourism Service Office	5. Information and Publication	2		
Dr. Soebandi Regional Public Hospital	3. Health	2		
Kalisat Regional Hospital	3. Health	2		
Balung Regional Public Hospital	3. Health	2		

Remark: For 1st and 2nd Mobilization, number of staff includes head of agencies.

4) Order of Staffs Mobilization

(1) Commander

Staff Mobilization was ordered by head of Rupusdalops PBP (Bupati)

(2) Order Transmission System

A. During working hours

Transmitted by telephone line or public radio system in PEMKAB



B. After working hours

Transmitted by telephone line



(3) Mobilization not Depend on Order

During working hours, due to malfunction of communication system, when order was not accessible, mobilize yourself by your own decision.

Moreover when devastating disaster occurs or a high risk of disaster occurrence was anticipated, after working hours, do not wait for mobilization order. Mobilize yourself to designated location based on mobilization criteria.

5) Mobilization Participant

Mobilization target are all staffs of PEMKAB Jember. However, the following staffs will be exempt.

1. Person with ill or handicapped and have difficulty to conduct emergency response activities
2. Due to occurrence of disaster, staff was in sudden ill or injured, therefore, not possible to mobilize

CHAPTER 2. DISASTER INFORMATION GATHERING AND DISSEMINATION PLAN

It is crucial for emergency response to gather and disseminate the accurate information on climate and disaster promptly and precisely. Moreover providing accurate disaster information to the community will avert panic and create smooth evacuation.

This chapter, will explain about plan for information gathering and dissemination in the event of disaster.

2.1 Communication Device

<i>Responsible Agency:</i>	<i>Transportation Agency, Information and Communication</i>
<i>Relevant Agency</i>	<i>All Type of Media, Army, Police</i>

1) Telephone (Wired phone and Mobile phone), SMS, Radio Communication

- (1) Telephone line such as wired phone and mobile phone, SMS and radio communications for administration (SATLAK-Kecamatan) was utilized in principal for gathering and disseminating disaster information and sharing necessary information for emergency response.
- (2) Installation of radio communication system in small government unit like dusun and RW/RT will be processed to guarantee reliable communication network.

2) Radio Communication in an Emergency

The following radio communication system will be utilized to guarantee smooth communication in the event of disaster in case communication between Kabupaten and related departments/agencies were unable due to interruption in telephone line such as wired phone and mobile phone.

1. Army radio and Police radio communication system
2. Indonesian amateur radio organization (ORARI)
3. Private radio station (AM/FM) in Jember

3) Information Dissemination in an Emergency

Private radio station AM/FM will be utilized to disseminate information widely in an emergency, such as evacuation instruction/order.

4) Other Tools for Information Dissemination

In order to multiply the communication tools, installation of other tools such as satellite telephone and email system via internet will be considered.

5) Request for Equipments Reparation for Information Dissemination

When telecommunication tools were out of order, reparation will be requested to its provider promptly.

6) Messenger, Mosque Loudspeaker, Kenthongan and Car Loudspeaker

In case that all of wired or wireless communication was interrupted, or if necessary, information gathering and dissemination will be done with every possible means such as messenger, mosque loudspeaker, Kenthongan and car loudspeaker car etc.

2.2 Establishing Disaster Communication Operation System

<i>Responsible Agency:</i>	<i>Transportation Agency, Information and Communication</i>
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Each information communication tools was operated as follows:

1) Information Transmission Tools

- (1) Movable communication was done by mobile phone, SMS and mobile radio transmission
- (2) Fixed communication was done by wired phone, fixed radio transmission, radio broadcast service, mosque loudspeaker and Kenthongan.

2) Type and Priority of Information Communication

(1) Type of Communication

1. Emergency communication: Communication required when emergency situation occurred or possible to occur
2. General communication: Communication except emergency communication
3. Concurrent communication: Communication to be done concurrently and unilaterally to a number of agencies/persons
4. Individual communication: Communication to be done individually between two agencies/persons

(2) Priority

Communication at occurrence of disaster was prioritized as follows:

High priority:	Emergency and concurrent communication
Medium high priority:	Emergency and individual communication
Medium low priority:	General and concurrent communication
Low priority:	General and individual communication

3) Operation of Communication

(1) Movable Concurrent Communication

Information such as evacuation order, call for establishment of Rupusdalops PB and warning, which should be transmitted promptly and adequately to relevant agencies, are transmitted from SATLAK by concurrent communication of SMS and/or radio transmission.

(2) Fixed Concurrent Communication

The following information regarding disaster management are transmitted to Kecamatan office and/or community by radio transmission, mosque loudspeaker , Kenthongan and radio broadcast.

1. Climate condition affected occurrence of disaster
2. Damage by disaster and issues related with information dissemination

(3) Communication Control

Administrator will control information communication to prioritize the important communication when communication was congested or may be congested.

4) Communication Route and Tools**(1) SATLAK-Kecamatan**

Gathering and disseminating disaster information between Kabupaten and Kecamatan were done by wired phone, mobile phone and radio transmission.

(2) Kecamatan-Desa/Kelurahan

Gathering and disseminating disaster information between Kecamatan and desa/kelurahan were done by wired phone and mobile phone.

(3) Desa-Dusun, RW/RT, Community

Gathering and disseminating disaster information between desa/kelurahan and lingkungan/kampung/dusun and RW/RT were done by wired phone and mobile phone. While information dissemination such as evacuation instruction was done by mosque loudspeaker and/or Kenthongan etc.

(4) SATLAK-Disaster Related Agencies

- (1) Gathering and disseminating disaster information between Kabupaten/SATLAK and related agencies including army and police were done by wired phone and mobile phone.
- (2) Gathering and disseminating disaster information in and between disaster related agencies were done by wired phone, mobile phone and radio transmission.

(5) Bupati-Community

Private radio stations of AM/FM are utilized for dissemination of wider information such as evacuation instruction/order in an emergency.

2.3 Receiving and Transmitting Weather Forecasts and Warnings

Responsible Agency:	Transportation Agency, BMG Irrigation Agency
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In that the event of disaster caused by climate phenomenon like rainfall, high temperature, low humidity and strong wind, BMG will issue warning refers to its conditions.

Irrigation agency issues warning according to the condition of rainfall and water level.

These information will be received and transmitted by the following procedure.

1) Climate Forecast and Warning etc.

(1) Definition of Forecast and Warning

BMG issues the following forecast and warning.

Type	Definition
Forecast	Prediction of phenomenon based on the results of observation
Warning	Forecast to call the attention to disaster occurrence in case that disaster is expected to occur
Information	Explanation of actual state and transition of abnormal phenomenon like heavy rain.

(2) Type of Waning and Criteria

Type of waning and criteria of BMG are as follows:

Type	Criteria
Warning of heavy rain and flood	In case that damage will be expected by heavy rain. In particular, in case that the rainfall of more than 30mm/hour is observed.
Warning of high temperature	In case that damage will be expected by high temperature. In particular, in case that temperature of more than 36 degrees centigrade is observed.
Warning of low humidity (fire)	In case that fire will be expected by low humidity. In particular, in case that humidity of less than 50% is observed.
Warning of tsunami, high wave and high tide	In case that damage will be expected by tsunami, high wave, high tide and sea level rise. Criteria is under study.

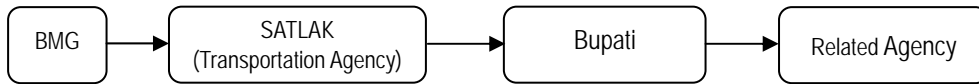
Type of waning and criteria of Irrigation Agency are as follows:

Type	Criteria
Heavy rain warning	In case that damage will be expected by heavy rain. In particular, in case that the rainfall of more than 100mm/day is observed.
Flood warning	In case that damage will be expected by raising of water level. In particular, in case that the water level rise to a dangerous level.

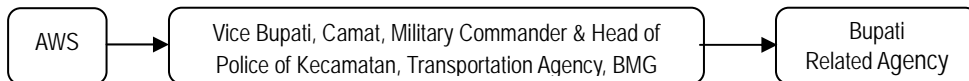
2) System for Receiving and Transmitting Forecast and Warning

- (1) Forecast and warning from BMG to Kabupaten will be received and transmitted by the following procedure.

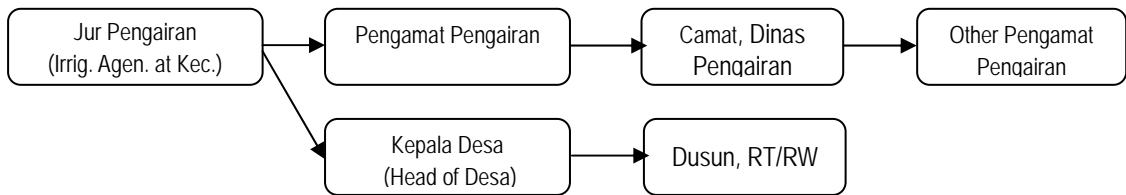
<Telephone>



<SMS by Automatic Weather Station (AWS)>



- (2) Warning based on observation result in observation station of Irrigation agency will be transmitted using telephone by the following procedure.



2.4 Collection of Disaster Information

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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Collection and reporting of disaster information and damage condition are set up as follows.

1) Collection of Information

(1) Damage Survey by Kabupaten (SATLAK)

Kabupaten/SATLAK conducts:

- damage survey in order to identify the damage condition,
- collection and consolidate the information from various source in Rupusladops PBP, and
- providsion of collected information to disaster related agencies.

(2) Multipleying of Information Collection Tools

Kabupaten/SATLAK sets up information desk in order to collect disaster information from community, voluntary disaster management organization, and enterprise etc.

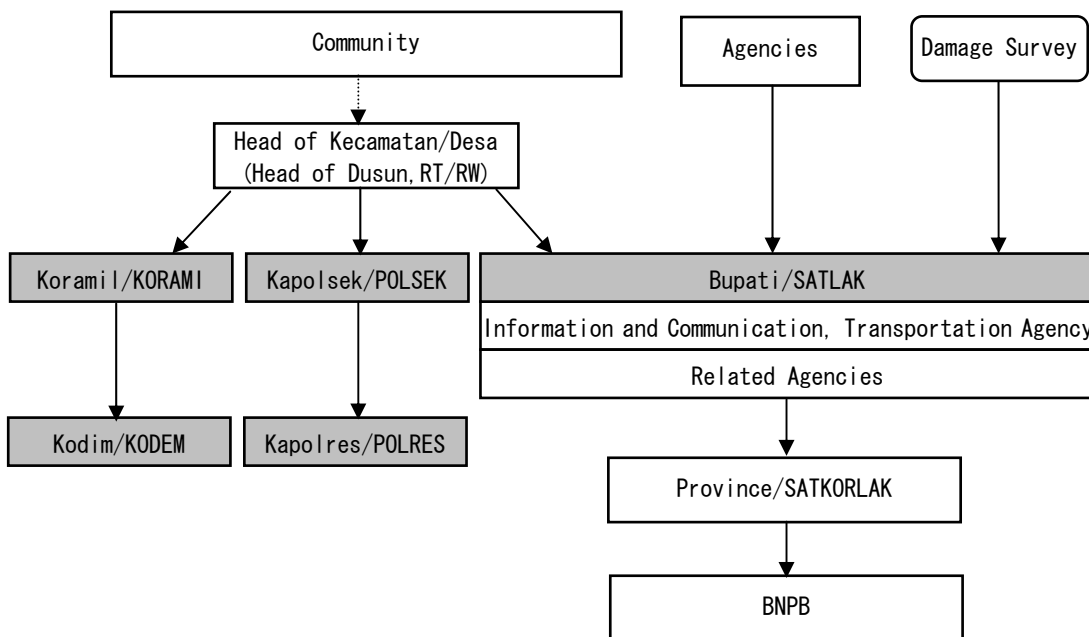
(3) Reporting Obligation by Community

Residents who discover the occurrence of disaster and unusual phonomenan that may lead to disaster, should promptly report to nearest government organization, police or army.

2) Reporting Disaster Information

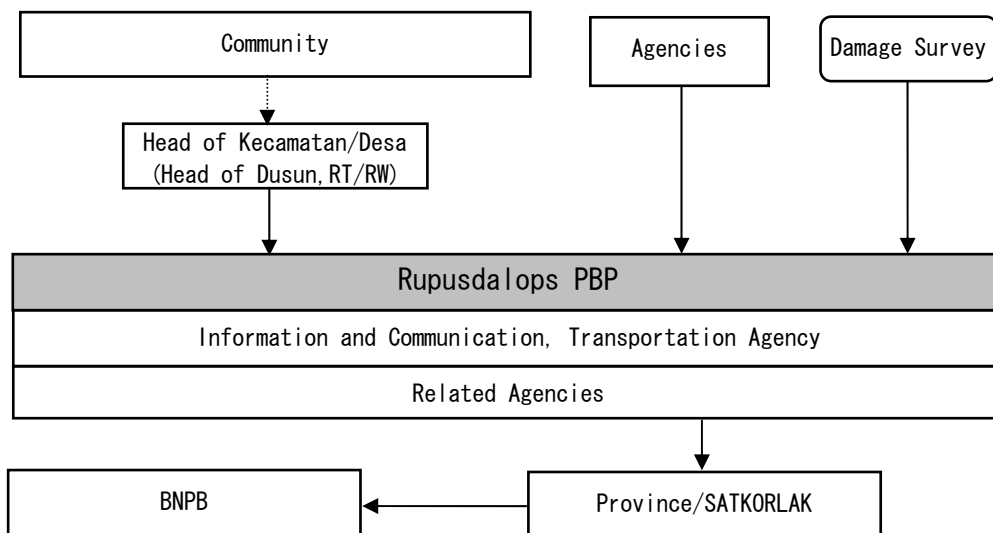
Disaster Information which surveyed and collected after occurrence of disaster will be disseminated by the following route.

<Before Establishment of Rupusdalops PBP>



Note: Disaster information and the result of damage survey will be integrated by information and communication department.

<After Establishment of Rupusdalops PBP>



Note: Disaster information and the result of damage survey will be integrated by information and communication agency.

3) Items of Collected Information

(1) Right after Disaster Occurs

It is most important to identify the place and scale of damage adequately in order to avoid more serious damages and secondary disaster. Therefore, the following information are collected.

1. High tide warning, and water level in coastal area in case that warning is already issued
2. Fire occurrence and fire spread condition
3. Damage and risk of landslide condition
4. Condition of victim to be rescued
5. Damage condition of buildings
6. Damage condition of road and railway
7. Necessity of evacuation and process condition
8. Damage condition of lifeline

(2) After Recovery from Confusion of Disaster

After almost all disaster information were collected and damage condition of Kabupaten was identified, the following information are collected with purpose to rescue and give aid to community, and also to implement initial rehabilitation.

1. Review of damage
2. Condition of disaster victim
3. Necessity for giving rescue and aid
4. Action during disaster
5. Action after disaster

4) Information Communication Tools

- (1) Information is transmitted by most secure and fast equipment among fixed and movable communication tools.
- (2) In case that fixed line is interrupted, radio communications of government, police and army are utilized.
- (3) In case that communication is disconnected, all of measures such as dispatch of messenger to area where communication is available are utilized.

5) Reporting to Province/SATKORLAK

(1) Reporting Tools

Reporting disaster information was done by telephone and/or fax.

(2) Destination of Report

When there was number of casualties caused by disaster, Kabupaten/SATLAK will report actual state to SAR and Province/SATKORLAK. If Kabupaten unable to report damage condition and emergency response measures to the Province/SATKORLAK, Kabupaten/SATLAK will directly reports to BNPB.

(3) Contents and Procedure of Reporting

Contents and procedure of report to the Province are as follows:

1. Disaster report produced by SATLAK PBP as a formal governmental report will include:
 - a. Date and hour
 - b. Reporting profile
 - c. Disaster intensity and disaster affected area
 - d. Number of saved, injured, died, and lost victims
 - e. Total amount of refugees and its condition
 - f. Damaged facilities and accessibility
 - g. Total amount of financial loss
 - h. Type and amount of delivered support
 - i. Type and amount of required support
 - j. Other important information needed for decision making by the head of SATKORLAK PBP as well as the head of SATLAK PBP.
2. Due to difficulty in getting disaster information comprehensively, SATLAK PBP will send the report into 4 phases as follows:
 - a. Phase I
Make first report within at least 1 x 24 hours after disaster occurs, which reported by SATLAK PBP to SATKORLAK PBP and will be sent to BNPB, and it will include:
 - 1) Disaster type
 - 2) Date and hour
 - 3) Disaster Location
 - 4) Disaster profile
 - 5) Worst disaster location area
 - 6) Disaster indicator
 - 7) Ongoing and past emergency response measures
 - b. Phases II
Make report of damage condition within at least 2 x 24 hours, which reported by SATLAK PBP to SATKORLAK PBP and will be sent to BNPB, includes :
 - 1) Number of casualties, injured, missing victims, damaged house, refugee, and so on.

- 2) Damage of public facilities and accessibility including house, school, church mosque, hospital/puskesmas, clean water, roads and bridges, transportation facilities, and resources facilities.
- 3) Damage of civil properties including house, field/farm/economic facilities
- 4) Financial loss estimation
- 5) Applied emergent response measures

c. Phase III

Make report to support phase II report including information of required support for disaster victim, includes:

- 1) Type of necessary support
- 2) Quantity of required support
- 3) Delivered support
- 4) Type and quantity of the support still needed

d. Phase IV

Make complementary report of all reported items and result of evaluation conducted by disaster study team, includes:

- 1) Rehabilitation and reconstruction object
- 2) Priority scale
- 3) Necessary budget
- 4) Table of support delivery and distribution (cost, material, personnel, expert, etc.)

2.5 Publication of Disaster Information

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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In occurrence of disaster or high risk of disaster occurrence, proper publication activities are conducted in order to disseminate disaster information and disaster management measures to community, with aim to stabilize community perspective and encourage them to take necessary actions.

1) Publication Items

(1) Publication soon after Disaster occurs

1. Climate information like heavy rain
2. Information of water level of rivers
3. Announcement to avert panic
4. Instructions, directive and guidance of Evacuation
5. Announcement to avert fire occurrence
6. Announcement of lifesaving support
7. Damage condition
8. Progress of emergency response
9. Information of emergency shelter, etc.

(2) Publication after Disasters

1. Climate information like heavy rain
2. Damage condition
3. State of achievement of emergency response
4. Transport facilities condition
5. Road traffic condition
6. Lifeline condition
7. Supply condition of aid supplies
8. Type of necessary support for disaster affected people

2) Publication Measures

Precise and accurate disaster information should be disseminated to the community in order not to cause confusion at a disaster. In Kabupaten Jember, accurate disaster information and precise instruction for evacuation/standby will be provided to the community by the following manner

(1) Emergency Radio Broadcast

In order to disseminate accurate disaster information to community in an emergency, Bupati will call the community directly through the private radio station (AM/FM)

(2) Radio Communication for Administration

Information will be transferred by radio communication.

(3) Mosque Loudspeaker and Kenthongan

Information will be disseminated by Mosque Loudspeaker and Kenthongan.

(4) Car Loudspeaker and Occasional Public Relations Paper

Publication will be conducted by public relations paper or sound by dispatch of car loudspeaker to the necessary area.

(5) HP of Kabupaten

Information is provided by HP of Kabupaten and internet etc.

3) Disaster Records

Damage situation will be recorded by photograph, video, etc. as material for publication activities.

4) Utilization of Mass Media

(1) Multiplying of Publication Measures

Information will be provided actively to mass media in order to disseminate information on damage condition and personal safety etc. to families and community who live in other area.

(2) Publication of Support Information

Publication activities will be conducted utilizing mass media in order to publicize information for necessary support such as aid supply and request of volunteer etc.

CHAPTER 3. REQUEST FOR SUPPORTS

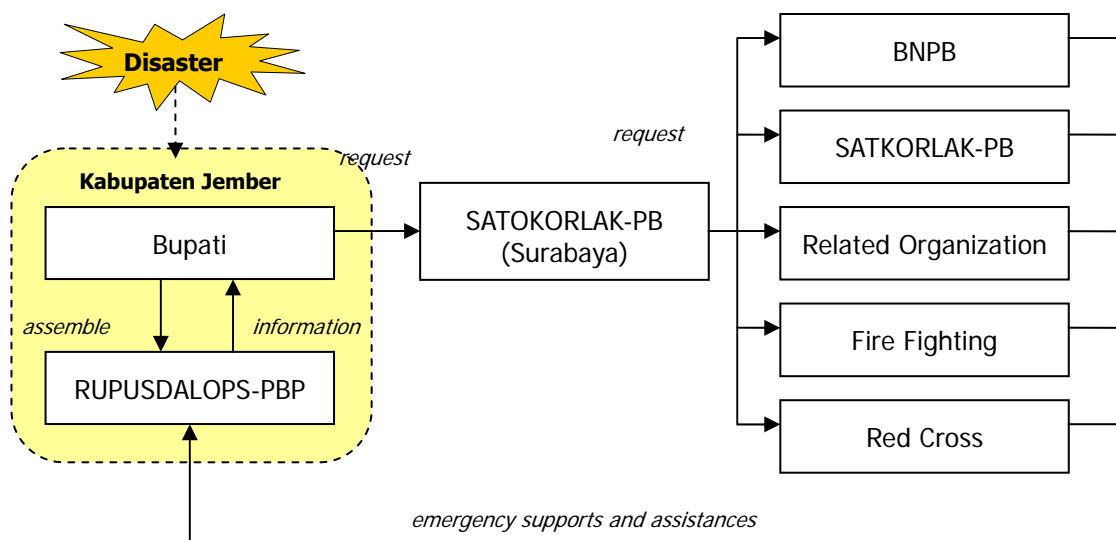
After a disaster occurs, RUPUSDALOPS-PBP (Emergency Response Headquarter) will request volunteer and related organizations supports in case that Kabupaten Jember was unable to conduct emergency response and recovery activities without any external helps.

3.1 National and Province

Responsible Agency:	Social Agency
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In case that Bupati, head of RUPUSDALOPS-PBP, decides emergency assistance from outside Kabupaten due to heavy damage from disaster, SATOKORLAK-PB will be informed about the request. After receiving requests from Kabupaten Jember, SATKORLAK-PB will handle the arrangement with following organization and agencies in order to obtain necessary supports and assistances. The procedure is illustrated in Figure 3.1.1.

- National and provincial level, BNPB and SATKORLAK-PB
- Related organization such as SAR
- Fire fighting and Indonesian Red Cross



Source: JICA Study Team

Figure 3.1.1 Request Procedure for Assistance from Concerned Organization

3.2 Peripheral Kabupatens

Responsible Agency:	Social Agency
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There are four Kabupatens in surrounding area of Kabupaten Jember; Kabupaten Bondowoso is located in the North, Kabupaten Banyuwangi is in the East, and Kabupaten Lumajang and Probolinggo are in the West. In terms of distance, these Kabupaten has large opportunities to support Kabupaten Jember under emergency circumstance.

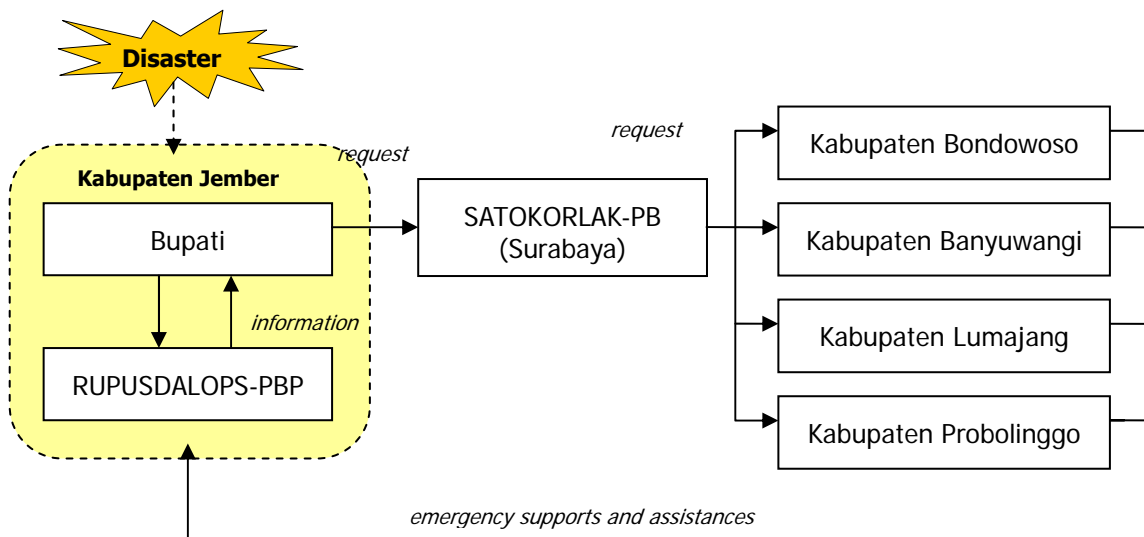
1) Support from the Peripheral Kabupatens

The four Kabupatens are expected to provide following supports and materials.

- Foods, drinking water, commodities and necessary equipments for supplying
- Rescue and recovery, first aid, infection disease prevention for refugees, and necessary equipments
- Vehicles for rescue and recovery
- Manpower for rescue and emergency medical treatment
- Others depending upon the requests

2) Procedure of the Request

In case that Kabupaten Jember needs supports from the peripheral Kabupatens, the formal requests shall be deliver through SATKORLAK-PB to them. The procedures are illustrated in Figure 3.2.1.



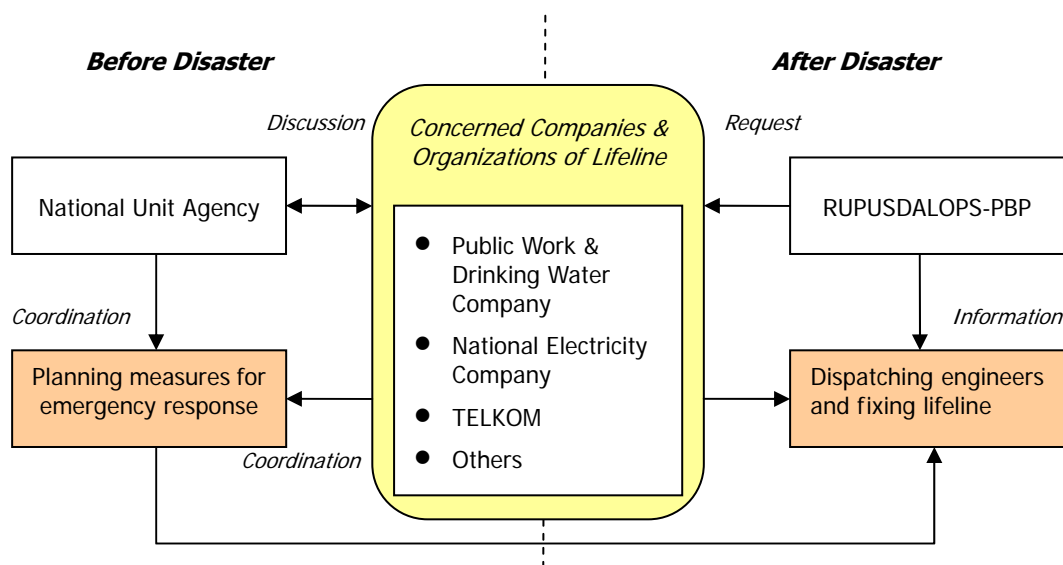
Source: JICA Study Team

Figure 3.2.1 Request Procedure for Assistance from Related Organization

3.3 Disaster Management Related Organizations

Responsible Agency:	National Unity Agency
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In occurrence of disaster, RUPUSDALOPS-PBP takes a main role of manpower distribution for emergency response. In such emergency response, special techniques might be needed for repairing lifeline, such as water supply, gas, electricity and telecommunication. Therefore National Unity Agency discusses with related organizations and companies in advance for formulating measures of emergency response, in particular, dispatching technical workers or/and engineers for immediate restoration works after occurrence of disaster. After disaster occurs, along with disaster management measures, RUPUSDALOPS-PBP requests physical helps to these organizations and companies for recovering lifeline. The procedure is illustrated in Figure 3.3.1



Source: JICA Study Team

Figure 3.3.1 Request Procedure for Fixing Lifeline

3.4 Military, etc.

<i>Responsible Agency:</i>	<i>Commander of District Military</i>
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In case RUPUSDALOPS-PBP needs supports from the military in order to lifesaving and/ or necessary property protection, Bupati will request for dispatching the military forces to SATKORLAK-PB. SATKORLAK-PB will convey the requests from Kabupaten Jember to BNPB and the military.

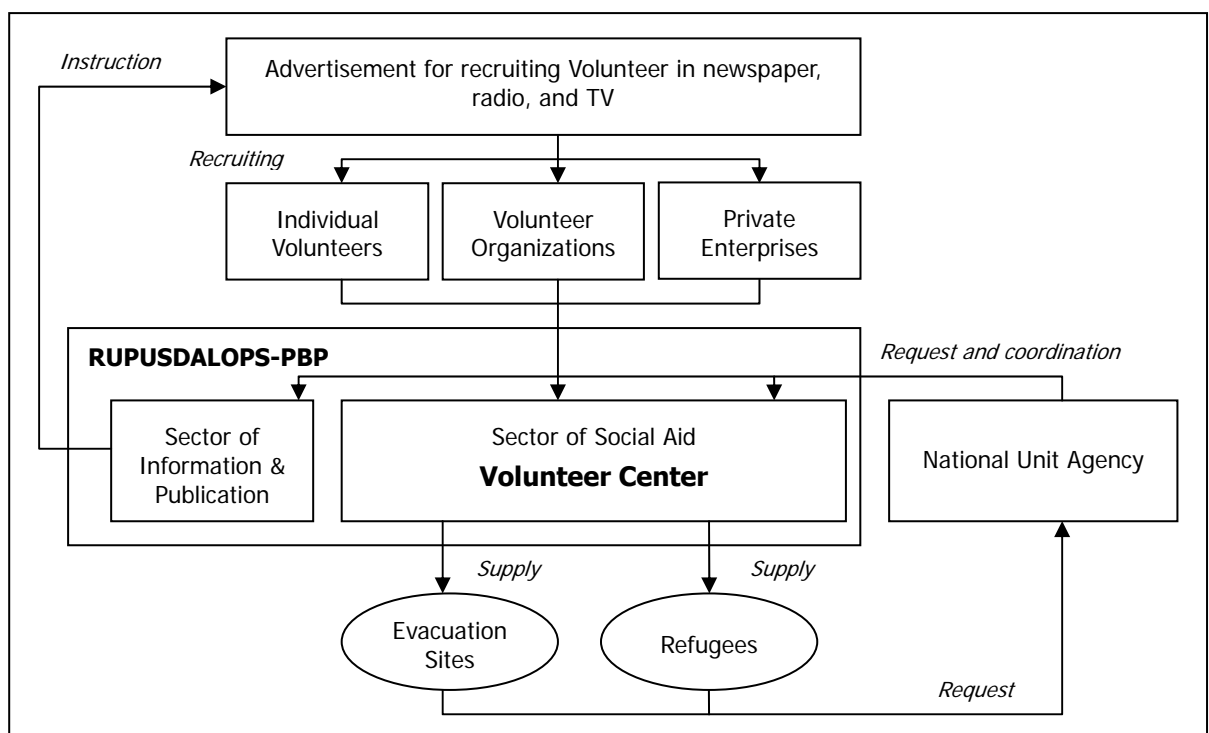
When it needs immediate action and no time to wait for formal procedure, Bupati will contact regional military office directly to request for their assistance and supports.

3.5 Volunteers

Responsible Agency:	National Unity Agency
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From the experience of disaster, volunteer organization including NGO has played an important role in emergency responses. For utilizing the workers, National Unit Agency will coordinate with volunteers for meeting demand such as recruiting, registration, and dispatching.

Volunteer coordination system is shown in Figure 3.5.1.



Source: JICA Study Team

Figure 3.5.1 Volunteer Coordination System

1) Request

National Unity Agency will figure out needs from other organizations, agencies and damaged areas, and then convey these requests to a volunteer center which is established under sector of social aid. The following items will be clarified for the requests.

- Name of facilities or evacuation sites subject to volunteers
- Period of activities
- Contents of activities
- Necessary expertise, knowledge and experience

- Number of volunteers

2) Recruiting

Existing volunteer organizations/groups might be not enough to cope with problems caused by a disaster. Therefore, National Unity Agency will ask to recruit volunteers in individual, groups and organization through media such as radio, newspaper, and TV under Sector of Information & Publication of RUPUSDALOPS-PBP. The following information will be explained in the media.

- Contents of activities
- Period of activities
- Place
- Expertise, knowledge and experience
- Number of volunteers
- Contact person and telephone number

3) Information Desk

The following items will be identified at information and registration desk of volunteer.

- Name of individual, group, and organization
- Expertise, knowledge and experience
- Number of volunteers
- Possible working period
- Time needed to destination
- Contact method

4) Control of Demand and Supply

Based upon information from damaged areas and related agencies, volunteers will be dispatched appropriately to meet the demand.

5) International Volunteer

Acceptance of international volunteers is mainly relied upon SATKORLAK-PB and BNPB.

CHAPTER 4. SEDIMENT DISASTER MEASURES

4.1 Warning, Evacuation, and Guidance Measures

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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Guidance is given to perform evacuation in order to secure safety of residents' lives in vulnerable areas such as landslide risk. Moreover, community cooperation should be obtained for prompt evacuation of those who may have difficulty to evacuate, such as infants, elderly, and disabled.

4.2 Preventive Measures for Secondary Disaster

<i>Responsible Agency:</i>	<i>Irrigation Agency</i>
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1) **Confirming safe conditions of vulnerable area to landslide**

Any landslide prone areas by heavy rain are patrolled when a disaster occurs and necessary advice is given to the residents. Moreover, conditions of vulnerable area at risk to secondary disaster are confirmed for safety and disaster countermeasures office will be contacted.

2) **Restrict access to a landslide area**

Surrounding of landslide prone area includes as a monitor zone until identification of its safety and considered as a restricted zone.

3) **Caution during search and rescue activities**

In case search activities are conducted for missing persons or for emergency rehabilitation work, sufficient cautions are taken and observation performed in preparation for a secondary disaster.

4) **Emergency measures**

In order to implement emergency measures to prevent escalation of damage caused by a secondary disaster, facilities and their surrounding area are checked and surveyed. Once they are deemed safe the emergency measures for secondary disaster prevention are performed.

4.3 Publication and Dissemination of Information to Community

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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Information is transmitted to residents about vulnerable areas to landslide, evacuation sites, evacuation routes etc. by television, radio, or community means (such as by an independent disaster prevention organization).

CHAPTER 5. FIRE FIGHTING MEASURES

In occurrence of big disaster or high risk of disaster occurrence in Kabupaten Jember, emergency response system by Fire Fighting Office shall be planned as follow.

5.1 Fire Fighting Organization

<i>Responsible Agency:</i>	<i>Fire Fighting Office</i>
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- Emergency response headquarter shall be organized in Fire Fighting Office to take necessary measures for disaster management. Head of Fire Fighting Office shall be the head of emergency response head quarter. Under this organization, local fire fighting system shall be cooperated to cope with disaster.
- According to level of alert such as level 1~4, special warning system shall be established in Fire Fighting Office.

5.2 Emergency Call and Mobilization

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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Emergency call and mobilization system of fire fighting staffs shall be established to take necessary response to disaster.

5.3 Fire Fighting Activity

<i>Responsible Agency:</i>	<i>Fire Fighting Office</i>
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Fire Fighting Office shall take necessary activities to mitigate disaster damage and protect human lives and assets. Following activities shall be taken.

- Collection of disaster information such as weather condition, water level, high tide, damage situation, and fire fighting operation.
- Patrolling by fire fighting staffs to check damage situation and disaster potential.
- Dissemination of weather condition and evacuation information to community.
- Giving guidance on evacuation activity of community in case of evacuation is ordered.
- Rescue operation shall be conducted in cooperation with community disaster management organizations or related agencies.
- Damage protection activities shall be taken to prevent secondary damage due to landslide, flood and high tide in cooperation with related agencies.

CHAPTER 6. SAFETY CONTROL / TRANSPORTATION MEASURES

6.1 Safety Control Measures by Police

<i>Responsible Agency:</i>	<i>Indonesian Police</i>
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1) Basic Policy for Safety Control

In occurrence of natural disaster or high risk of disaster occurrence, Police shall establish safety control system to take emergency response measures for related area. Main purpose of safety control system is to save resident life, assets and maintenance of transportation in disaster affected area. Based on safety control measures, social safety will be attained.

2) Establishment of Safety Control System

Head of police shall organize emergency response system to cope with natural disaster. According to alert level of natural disaster, safety control system will be enhanced. Command system for emergency response shall be established and disaster information sharing system among related agencies shall be enhanced.

3) Disaster Emergency Response Measures

- Collection and dissemination of disaster information to community.
- Supporting Kabupaten government to disseminate disaster warning to community
- Supporting emergency rescue operation in cooperation with Kabupaten and related agency
- Commanding evacuation for community in terms of necessary time and place
- Traffic control and management to support smooth operation of emergency activities
- Control of criminal activities such as robbery in disaster affected area by regular patrol in disaster affected area and evacuation sites.
- Supporting volunteer activities in disaster affected area and evacuation sites to secure social stability

6.2 Sea Safety Control and Security Measures

<i>Responsible Agency:</i>	<i>KAMLA and Air and Water Police</i>
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In response to natural disaster occurrence, KAMLA and Air and Water Police shall take safety control and security measures in the sea in order to protect human lives and assets. Following activities shall be conducted.

- Establishment of emergency response system according to disaster situation
- Disaster information collection and sharing among related agencies
- Information dissemination of information on damage of ships, situation of maritime rescue and so on in close cooperation with related agencies
- Recommendation to evacuate and evacuation area in the sea and dispatch warning to ships
- Operation of maritime rescue on ship wrecks at disaster occurrence

6.3 Road Transportation Management

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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Transportation Agency shall analyze disaster information and take necessary transportation control measures to secure emergency transportation network for emergency operation including necessary vehicle operation and evacuation of community. Following activities shall be planned.

- Transportation shall be controlled in disaster affected area to protect against traffic congestion and inflow traffic from outside. Alternative route and related traffic information shall be disseminated and displayed to solve congestion.
- Transportation of emergency vehicles such as ambulance or rescue operation shall be secured at first priority immediately after disaster occurrence.
- Traffic information shall be collected through police stations and related agencies to smooth operation of traffic control.
- Information of traffic control shall be disseminated by display board, announcement by car and utilizing radio broadcasting.
- Emergency vehicles used for giving evacuation warning, fire fighting, rescue operation, restoration of damaged facilities, cleaning and epidemic control, traffic control, police patrol, and related specific vehicles shall be checked and managed as priority traffic.

CHAPTER 7. DEBRIS REMOVAL MEASURES

Debris such as rocks, sand and gravels, woods bamboo etc, generated by landslide or building collapse will be a barrier not only for road transportation network but also for smooth operation of rescue activities in disaster affected area. Moreover, these debris will cause secondary damage such as flooding in river channel. Therefore, debris removal is important measures for emergency disaster management. Following measures are planned.

7.1 Target of Removal

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Debris removal shall be operated by responsible agency for the following reason.

- Immediate removal of debris is necessary to protect human life and assets.
- To conduct emergency operation such as evacuation, fire extinguishes and rescue.
- To protect flooding in river channel.
- To keep traffic safety and transportation route.
- Necessary for related public purposes.

7.2 Team of Removal

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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Public Works Agency shall conduct debris removal in cooperation with community, NGO and volunteers.

7.3 Method of Removal

<i>Responsible Agency:</i>	<i>Cooperation</i>
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Public Works Agency shall prepare necessary machines and equipments for debris removal such as bulldozer, crane, dump truck and related tools. Available private-owned heavy machines and vehicles shall be temporarily used for debris removal if necessary. Debris removal in main road network, rivers and canals will be given high priority.

7.4 Temporary Storage Sites for Debris

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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Temporary storage site for debris shall be prepared either at public open space or at private land. Shall be paid attention that debris removal is not causing secondary.

CHAPTER 8. EMERGENCY TRANSPORTATION MEASURES

Demand for emergency transportations will rise when big disaster occurs such as transportation of victims and refugees, emergency response staffs and supplies. In order to conduct quick and adequate transportation for disaster activities, emergency transportation measures are planned as follows.

8.1 Securing Transport Equipments

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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1) Vehicles of PMKAB

Transportation Agency registers vehicles of PEMKAB which are necessary for emergency transportation activity as an emergency vehicle beforehand and keep these under control. Each Transportation Agency requests to allocate the vehicle and use by order from the Agency.

No.	Type	Name	Registration No.	Max. authorized payload (unit; tone, person)	Agency

2) Procurement Request

In case they cannot cope with disaster activities only by using vehicles of PEMKAB, Transportation Agency requests vehicles as follows.

(1) Request to Other Agencies in PEMKAB

- Car, Truck and Special vehicle

Request to a bus company and a transportation company

- Fishing boat

Request to a fisherman

(2) Request to the Province

- Car, Truck and Special vehicle

- Vessel

(3) Request to a Railway Company

In case railway is suitable, request the railway company for cooperation

(4) Request for Air Transportation

In case of air transportation is needed, request to utilize airplanes of the army and the police.

3) Security of the Emergency Traffic Vehicle

Transportation Agency issues an emergency vehicle certificate to vehicle engaged in emergency transportation activity. Driver has to put the vehicle certificate only for emergency transportation activity.

4) Transportation Plan

(1) Prioritized Purpose

Purpose of using emergency transportation depends on urgent situation. The following are procedure for emergency transportation measures.

A. 1st stage (From right after until second day of disaster)

To supports directly either dead or injured victim by occurrence of disaster, following items are necessary to be prioritized to reduce confusion after disaster.

- An ambulance service, medical service and staffs who manage medical supplies and other supplies
- Firefighting, flood control activity staffs who manage prevention of a disaster
- Staffs or supplies which are necessary for first aid disaster measures such as staffs from national and local government, information and communication, electricity, gas, water service institution security guard
- Injured peoples who are transported to public health center or hospital
- Staffs and the equipments that are necessary for the transportation such as transportation facilities, emergency rehabilitation of transportation center and traffic regulation

B. 2nd stage (From the third day to first week after the disaster)

To mitigate damage and manage confusion caused by occurrence of disaster, following items are necessary to recover quality of life for emergency.

- The 1st stage continuation activity
- Supplies which are necessary to support daily life support such as food, water, etc.
- Disaster victim and handicapped who are transported to outside of disaster area

- Staffs and equipments that are necessary for emergency rehabilitation of transportation facilities

C. 3rd stage (After one week from the disaster)

To supports daily life that became more difficult by disaster, and things which are necessary to be reconstructed after disaster, mainly focus on following items.

- The 2nd stage continuation activity
- Staffs and equipments that are necessary for the reconstruction process after disaster
- Life needs

(2) The Transfer Lines

The transfer lines are refereed “2-11 Development of Emergency Transportation Facilities”.

8.2 Securing Transportation Network

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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In occurrence of disaster, Public Works Agency handles immediately the damage situations of the road and removes barriers on the road, and implements emergency rehabilitation to secure the transportation network. In emergency rehabilitation, securing transportation network is urgently implemented.

1) Report of the Traffic Barrier

Public Works Agency implements information sharing with related organization such as the province, police, and gains or reports the damage situations of the road for securing emergency transportation network.

2) Remove Barriers on the Emergency Transportation Road

Public Works Agency in cooperation with the province removes barriers on the emergency transportation road.

- After disaster occurs, Public Works Agency checks the damage situation of emergency transportation roads. When responsible road management from the province checks emergency transportation roads, Public Works Agency cooperates with them.
- When there are barriers by outflow of soils at emergency road sections, Public Works Agency attempt to collect information of the road section and implement information sharing with the province and related organization.
- Public Works Agency will prioritize road section for removal of barriers in consideration of the importance and effectiveness of the emergency transportation road.

CHAPTER 9. DISASTER RESPONSE ACTIVITIES BY COMMUNITY AND PRIVATE ENTERPRISES

It is totally depend on mutual disaster damage mitigation and prevention activities by community and private enterprises to secure safety of individuals, family and community member. The following measures shall be taken by community and private enterprises.

9.1 Disaster Response Activities by Citizens

<i>Responsible Agency:</i>	<i>Bupati</i>
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1) In house Activities

Resident shall take following disaster response activities:

- Keeping safety of family members as much as possible and prevent fire occurrence
- Information collection by radio or television to get latest current situation of disaster
- Preparation of portable lamp, radio, medicines, clothes, valuables goods and emergency food
- Saving drinking water
- Checking safety of own house
- Checking safety of family members

2) Community Activities

Community members shall take following activities to secure community safety.

- Community members shall conduct rescue activity and first aid for neighborhood, fire extinguishes and so on, cooperates with related agencies in emergency measures.
- Check safety of elderly or handicapped living within the community.
- Give first aid to slight injuries.
- Evacuate smoothly according to evacuation warning to temporary evacuation site.
- Actively join community disaster activities.

9.2 Disaster Response Activities by Community Groups

<i>Responsible Agency:</i>	<i>Bupati</i>
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In order to take effective emergency measures, it is important to prepare a well organized and trained community for disaster management. Expected disaster response activities by community are as follow.

- Rescue and first aid shall be conducted for confined victims within a building or house collapse by disaster. Emergency treatment shall be given to necessary victims. If medical treatment is necessary, injuries shall be transported to hospital. Safety check and rescue for elderly or handicapped living in the community is high priority activity.
- Evacuation guide and safety check of the community members at evacuation site is important. For movement of elderly or handicapped to evacuation site, special support should be made by community members.
- Disaster information collection and dissemination shall be conducted through hearing of community and site observation. Collected information shall be reported to Bupati and disseminated to community members precisely to prevent a panic.
- Community members shall support and cooperate to distribute drinking water and food services from Kabupaten or social welfare agency.
- Management and operation of evacuation site shall be conducted by community members in cooperation with NGO or voluntary staffs.

9.3 Disaster Response Activities by Private Enterprises

<i>Responsible Agency:</i>	<i>Private Enterprises</i>
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Disaster response activities by private enterprises are as follow.

- Disaster and damage information collection shall be conducted to minimize damage and promote necessary activities effectively after occurrence of disaster. Private enterprises have to check safety of employees and their family and provide proper support if necessary.
- Rescue operation and first aid for employees shall be provided to victims by each private enterprise.
- Evacuation guide shall be conducted smoothly to employees according to emergency manuals prepared by each private enterprise.
- Private enterprises shall cooperate and join community disaster management activities as well as own organization.
- After completion of damage survey and emergency response, private enterprises shall start their own activities to restore regional economy.

CHAPTER 10. EVACUATION MEASURES

When disaster occurs and there is a risk of secondary disaster, or there are vulnerable houses to landslide, etc, it is necessary to secure residents safety by evacuating to safe area temporarily. This chapter, will elaborate plan for evacuation measures, such as dissemination of evacuation preparedness information, evacuation guidance or order, advice for evacuation /transfer, opening of evacuation site.

10.1 Announcement of Evacuation Warnings

Responsible Agency:	Kodim
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In occurrence of disaster, it is necessary to protect human life from disaster and prevent spreading of damages, by following procedures of evacuation (represent evacuation preparedness information, evacuation guidance and order).

Type of Warnings	Description
Alert II Evacuation Preparedness Information	This warning is for elderly and handicapped resident. These people need more time to evacuate, so that information on risks of disaster occurrence should be announced several days before prepare for evacuation
Alert I Evacuation Guidance	When disaster occurs or high risk of occurrence of disaster, evacuation warning is announced to community
Evacuation Order	Devastating disaster occurs or high risk of occurrence of devastating disaster, evacuation order is announced to community. This order is stronger than Evacuation Guidance

1) Decision Criteria of Evacuation Warnings

1. When landslide is occurred or there is risk of occurrence, and anticipation to danger that could cause casualties
2. When flood occurred, or there is risk of occurrence, and anticipation to danger that could cause casualties
3. By condition of other types of disaster related to rain and storm which considered dangerous by head of Rupidalops PBP

2) Announcement of Evacuation Preparedness Information and Person who give Evacuation Warning and Order

When there is danger on resident life, Bupati will announce warning to residents in the area, or in case of emergency, will order evacuation. However, if Bupati is absent or cannot execute his duties, by following order, substitute can act on behalf of Bupati and have the same authority to give evacuation warnings.

1. Vice Bupati
2. Economics and Development Assistant
3. Head of National Unity Agency

(1) Substitution by Supporting Organizations

When there was upcoming danger due to occurrence of disaster, and no time for asking Bupati decision, or Bupati is absent, any related organization could substitute authority of Bupati for giving evacuation warnings to secure lives of residents.

Those supporting agencies are:

- Transportation Agency (related to BMG)
- Irrigation Agency (related to the increase of water level in river)
- Public Work Agency (related to area condition)

After announcement, related organizations who gave evacuation warnings, will report to Rupusdalops PBP promptly.

(2) Substitution by Governor

Due to devastating disaster, if most of roles of Rupusdalops PBP in Kabupaten cannot be implemented, Governor has power to take over all or part of authorities of Bupati. Governor will announce beginning and end of the take over. When Governor substitutes the role of Bupati, Governor will report to Bupati about the take over. Then whenever Bupati have recovered and could execute his duty, Governor will over the roles to Bupati immediately.

3) Contents of Evacuation Warnings

Person who announced evacuation warnings will warn or order evacuation by clearly mentioning the following items to community.

1. Reason of necessity of evacuation
2. Target area of evacuation guidance or order

3. Location of Evacuation Area
4. Evacuation Route
5. Caution Points for Evacuation

4) Deliverance of Evacuation Warnings

Deliverance of evacuation warnings is done by radio communication, mosque loudspeaker, car loudspeaker, and traditional emergency bell (Kenthongan).

5) Reporting, and etc

(1) Report to Related Organizations

When Bupati or related organizations announced evacuation warnings, the situation should be reported to Governor and other related organizations.

(2) Dissemination to Community

When evacuation warnings are announced or received notification that other related organizations gave evacuation warnings, the situation should be disseminated to community by using communication system of PEMKAB. Moreover, when evacuation warnings are announced latest situation will be informed to community.

6) Announcement of Evacuation Warnings

Bupati will announce evacuation warnings when there was emergency condition. He will announce immediately and report to Governor.

10.2 Set up of Alert Area

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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When disaster occurs, or will occur immediately, in order to protect human lives from disaster, and prevent spreading of damages, alert status is determined. Alert Area is configured and strictly limited or prohibited access to the Alert Area except personals engaged for emergency response activities, or order to leave from the Alert Area.

1) Announcement to Set up of Alert Area

Measure to set up of Alert Area is ordered by Bupati. However, if Bupati is absent or can not order for set up of Alert Area, by following order, substitute can act the same as Bupati and have the same authority to set up of Alert Area.

- | |
|--|
| <ol style="list-style-type: none">1. Vice Bupati2. Economics and Development Assistant3. Head of National Unity Agency |
|--|

(1) Substitution by Supporting Organizations

When there is upcoming danger due to disaster and no time for asking Bupati decision or Bupati, is absent, any related organization could substitute the authority of Bupati for set up of Alert Area to secure lives of residents.

Those supporting agencies/organizations are:

- Transportation Agency (related to BMG)
- Irrigation Agency (related to the increase of level water in river)
- Public Work Agency (Related to area condition)

After announcement, related organizations who gave evacuation warnings, will report to Rupusdalops PBP promptly.

(2) Substitution by Governor

Due to devastating disaster, if most of roles of Rupusdalops PBP in Kabupaten cannot be implemented, Governor has power to take over all or part of authorities of Bupati. Governor will announce beginning and end of the take over. When Governor substitutes the role of Bupati,

Governor will report to Bupati about the take over. Then whenever Bupati have recovered and could execute his duty, Governor will return the roles to Bupati immediately.

10.3 Advice for Evacuation and Transfer

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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1) Advice for Evacuation

1. Advice for Evacuation will be implemented by coordination with Muspika (head of kecamatan, police at kecamatan level and army at kecamatan level), public figure and religion figure for disaster risk management.
2. At schools and public facilities, administrator of the facility will implement evacuation derivation.
3. Evacuation will give priority to vulnerable groups and next to ordinary residents.
4. Evacuation staff will attempt to confirm security of evacuation route and indicate danger area to avoid unnecessary accidents on the way to evacuation site.
5. During evacuation community organizations for disaster risk management and neighbors and community groups cooperate to conduct disaster risk measures..
6. In order to avoid chaos and danger at evacuation sites, residents should advice to bring minimum personal items as possible.

2) Transfer

When refugees cannot evacuate themselves, evacuation should be done by using vehicles or other means of transportation, these refugees will be transferred.

3) Response for Persons Located in Public Space or Lodging Facility

(1) Response for Resident Located in Public Space or Lodging Facility

Administrators of public space and lodging facilities such as hotels, and department store, stadiums, etc, shall attempt to prevent confusion of refugee after occurrence of disaster, understand their facilities, and try to implement evacuation promptly and effectively. Moreover, inform the nearest evacuation sites and when disaster occurs give advice to nearest evacuation sites promptly.

4) Remote Area Evacuation at Devastating Scale Disaster

(1) Evacuation to neighboring Kecamatan or Kabupaten

When devastating scale of disaster occurs, and designated evacuation sites can not be occupied, and secured, Bupati will request and report to Governor for usage of evacuation sites in neighbor Kabupaten. In case of Kecamatan level, Camat will request and report to Bupati.

However, if in urgent condition, or absence of Governor, or disorder of communication system, and can not request and report to Governor or Bupati, Bupati or Camat can be requested to neighbor Kecamatan or Kabupaten directly.

At certain condition, there some kecamatans located in remote area and the only possible access is directing to neighboring Kabupaten; therefore, head of kecamatan, according to its hierarchy, can establish evacuation facility in neighboring kabupaten's area.

(2) Evacuation Method

Basically, transfer of refugee will be implemented by its Kabupaten, however, in case of devastating scale of disaster and disorder of transportation function could directly request to neighbor Kecamatan or Kabupaten and cooperate together for transferring these refugee.

Moreover, when land transport can not be used due to roadblock, etc, other means of transport such as sea transport and air transport should be considered as necessary measures with flexibility.

10.4 Set up of Temporary Evacuation Site and Its Management and Operation

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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1) Self Evacuation before Establishment of Rupusdalops PBP

When disaster occurs, and residents feels necessity of self-evacuation due to danger of damage, administrators of evacuation facilities will accept this refugee in order to secure safety of residents. Moreover, when administrators of these facilities accepted refugee, administrator shall report to National Unity Agency promptly.

2) Establishment of Temporary Evacuation Sites

(1) Criteria to Establish Temporary Evacuation Sites

When evacuation guidance, etc. is announced and necessity of self-evacuation is determined, Rupusdalops PBP in cooperation with administrators of facilities will discuss and check safety of designated temporary evacuation sites, then establish the facilities.

In urgent condition such as Rupusdalops PBP can not respond, even before decision by Rupusdalops PBP, administrators of these facilities can decide establishment of temporary evacuation facilities.

(2) Period of Establishment

Period of establishment of temporary evacuation sites will be decided by considering condition of damage, emergency houses reparation, and construction of temporary housings. However, period can be extended by discussion with National Unity Agency and Facility Administrators.

3) Acceptance of Evacuation Sites

(1) Target Occupants

1. Residents who suffered from damage to their houses, and lost their living spaces
2. Residents who suffered from damage to their houses, and necessary to evacuate promptly
3. Residents who may suffer from damage due to disaster and need to evacuate promptly
4. Persons who visited the area temporary and can not return to their own living area
5. Persons who has difficulty of living due to disaster

(2) Advice for Evacuation

Staffs of PEMKAP, Muspika, public figure and religion figures for Disaster Risk Management will cooperate and accept refugee to evacuation sites.

The following remarks must be considered as follows;

1. Giving confirmation of safety of evacuation routes and prohibition to enter danger area. Especially for nighttime evacuation, try to evacuate with special care such as utilization of lights, etc.
2. Installing signboard of evacuation route that easy to follow either at noon or at night as well as installing dangerous sign along the evacuation route
3. Priority of evacuation is decided and implemented by discussion with facility administrators in advance.
4. Try to evacuate in household unit who has person in vulnerable group

4) Management and Operation of Temporary Evacuation Sites

Due to limitation of staffs in PEMKAB, they can not be assigned in each evacuation sites, and responsible persons for each evacuation facilities will be its administrators. Therefore, actual management and operation of temporary evacuation sites shall be implemented by refugees themselves. For this reason, the situation shall be disseminated to residents and try to understand their roles in evacuation sites, by training leaders of community organizations for disaster risk management.

However, if the condition of community resourcees in evacuation site were low, management of evacuation facilities would become responsible of PEMKAB in order to have good management.

(1) Management and Operation Body of Evacuation Sites

Management and Operation of Temporary Evacuation Sites are implemented by administrators of facilities. However, actual management and operation will be implemented by Community Organizations for Disaster Risk Management and local residents. Refugees in each evacuation sites should formulate Committee for Operation of Evacuation Sites.

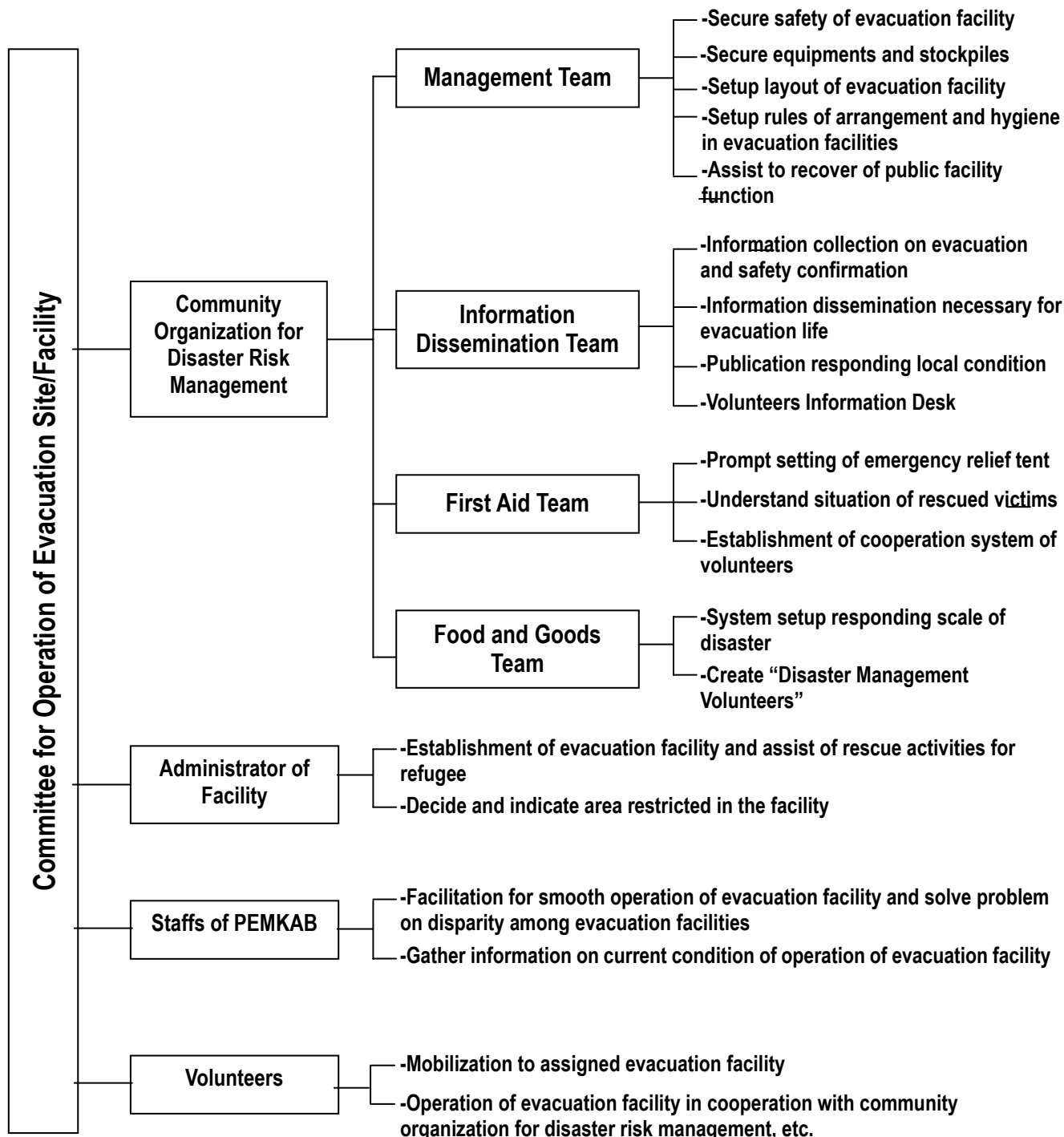
(2) Fundamental Role of Committee for Operation of Evacuation Sites

Role of Committee for Operation of Evacuation Sites are as follows;

1. Information Dissemination from Rupusdalops PBP
2. Safety Confirmation of Residents, Preparation of List of Refugees
3. Discussion, Decision, Total Coordination of Aspects related to Operation of Evacuation Sites
4. Preparing Rules in Evacuation Life (Clean, Treatment of Garbage, Sanitation, Inquiry from Outside) and comprehensive implementation of the rules so that orderliness in evacuation sites can be achieved.

(3) Composition and Role of Committee for Operation of Evacuation Sites

Committee for Operation of Evacuation Sites is formulated by Community Organizations for Disaster Risk Management, Administrators of Evacuation Sites, Staffs of PEMKAB, Volunteers, etc, and each role is as follows;



(4) Role of Evacuation Sites

Evacuation Sites, establish not only for accepting refugee, but also for supporting residents when urban malfunction occurs due to disaster, and as for regional disaster management base, evacuation sites have following roles;

- Distribution and receiving base of Water, Foods, Commodities and other materials supports. However, if the supports are obtained in big amount, it must be received through SATLAK PB due to unavailability of sufficient warehouse in evacuation facility and in order to avoid rapid traffic in evacuation site.
- Base of Medical Treatment/Aid
- Base of Information Dissemination/Transmission

(5) Report on Conditions of Evacuation Sites

Reports on condition of evacuation sites are done at establishment of evacuation sites and at its operation. Contents of report and contacted agencies are as follows;

A. At Establishment of Evacuation Sites

RUPUSDALOPS PBP will report to SATKORLAK PB and related organizations promptly. In case of emergency, administrator of evacuation facility will promptly report its action to RUPUSDALOPS PBP, and RUPUSDALOPS PBP will report to SATKORLAK PB and related organizations.

B. At Operation of Evacuation Sites

Administrators of evacuation site will report to RUPUSDALOPS PBP when evacuation action completes the first stage on number of refugee, health condition of refugee, and other necessary information. Furthermore, administrators will report to RUPUSDALOPS PBP on condition of evacuation sites, once a day and RUPUSDALOPS PBP will summarize collected information (mainly number of refugee) and report to SATLAK PB and related organizations.

5) Environmental Considerations of Evacuation Sites

(1) Considerations on Medical and Health Care

Understand information on refugee condition at evacuation sites, as well as necessary medical and health care, which needed to be improved. Moreover, if evacuation life continues for longer period, doctors and nurses will be dispatched for management of health care activities. For PTSD treatment, if necessary, attempt to send counselors to evacuation sites.

(2) Health Care of Refugee

Doctors and Nurses will visit evacuation sites for advice on health care and nutrition consultation, based on condition, refugee with bad condition will be delivered to hospitals.

(3) Response for Long Term Evacuation Life

If evacuation life continues for longer period, other than procurement of emergency commodities, attempt to procure televisions, air conditioners, refrigerators, cooking equipments, vacuums, etc., to support refugee life. Moreover, at open spaces or parks, water supply for shower, washing etc. shall be installed, and keep for hygiene control.

(4) Privacy Protection

In accordance with long evacuation life, attempt to keep their privacy as much as possible to reduce stress on evacuation life.

(5) Response to Victims outside Evacuation Facilities

If all disaster affected people cannot be accepted at evacuation sites, some of refugees stayed at open spaces and park in tents, these refugee also need special attention for supplying commodities and other facilities.

6) Consideration for Vulnerable Groups (Especially for Elderly and Handicapped)

- For preparation on evacuation guidance and order, evacuation preparedness information will be disseminated and vulnerable groups who will take longer time will start evacuation action to designated evacuation sites.
- PEMKAB and Administrator of facilities will cooperate with Community Organization for Disaster Risk Management on safety check and evacuation measures of vulnerable groups.
- For securing life environment at evacuation facilities, and acceptance in temporary shelters, with cooperation of Social Welfare Agency, Volunteers and Welfare Centers, following points will be paid attention;
 1. Designation of location for vulnerable groups and conducting prompt evacuation
 2. Transfer of staff from welfare centers to community who needs special care such as bedridden elderly, etc.
 3. Designation of Welfare Centers as special evacuation facilities to accept persons who need special care
 4. Utilization of Welfare Centers
 5. Secure life environment at evacuation sites and procurement of wheel chairs

6. Understanding health condition at evacuation sites
7. Provision of Mental Care Center like PTSD
8. Special information to vulnerable groups
9. Priority acceptance in temporary shelters

CHAPTER 11. RESCUE/AID MEASURES

In occurrence of big disaster, many disaster-affected people will lose their cooking equipments including food supply itself and no availability of lifeline functions due to collapse of houses. Moreover, disaster affected people may not get their daily food in shops or markets because of unusual condition of big disaster. Therefore, it will be necessary to supply water, food and daily commodities to disaster affected people to maintain social stability.

It is necessary to conduct cleaning of huge volume of waste and debris generated by big disaster and also necessary measures shall be taken to prevent epidemics in damaged area. Medical aid for injured people and rescue and search operation for missing people are also important activities. Based on above points, following items are planned.

11.1 Food Provision

<i>Responsible Agency:</i>	<i>Social Agency, Indonesian Red Cross</i>
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Emergency food services will be provided to disaster affected people and rescue operation staffs by using emergency food stock and local procurement.

1) Conditions of Emergency Food Service

Conditions of emergency food service are, 1) to support refugee, 2) to supply food for emergency rescue operation staffs.

2) Target of Emergency Food Service

Emergency food service will be provided to 1) refugee lived in temporally evacuation site, 2) people who can not cook by themselves due to damage of houses and 3) emergency rescue operation staffs through public kitchen system.

3) Term of Food Service

Emergency food service will be started at the day of disaster occurrence and ended at the day of no necessity of this service.

4) Procurement of Foods

Necessary foods such as rice, noodles, instant foods, milk and sugar, etc. will be procured at possible local market.

5) Food Stocks

Emergency food should be stocked at disaster management center such as Kabupaten office, Kecamatan office and related agencies such as Indonesian Red Cross.

6) Transportation

Emergency transportation vehicles will be prepared by Transportation Agency of Kabupaten to distribute food to necessary sites.

7) Place of Emergency Food Service

Emergency food will be serviced at evacuation sites. Those who can not access to evacuation site such as elderly or handicapped shall be distributed through volunteer or community network.

11.2 Water Provision

<i>Responsible Agency:</i>	<i>Regional Drinking Water Company</i>
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Emergency drinking water supply will be conducted to disaster affected people.

1) Minimum Supply

Emergency drinking water will be supplied 3 liters as a target for one person per day at minimum volume.

2) Term of Supply

Emergency drinking water supply will be started at the day of disaster occurrence and ended at the day of no necessity of supply.

3) Place of Water Supply

Emergency drinking water will be supplied at designated sites such as temporary evacuation site and disaster management center.

4) Water Supply Method

Emergency drinking water will be supplied by water tank truck at designated sites and its distribution time according to water distribution schedule. Those who can not access water supply site such as elderly or handicapped will be distributed through volunteer or community network.

11.3 Daily Commodity Provision

<i>Responsible Agency:</i>	<i>Social Agency, Transportation Agency</i>
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Daily necessary commodities such as clothes, blanket, kitchen wears, soaps, etc. will be supplied those who have lost their own daily necessary materials due to damage of residential house by big disaster.

1) Implementation Organization

Social Agency will be the responsible agency of daily commodity supply to disaster affected people.

2) Term of Commodity Supply

Daily commodity supply will be started at the day of disaster occurrence and ended at the day of no necessity of supply.

3) Procurement of Daily Commodities

Daily commodities will be procured by emergency stocks and purchase at local market under the management of Social Agency. All procured commodities will be stocked at disaster management center in Kabupaten and distributed to necessary evacuation sites.

4) Management of Commodities

Officer of Social Agency have a responsible to manage all procedure commodity.

5) Transportation of Commodities

Transportation Agency shall prepare necessary logistics to transport daily commodities from storage place to necessary evacuation sites. Items and volume of commodities shall be recorded before transport to distribution sites. All distribution data shall be listed and reported to head of Rupusdalops through Social Agency.

6) Distribution of Commodities

Daily commodities shall be distributed to each refugee at temporary evacuation site under a management of evacuation site manager. The commodities will be also distributed to those who requested necessary commodity supply to Social Agency (Social Welfare) due to poor living condition by disaster damage.

11.4 Acceptance of Goods from outside Disaster Affected Area

<i>Responsible Agency:</i>	<i>Social Agency</i>
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In order to supply necessary daily needs to refugee, Social Agency will accept aid materials from outside of disaster affected area.

1) Acceptance of Aid Materials

Necessary list of aid materials for refugee shall be prepared based on request from related agencies. Contents of material list, address to send and term of collection will be determined and disseminated to public through mass media.

2) Acceptance Place of Aid Materials

Designated storage place by Social Agency will be the first place for acceptance of aid materials from outside of disaster affected area. All aid materials will be transported by air or land transportation system.

3) Distribution of Aid Materials and Its Management

All accepted aid materials would be classified and listed according to accepted date, volume, distribution day, items, place, volume, etc. under management of responsible officer at storage site.

11.5 Rescue, First Aid, Medical Treatment Measures

<i>Responsible Agency:</i>	<i>Health Agency</i>
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1) 1. Rescue, First Aid System

(1) Principle of Activity

Rescue and first aid activities shall be operated based on following principles.

- Life saving is the first priority in any case.
- Fire extinguish and related life saving is high priority activity.
- Effectiveness of rescue operation shall be considered to save more life.
- Application of triage for victims to be determined by treatment priority.

(2) Information Collection

Necessary information for rescue operation shall be collected as much as possible through related agencies such as fire fighting, police, community, and community information network. Attention shall be paid to hospital, large shopping center, hotel, theater and related buildings.

2) Medical Aid System

Medical Aid team shall be organized in Health Agency to collect information for emergency medical support, take coordination between hospitals for acceptance of injuries and dispatch medical aid team to necessary place. Medical Aid team will work in cooperation with local doctor's association. Main task of this group shall be as follows.

(1) Information Collection

Damage information for medical facilities shall be collected by telecommunication network such as hospitals, clinics and related facilities. Activity information of medical facilities shall be collected such as doctor's activity including their staffs, insufficient medicine and medical equipments and available beds.

(2) Open of Medical Aid Service Spot

Medical aid service spot shall be opened at neighborhood of disaster affected area using existing medical facilities under coordination by Medical Aid team. Necessary medical team and materials will be provided by Health Agency.

(3) Procurement of Medicines and Equipments

Necessary medicines and equipments for emergency medical aid will be supplied by using available stocks of hospitals and clinics. Procured medical materials shall be distributed by Health Agency to medical aid service spot.

(4) Dissemination of Medical Aid Service Information

Medical aid service information such as care center, hospitals shall be disseminated to community through announcement by Health Agency.

(5) Cooperation with Outside Medical Facilities Outside Kabupaten Jember

In case of over capacity of existing medical treatment in Kabupaten Jember is estimated due to huge scale of disaster, outside medical function shall be utilized in cooperation with provincial Health Agency in Surabaya. Heavily injured patients who need an integrated care will be transferred to outside hospitals from disaster damaged area by special transportation such as military helicopter. Request of medical support team to outside medical functions will be also made through coordination by Health Agency of Kabupaten Jember.

(6) Open of Supply Center for Medical Aid Material

Supply center for medical aid material shall be opened to classify and manage necessary medicines and related medical materials. In cooperation with pharmacist, necessary medicines and related materials shall be distributed to request sites.

11.6 Procurement of Medicines and Medical Equipments

<i>Responsible Agency:</i>	<i>Health Agency</i>
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In order to response shortage of drags, medicines and medical equipments, provincial health agency will be requested for procurement of these materials.

11.7 Health Care and Hygiene Measures

<i>Responsible Agency:</i>	<i>Health Agency</i>
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1) Hygiene Measures in Disaster Affected Area

Hygiene measures shall be taken in disaster affected area to maintain sanitary condition and prevent epidemic infection. Public toilet space and shower space shall be prepared in evacuation site.

2) PTSD

Mental care shall be given to those who have heavy stress or mental damage such as PTSD by natural disaster. Medical doctors and volunteers in cooperation with Health Agency shall work together to support children, elderly and community for recovery from mental damage.

11.8 Solid Waste Treatment Management

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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In occurrence of big disaster, large volume of solid waste will be generated by building collapse. It is necessary to remove solid waste from damaged site and clean the area for reconstruction. Waste disposal site shall be prepared. Collected solid waste shall be divided according to its type of material before dumping. Woods, bamboo and related waste should be incinerated at disposal site or reutilized for reconstruction of local house. Other solid waste should be disposed as landfill.

11.9 Human Waste Treatment Management

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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Human waste management will be necessary at evacuation sites. Temporary toilet shall be prepared for refugee. Waste shall be treated properly as sanitary landfill.

11.10 Epidemic Prevention Measures

<i>Responsible Agency:</i>	<i>Health Agency</i>
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In occurrence of big disaster, epidemic prevention measures should be taken in disaster affected area, especially for evacuation site. It is very important to manage and control health and sanitary condition for refugee at evacuation site and damaged area. Health check is necessary for refugee. If patient is found at evacuation site, necessary treatment procedures shall be taken immediately soon such as transporting to hospital and give medical care. Following procedure shall be taken to control and prevent epidemics in disaster affected area.

- Conducting fast check of patient or carrier and take necessary preventive measures in disaster affected area and evacuation site.
- Conducting disinfection in disaster affected area and evacuation site to prevent epidemics if necessary.
- Conducting vaccination.
- Dissemination of necessary information and instruction for epidemic prevention in cooperation with community activity.
- Preparing necessary chemical materials and equipments for disinfection of the area by related agency.
- Hospital shall be designated beforehand to accept patients of epidemics.

11.11 Searching for Missing Victim and Casualties Treatment

<i>Responsible Agency:</i>	<i>SAR, Health Agency</i>
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1) Searching for Missing Victim and Casualties

Search for missing victim in disaster area shall be conducted by Search and Rescue Agency from Surabaya and Jember. Under management of Search and Rescue Agency, navy and marines will join in searching activity. Community will also join search work for missing victim under head of village responsible.

If missing person is found still in alive, then he will be transported to designated hospital by possible transportation system such as vehicles, or even a helicopter to give necessary medical treatment. Personal data such as address, name, age, male or female and contact place will be recorded as for reference.

If missing person is found dead, then he will be transported to the nearest medical care center (POST). After identification check and cleaning the dead body by medical doctor, he will be transported to designated hospital. Finally, family or relatives will check and recognize all identifications at hospital. Then dead body will be transferred to family for funeral.

2) Preparation of Charnel House

Preparation of charnel house will be necessary in case of big disaster. Large space such as mosques or gymnasiums shall be designated in close sites to disaster affected area. Selection of candidate buildings shall be made before hand as a part of disaster management plan. In charnel house, medical check, cleaning dead body, identification by family and transfer service will be conducted.

3) Information Dissemination to Community

Missing victims who have not been found, could be searched through photograph, body characteristics, personal belongings and clothes. This information will be disseminated to community through local community network or Tracing and Mailing Service (TMS) by Indonesian Red Cross.

CHAPTER 12. SCHOOL DISASTER MANAGEMENT MEASURES

In occurrence of big disaster, safety measures for pupils and students, school facilities and provision of temporary school shall be planned as follows.

12.1 Management of School Facilities

<i>Responsible Agency:</i>	<i>Education Agency</i>
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After occurrence of big disaster, each school principals have to assure safety of pupils, students, teachers and staffs. Moreover, each school principals have to check damage of school facilities and report its existing condition of school facilities to Education Agency Kabupaten through Kabupaten government. Based on report submitted by Kabupaten government, Education Agency should compile a list of damaged school in disaster affected area and prepare an emergency education plan.

12.2 Measures for Students and Pupils

<i>Responsible Agency:</i>	<i>Education Agency</i>
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1) Evacuation for Pupils and Students

Each school principals have to take proper evacuation measures for pupils and students when big disaster occurred during school time according to school disaster management plan. After checking school and surrounding area comprehensively, pupils and students should return to their parents under direction of class teachers.

If it is difficult to return pupils and students to their parents due to damage situation, they should be evacuated to preliminarily designated evacuation site. After felt safe situation, pupils and students should return to their home. It is necessary for teachers to contact parents directly to secure safety of pupils and students especially those who have handicap or need special care.

2) Check safety of Pupils and Students

Each school principals have to check safety of pupils and students if disaster occurred during holiday or nighttime in cooperation with available teachers by telephone.

3) Temporary School

In case of school facilities have heavily damaged, Education Agency shall prepare temporary school at damaged area using available building space. Education Agency will provide temporary teachers and school staffs for damaged area.

Each school principals shall prepare temporary education schedule and programs. After completion of total restoration of school facilities, school principals should inform schedule to return to ordinary school.

4) Exemption of School Payment

School payment will be exempted for those pupils and students who are suffered from disaster. School principals have to check damage situation and take necessary exemption procedure.

12.3 Procurement and Provision of School Supplies, etc.

<i>Responsible Agency:</i>	<i>Education Agency</i>
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Each school principals have to check damage condition of teaching materials such as textbook, notebook, pencils etc. after occurrence of and report its existing condition to Education Agency through kabupaten government. Based on report submitted by kabupaten government, Education Agency will collect and prepare necessary teaching materials. These materials will be provided to pupils and students in disaster affected area through local office of Education Agency.

12.4 Management of Education Facilities

<i>Responsible Agency:</i>	<i>Education Agency</i>
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Management of education facilities such as library, museum and gymnasium have to take necessary safety measures in accordance with disaster management manuals.

CHAPTER 13. RESIDENCE AND BUILDING MANAGEMENT

Residential buildings will be damaged by big disaster and there will be many people will lose their houses. In order to support these refugees, construction of temporary houses and reparation of damaged houses shall be planned as follow.

13.1 Investigation of Damaged Buildings

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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1) Preparation

Damage information will be collected to understand volume of damage. Preparation of surveyors and survey tools, and announcement of damaged house investigation will be disseminated by Public Works Agency.

2) Survey Method

As a primary survey and evaluation, two surveyors will conduct visual observation from outside of the house. Based on the survey, detailed survey for certain buildings will be reported by construction experts.

3) Preparation of Damaged Houses List

Survey results will be compiled into damaged houses lists by Public Works Agency and utilized for necessary verification in future.

13.2 Survey of Damaged Residential Land

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Damaged residential land will be surveyed to protect from secondary damage and secure safety of residents in disaster area.

1) Preparation

Damage information of residential land will be collected to understand volume of damage. Preparation of surveyors and survey tools, and announcement of investigation will be disseminated by Public Works Agency.

2) Survey Method

As a primary survey and evaluation, a team of three surveyors will conduct visual observation on damaged land. Based on request of residents, technical advice for restoration or rehabilitation of damaged land will be recommended to protect from secondary damage.

3) Announcement of Survey and Evaluation

Result of survey and evaluation will be announced and displayed at disaster area to protect or reduce the secondary damage.

13.3 Construction of Temporary Housing and Emergency Restoration of Damaged Buildings

Responsible Agency:

Public Works Agency, Indonesian Red Cross

Temporary housing will be constructed for those who lost their house and unable to reconstruct by their own fund due to disaster damage. Emergency restoration of damaged houses will also be conducted to secure social stability.

1) Implementation Organization

SATLAK (Public Works Agency) and Community Empowerment Board are the responsible agency for construction of temporary housings, restoration and rehabilitation of damaged houses in disaster affected area.

2) Construction of Temporary Housing

Temporary housing will be provided to those with several criteria such as, (1) total collapse or burning of residential house (2) not having residential house, (3) elderly or handicapped who do not have residential house.

Public Works Agency and Social Agency shall work together to provide temporary housings to refugee.

3) Location of Temporary Housing

Location of temporary housing shall be selected at safety area, close to existing commercial facility, school, and hospital. Number of temporary housing will be decided by Bupati of Kabupaten Jember.

4) Emergency Restoration and Rehabilitation of Damaged Houses

Public Works Agency and Community Empowerment Board will conduct and support emergency restoration and rehabilitation of damaged houses in disaster affected area. Light damaged houses will be the target for restoration and rehabilitation. Emergency restoration and rehabilitation shall be completed within one month after occurrence of disaster.

CHAPTER 14. EMERGENCY MEASURES FOR LIFELINE

If daily utilities such as water, sewerage, electricity, telecommunications, etc. were damaged by disaster, prompt and precise emergency response shall be planned as follows;

14.1 Recovery Information of Lifeline

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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As emergency response on daily utilities such as water, sewerage, electricity, telecommunications, each utility suppliers attempt to establish appropriate rehabilitation team and rehabilitate damaged facilities promptly.

Moreover, since these utilities are related need collected information sharing on damage condition and rehabilitation team allocation for comprehensive and effective rehabilitation by coordination among government, related organizations, and utility suppliers.

Furthermore, utility suppliers attempt to prevent secondary disaster by publication and dissemination of information on damage condition, recovery condition, safety confirmation, and release anxiety of users.

14.2 Water Supply Facility

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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1) Damage Investigation

At the occurrence of disaster, damage investigation should be implemented with the following order. After identifying damage condition, appropriate water supply plan and emergency recovery plan are formulated.

1. Facility for Water Intake, Raw Water Transmission, Water Purification, and Transmission Pipe
2. Water Reservoir, Pumping Station, Distribution Pipe
3. Service Pipe, Water Distribution Facility

2) Emergency Recovery

Emergency Recovery activities are implemented and led by head of National Unity Agency with related suppliers.

(1) Facility for Water Intake, Raw Water Transmission, Water Purification

Due to rain and storm related disasters, risk of damages to water supply facilities is considered low, however, in case of suffering from damages, prompt recovery work should be implemented with full efforts to keep water supply provision.

(2) Facility for Water Distribution

After damage investigation, considering condition of each purification plants and capacity of water reservoirs, pipes with no damage will remain to support smooth water supply by changing distribution route. Then, based on priority from upper stream of main pipes, recovery works are implemented. If level of water leakage does not cause secondary disaster, then it considers as low priority and will be repaired after fixing priority points.

(3) Service Pipe

When damaged points of service pipes causes trouble on water flow and cause secondary disaster, priority emergency recovery work should be implemented.

14.3 Electric Supply Facility

<i>Responsible Agency:</i>	<i>National Electric Company</i>
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If electric supply facility is damaged due to occurrence of disaster, prevent from secondary disasters and implement emergency recovery activities promptly, and attempt to secure continuous electric supply in disaster affected area.

1) Damage Investigation

At the occurrence of disaster, damage investigation is implemented. After identifying existing damage condition, emergency recovery plan is formulated.

2) Emergency Recovery

(1) Basic Policy

A. Establishment of Emergency Response Post

Apart from Rupusdalops PBP, to implement prompt emergency recovery activities, Emergency Response Post is established.

B. Principal in Smooth Provision of Electric Supply and Risk Preventive Measures

Considering demand of electric supply, in principal supplier should continue supplying even in the occurrence of disaster and implement emergency response activities smoothly. If there is requests from police and fire fighting, etc., risk prevention measure such as stopping supply of electricity will be implemented.

C. Coordination among Related Organization

Based on request to Rupusdalops PBP, staffs are dispatched to have direct communication and coordination with related organizations.

(2) Emergency Response

- In temporary works due to disaster damage, considering there were permanent restoration work and according to its urgency, temporary works are implemented promptly and appropriately.
- Restoration of electric supply facilities is implemented by considering disaster condition, damage condition, and difficulty level.
- Supply electricity to the facilities related with emergency response activities will be given high priority.

- If damage scale is large, conduct coordination between staffs of electric company from peripheral Kabupaten and related companies to formulate emergency recovery support team and implement emergency recovery works.

3) Measures taken by PEMKAB

(1) Cooperation and Support

In case of serious damage to electric supply facilities and there is support request form National Electric Company, PEMKAB will coordinate and give support as appropriate.

(2) Publication to Community

PEMKAB will publish condition of electric supply facilities to the community, and if the following events are found, community should report to nearest National Electric Company.

1. Electric cable is cut and flagging to road surface
2. Trees, TV antennas, etc are falling down.
3. Sparks, sounds, smokes are detected form electric supply facilities
4. Electric poles are collapsed.

14.4 Telecommunication Facility

Responsible Agency:	TELKOM
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Secure information transmission system due to occurrence of disaster, and collect and disseminate the information.

In order to implement emergency response activities smoothly and effectively, coordinate closely with related organizations.

1) Damage Investigation

At the occurrence of disaster, damage investigation is implemented. After identifying existing damage condition, emergency recovery plan is formulated.

2) Emergency Recovery

(1) Basic Policy

A. Establishment of Emergency Response Post

Apart from Rupusdalops PBP, to implement prompt emergency recovery activities, Emergency Response Post is established.

B. Principal in Smooth Provision of Telecommunications Service and Risk Preventive Measures

Telecommunications for emergency response activities are indispensable for prompt and effective implementation. However, due to overflow of incoming calls to check safety of relatives and friend from outside disaster area, telecommunication is congested and important call can not be reached. Avoiding such congestion, TELKOM must control incoming calls in case of disaster.

C. Coordination among Related Organization

Based on request to Rupusdalops PBP, staffs are dispatched to have close communication and coordination with related organizations.

(2) Emergency Response

- In temporary works due to disaster damage, considering there were permanent restoration work and according to its urgency, temporary works are implemented promptly and appropriately.

- Restoration of telecommunication service facilities is implemented by considering disaster condition, damage condition, and difficulty level.
- Telecommunication service to facilities related with emergency response activities will be given high priority.
- If damage scale is large, conduct coordination between staffs from neighboring TELKOM office and related companies to formulate emergency recovery support team and implement emergency recovery works.

3) Measures taken by PEMKAB

(1) Cooperation and Support

In case of serious damage to telecommunication facilities and there was support request from TELKOM, PEMKAB will coordinate and give support as appropriate.

(2) Publication to Community

PEMKAB will publish recovery condition to the community.

CHAPTER 15. ACCEPTANCE PLAN OF FOREIGN ASSISTANCE

International assistance will be expected for large-scale natural disaster. Emergency rescue operations including search and rescue, medical services, construction and management of evacuation facilities, will be the first necessary items for disaster management. International aid teams will join immediately after occurrence of disaster. In order to accept international assistance for emergency operation, basic acceptance plan including information sharing with national and provincial organization and necessary procedures should be prepared.

15.1 Information Sharing with National and Provincial Organization

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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Assistance from various countries will be concentrated after occurrence of disaster. Most important subject is coordination. In order to accept foreign assistance smoothly and effectively, methodology and procedures for information sharing between Central Government and provincial/local government shall be established beforehand.

Responsible agency of disaster affected area shall collect damage information and transfer to related agencies both national and provincial/local government. In this damage information, necessary items for assistance shall be mentioned such as medical equipments, equipments for rescue operations, human resources, etc.

15.2 Acceptance of Foreign Assistance

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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Based on experiences of foreign assistance for disaster management in Indonesia, important lessons shall be reviewed and checked. When big disaster occurs, many countries will offer help and send assistance teams to disaster affected area. Local government shall accept teams and manage their activities. Coordination between countries assistance area and activities are most important responsibility of local government. Basic manuals and standard procedures for acceptance of foreign assistance for disaster management should be prepared.

Section 4: Post-Disaster (Rehabilitation and Reconstruction Plan)

Rain and storm related disasters sometimes cause extensive damages. Demolition of houses, land slide, flood, etc. caused by heavy storm, etc. is extremely disturbing for the resident's daily life and activities. Rehabilitation and Reconstruction Planning are management plans to be implemented by PEMKAB and related organizations/agency for recovering from damages as soon as possible, so the residents would be able to live normally everyday without any trouble.

CHAPTER 1. REHABILITATION PLAN

For Rehabilitation Managements, prompt recovery on daily life and facilities of disaster victims, industries, etc. are expected. PEMKAB plans, to return resident's lives back to normal by establishing service post, temporary housing management, emergency funding, etc. and so on.

1.1 Recovery Measures to Normal Life

<i>Responsible Agency:</i>	<i>Social Agency</i>
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1) Issuing Disaster Victim Certificate

People suffered form damage will receive aid from government, if disaster victims want to receive such aid; they are required to receive a Disaster Victim Certificate. Kabupaten Jember will formulate system to publish such certificate in the future.

2) Giving Aid for Daily life and Residence

(1) Permanent Housing Management

Supporting long term house rental by developing public housing for disaster victims, and as an alternative is by giving assistance for renting vacant private houses.

(2) Temporary Housing Guarantee

In rehabilitation process, by utilizing provision of temporary houses, give aid for daily life and guarantee safety for residence for certain period.

3) Establishing Disaster Inspection Post

Service post for disaster victims are established to cover many fields such as safety guarantee, clothing, and shelter, health, mental care, education, occupation, finance, etc, and perspective consultation to minimize their problems.

1. Based on disaster scale, if necessary Disaster Service Post will be established
2. To implement service promptly and appropriately to disaster victims, requires close coordination with related organizations
3. On service contents, damage condition, establish service concept with close coordination with related organizations

4) Aid for Mental Care and PTSD

In cooperation with Province, establish service post for victims having mental problem or PTSD suffered form disaster, and based on necessity, counselor, doctor, and nurse will be dispatched to evacuation facilities for consultation for these disaster victims.

5) Aid for Disaster Vulnerable Group

(1) Information Dissemination to Vulnerable Group

Started from disaster occurrence until reconstruction phase, to be able to support special care for vulnerable groups such as elderly and handicapped, etc., enforce coordination system of information gathering and transmission with organizer of social welfare facilities, and related organizations.

6) Management of Disaster Debris

To guarantee implementation framework of debris management from disaster, will be conducted planned collection/transfer, recycle and appropriate management/disposal.

7) Management of Emergency Fund

People suffered form damage will receive support form government, if Kabupaten Jember has such supporting system, they are expected indicate the system here. Also, National and Provincial System could also be indicated here.

(1) Distribution of Calamity Fund

How to distribute calamity fund is indicated here.

(2) Loan and Tax Exemption

To support disaster victims, Kabupaten Jember is preparing a system for low interest loan and tax exemption.

1.2 Rehabilitation of Public Facilities

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Rehabilitation are conducted on damaged public facilities so they could function again, and by considering the damage condition thoroughly, to prevent damage in future disaster, necessary actions such as reconstruction or improvement of facilities are implemented. In the implementation, depend on the level of damage, facilities with high priority and urgency are selected, then rehabilitation works are implemented.

The following Disaster Rehabilitation Works are implemented.

- 1) Public Work Facility Damage Rehabilitation Works
 - (1) River Damage Rehabilitation Works
 - (2) Road Damage Rehabilitation Works
 - (3) Park Damage Rehabilitation Works
 - (4) Port Damage Rehabilitation Works
- 2) Agriculture, Forestry, Fishery Facility Damage Rehabilitation Works
- 3) Water Supply Facility Damage Rehabilitation Works
- 4) Sewage Facility Damage Rehabilitation Works
- 5) Housing Damage Facility Damage Rehabilitation Works
- 6) Social Welfare Facility Damage Rehabilitation Works
- 7) Public Medical Facility and Hospital Damage Rehabilitation Works
- 8) Educational Facility Damage Rehabilitation Works
- 9) Other Public Facility Damage Rehabilitation Works

1.3 Declaration of National Disaster

<i>Responsible Agency:</i>	<i>Bupati</i>
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This section will be added after enacting Governmental Regulation regarding “Level of Disaster”.

CHAPTER 2. RECONSTRUCTION PLAN

In order to create disaster-resilient city the following basic concepts are formulated.

2.1 Gathering Relevant Information for Preparation of Reconstruction

<i>Responsible Agency:</i>	<i>Development Planning Board</i>
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1) Initial Consideration of Direct Character and Concept Criteria of Rehabilitation and Reconstruction at Urban Area

- For urban area, based on damage condition, existing infrastructure condition long term development plan, urban planning orientation, relevant officials suggestion, etc., depend on precise rehabilitation at disaster area, or to prepare aforethought urban reconstruction plan for constructing disaster resistance city requires appropriate time schedule. Furthermore, it is necessary to consider direct character and concept criteria of rehabilitation and reconstruction at urban area in advance.

2) Consolidation and Storage of Various Data

- For smooth reconstruction, various data, such as landscape, building, ownership, facility, underground facility, etc., are consolidated and stored, and backup system is also developed.

2.2 Basic Concept Formulation of Urban Reconstruction

<i>Responsible Agency:</i>	<i>Development Planning Board</i>
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1) Basic Concept of Urban Reconstruction

- Reconstruction policy at disaster area when region is annihilated by large scale disaster, and extensive damages on socio-economic activities, having consistency in urban structure and industry infrastructure, attempt to solve issues on mid to long term such as constructing more disaster-resilient city. To support aforethought reconstruction, by asking for comprehension from residents, reconstruction plan will be formulated. Furthermore, observing condition progress on emergency response and rehabilitation activities, Development Planning Board together with related agencies and organizations will start the preparation of reconstruction activities.
- City development towards urban reconstruction is necessary not only for present residents, but also for other residents in the future, therefore, residents are required to understand the importance of construction disaster-resilient city with sustainability. Furthermore, establishment of reconstruction committee for disaster damaged region including residents of the area, and formulate reconstruction planning. This process will be cooperated as best as possible between PEMKAB and local residents.

2) Urban Reconstruction Measures

(1) Basic Policy Formulation of Urban Reconstruction

In cooperation with Province, considering damage condition of each region, existing condition of basic infrastructure, long term development plan, urban planning orientation, etc., depend on the latest condition of reconstruction planning or formulate consideration of region reconstruction and announce the basic policy officially.

(2) Basic Planning Formulation of Regional Urban Reconstruction and Content Description

By gathering opinion from residents, Development Planning Board together with related agencies and organizations will formulate Basic Plan of regional Urban Reconstruction showing specific reconstruction management, such as reconstruction target, land use policy, development policy of urban facilities, basic policy of urban reconstruction, etc.

(3) Formulation of Temporary Urban Development Plan

Until completion of full-scale reconstruction, by implementing emergency repair of houses and construction of temporary shops, construction of temporary housings, etc., attempt to mitigate evacuation to other region and try to keep local community in the area, Development Planning Board together with related agencies and organizations will formulate Temporary Urban Development Plan.

KABUPATEN JEMBER REGIONAL DISASTER MANAGEMENT PLAN

PART 2 EARTHQUAKE DISASTER MEASURES



SATLAK PB KABUPATEN JEMBER

In cooperation with



JICA STUDY TEAM

Oriental Consultants Co., Ltd.
Asian Disaster Reduction Center

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(Rehabilitation and Reconstruction Plan)

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Section 1: GENERAL

(Basic Concept of the Plan)

CHAPTER 1. ELEMENTS COVERED IN THE PLAN

1.1 Objective of the Plan

SATLAK PB Kabupaten Jember collaborated with JICA Study Team aims to formulate Kabupaten Jember Regional Disaster Management Plan based on Law No.24 regarding Disaster Management enacted on 29th April, 2007. This plan clearly mentions whole picture of disaster management in chronological order, consists of Measures in Disaster Mitigation, Preparedness for Disaster, Emergency Response, Rehabilitation and Reconstruction. This plan aims to implement emergency response activity based on pre-prepared comprehensive plan, and reduce damages and save residents lives and their assets, as well as to maintain social order and public welfare from disaster.

1.2 Interrelations between National Disaster Management Plan and Regional Disaster Management Plan

This plan is interrelated with National Disaster Management Plan prepared by BNPB, and Provincial Regional Disaster Management Plan which will be formulated in near future.

1.3 Revision of the Plan

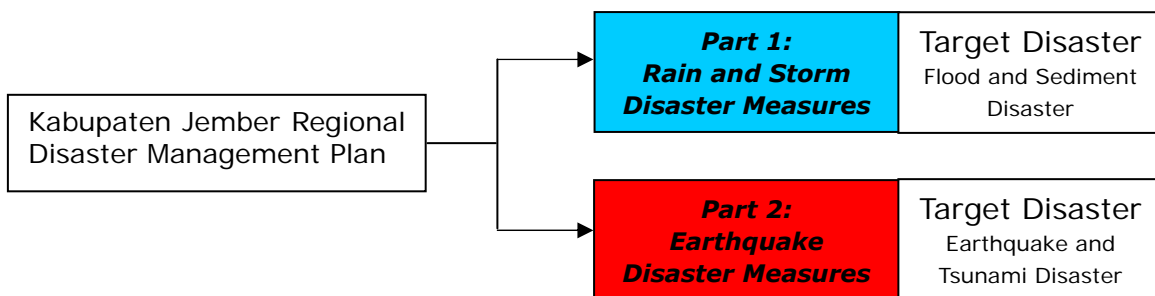
This plan is revised periodically and/or when required to keep efficiency of disaster management. In every revision, SATKORLAK PB should carefully investigate contents of the draft version of revised regional disaster management plan to keep the interrelations with disaster management plan in other area and in higher level.

CHAPTER 2. STRUCTURE OF THE PLAN

2.1 Structure of the Plan

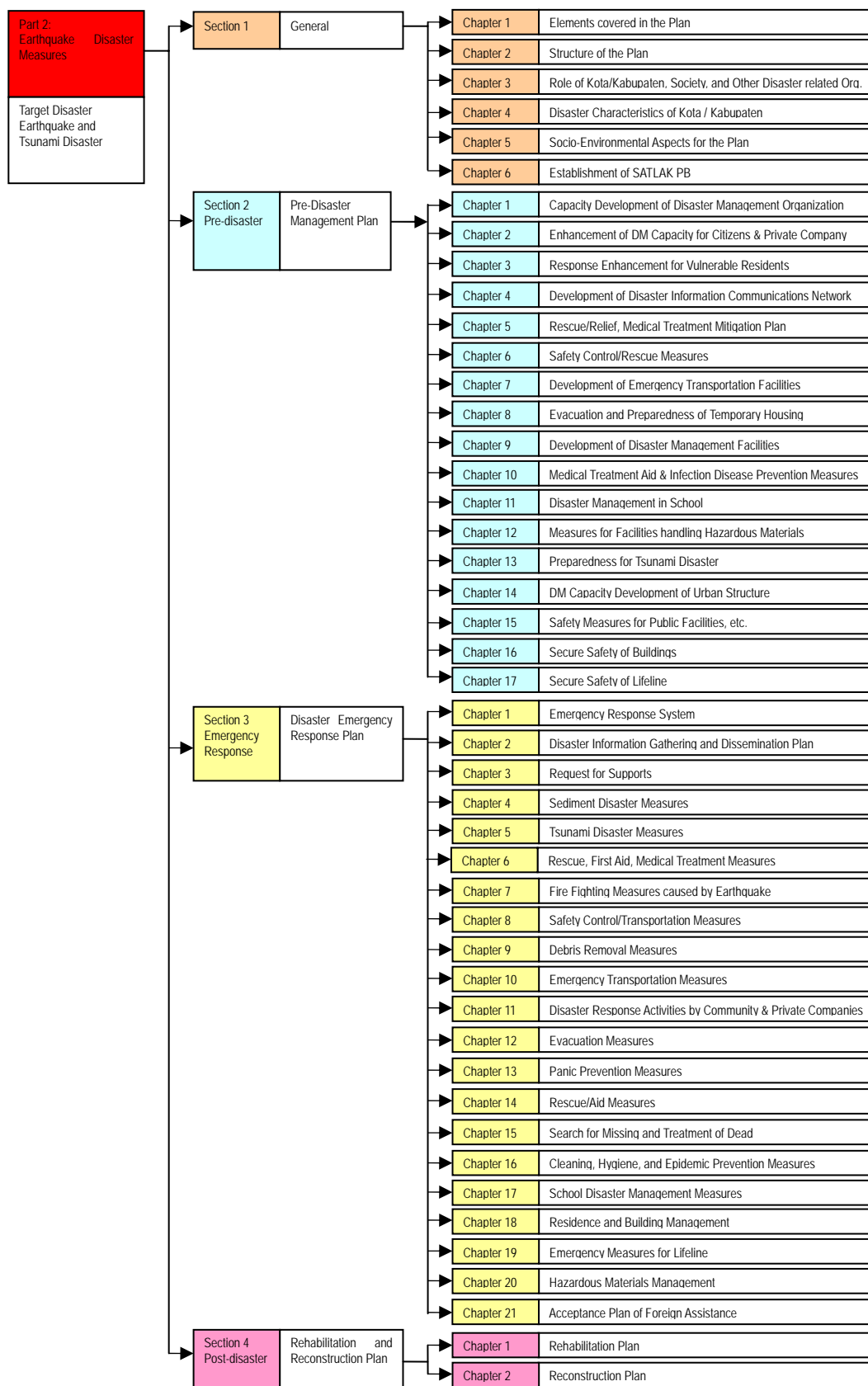
1) Composition of the Plan

This plan is to formulated as a basic plan to deal with possible disasters in Kabupaten Jember, and it composed of “Part 1: Rain and Storm Disaster Measures”, and “Part 2: Earthquake Disaster Measures”. This part of the plan contains “Part 2: Earthquake Disaster Measures”.



2) Contents of the Plan (Part 1: Earthquake Disaster Measures)

Contents of “Earthquake Disaster Measures” are as follows;



CHAPTER 3. ROLE OF KABUPATEN, SOCIETY, AND OTHER DISASTER RELATED ORGANIZATIONS

Kabupaten Government and disaster management related organizations have obligations to prevent occurrence of disaster, or mitigate damage, and for securing resident's life, and their assets.

3.1 Obligations of Kabupaten Jember in Disaster Management

The disaster management and refugee handling at local region through following actions/ implementations:

1. Kabupaten/Bupati as Unit Administrator Chief of the disaster management and refugee handling (SATLAK PB) is responsible for coordinating, leading, and controlling, the regional structural and non structural activities in implementing disaster management and refugee handling in Kabupaten/Kota area before, during, and after disaster and evacuation.
2. Camat as Operational Unit Chief of the disaster management and refugee handling (Unit Ops PBP) is responsible for coordinating the sub-regional structural and non structural activity in implementation before, during, and after disaster and evacuation in Kecamatan areas.
3. Chief of Village/Lurah as Hansip/Linmas Unit Chief is responsible to coordinate and control the village activity in implementation of disaster management and refugee handling before, during, and after disaster and evacuation in Village/Kelurahan areas..

3.2 Obligations of Disaster Management related Organizations

Disaster management related organizations have obligation to support and help activity to mitigate damage by prompt action and with close coordination with Kabupaten Jember in case of disaster occurrence.

CHAPTER 4. DISASTER CHARACTERISTICS OF KABUPATEN JEMBER

4.1 Natural Conditions

Kabupaten Jember is an area surrounded by other regencies and Southern Sea Shore with boundaries as follows:

- North : Kabupaten Bondowoso
- East : Kabupaten Banyuwangi
- South : Indian Ocean
- West : Kabupaten Lumajang and Probolinggo

Administratively, Kabupaten Jember are divided into 31 (thirty-one) Kecamatan and consists of 247 (two hundred forty seven) Villages and Kelurahan.

When relate to economic growth corridor of East Java, Kabupaten Jember is included in East Corridor which classified as developed area with production basis at premier sector (agriculture), especially for tobacco, plantation product and other agriculture products other than product of small industry with agricultural based, so that contribution in enhancing PDRB is advanced slowly and still requires financial aid from Central Government to increase their economical growth.

Most people of Kabupaten Jember are farmer which proven by the large amount of residents who domicile in the village. Average soil texture of Kabupaten Jember are farming and plantation soil, even capital of Kabupaten Jember is surrounded by plantation in north and east area which laid from west to east direction and from east to south direction, while west and south area is covered with farming. In paying attention to fertile plantation and farming soil in village area should be supported by adequate watering from river and tributary flow which across the village area, especially when rainy season comes, the water will overflow and fill those rivers.

Based on the condition of the fertilize soil and supported by many river and tributary in Kabupaten Jember, hence when rainy season comes it often caused the possibility of disaster occurrence, especially landslide disaster as well as flood that will damaged the government and community's buildings along with other properties. The disaster occurrence itself could be cause by natural condition as well as human being.

1) Geographic Condition

Kabupaten Jember has Argopuro Mountain (highest summit 3,072m) in the north, and Raung Mountain (3,328m) in the northeast, while in the south there are Tenggara Mountain Range (highest summit 1,223m) extended from east to west. The lowlands are spread in the southwest of this province, surrounded by Argopuro Mountain, Raung Mountain and Tenggara Mountain Range. Geographically, Kabupaten Jember can be divided into 4 areas

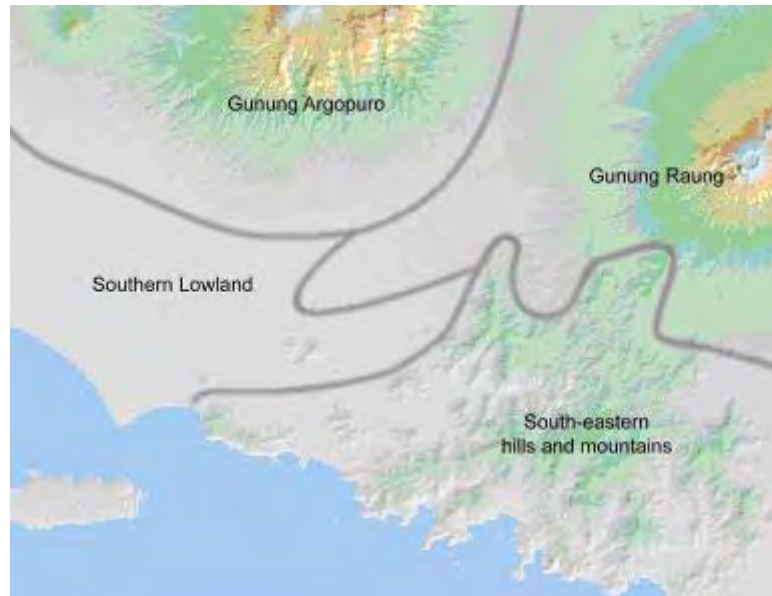


Figure 4.1.1 Geomorphologic Divisions in Jember

(1) Southern Lowland

The lowlands extend through the central west of Kabupaten Jember with altitude of 0-50m above sea level. The river plain in the central area was formed from Bedadung River and its tributaries. The western area comprised of fluvial sediment from Malang River and Bondoyudo rivers that flow from Argopuro Mountain. There are many tributaries and irrigation channel that forked from central part of downstream.

On coastal area, we could see sand dune with approximately 10 meters height, and in deeper part have approximately 5 to 9m height.

(2) Raung Mountain Slope

The western slope of Raung Mountain is part of Kabupaten Jember. Western part of Raung Mountain surface is very large and in the shape of horseshoe with several hills on top of it. Hills that dispersed in western part of Raung Mountain surface are known as the Ten thousand hills, or Bukit Sepuluh Ribu.

(3) Argopuro Mountain slope

The southern slope of Argopuro Mountain is a part of Kabupaten Jember. The summit of Argopuro Mountain has 5 distinctive shapes; the southern slope is an old volcano slope. The south-east slope of Argopuro Mountain is divided by several valleys so we could see the slope erosion and steep valley.

(4) South-eastern Hills and Meru Betiri Mountain Range

Rows of hills and mountains extended across the southern area of Kabupaten Jember and Kabupaten Banyuwangi at altitude 50~1,200m above sea-level.

2) Geology

Stratigraphic condition of Kabupaten Jember area is shown in Table 4.1.1.

Table 4.1.1 Geology of Kabupaten Jember

Geologic Age	Geology	Rock Type and Stratigraphy
Quaternary (± 2 billion years ago)	Alluvial Sediment	Fluvial Sediment
		Marine Sediment
		Debris flow Sediment
	Volcanic Products	Volcanic ash and thick Laterite
		Large Sediment Erosion from Raung Mountain
		Pyroclastic rocks from Raung Mountain
Tertiary (± 63 million – 2 million years ago)		Pyroclastic rocks from Argopuro Mountain
		Mandalika formation
		Puger formation
		Granodiorite and Dioraite
		Limestone from Merubetiri formation
		Sukumade formation
		Merubetiri formation
	Batuampar formation	

The oldest rock in this region is tertiary sedimentary rock which is distributed in the area at altitude 200~1200m of south-eastern mountains. It is solid, but seriously damage in the surface due to the climate The sedimentary rocks of the south-eastern mountains are volcanic blast of Argopuro Mountain. The periods differ according to the distribution area of the volcanic blast of Argopuro Mountain. As for the volcanic body, the west side is old and the hillside is separated by small valley and thick formed latosol. On the east side, lava and pyroclastic material blasted along the valley. Debris and clay of the valley has formed into an old alluvial fan.

Raung Mountain is younger than Argopuro volcano, and is presently active. On the west side slope on the side of Kabupaten Jember, one may observe the continuity of large sediment erosion runs parallel to the Bedadung River through central Jember.

The volcanic ashes that produce latosol cover the ground in the bottom of Raung Mountain and Argopuro Mountain. The thickness of the latosol is over 5m. It is relatively hard in dried condition, but it becomes loose and easily deteriorates in wet condition.

Figure 4.1.2 is a Soil Condition Map for Seismic Hazard Mapping. There are 18 classifications of soil type in Kabupaten Jember. Of the 18 ground types, tertiary rocks considered into one group in soil movement estimations so that 13 types are considered.

The fluvial plain in the central area is formed of fluvial sediment, which comparatively soft at the top part of the soil.

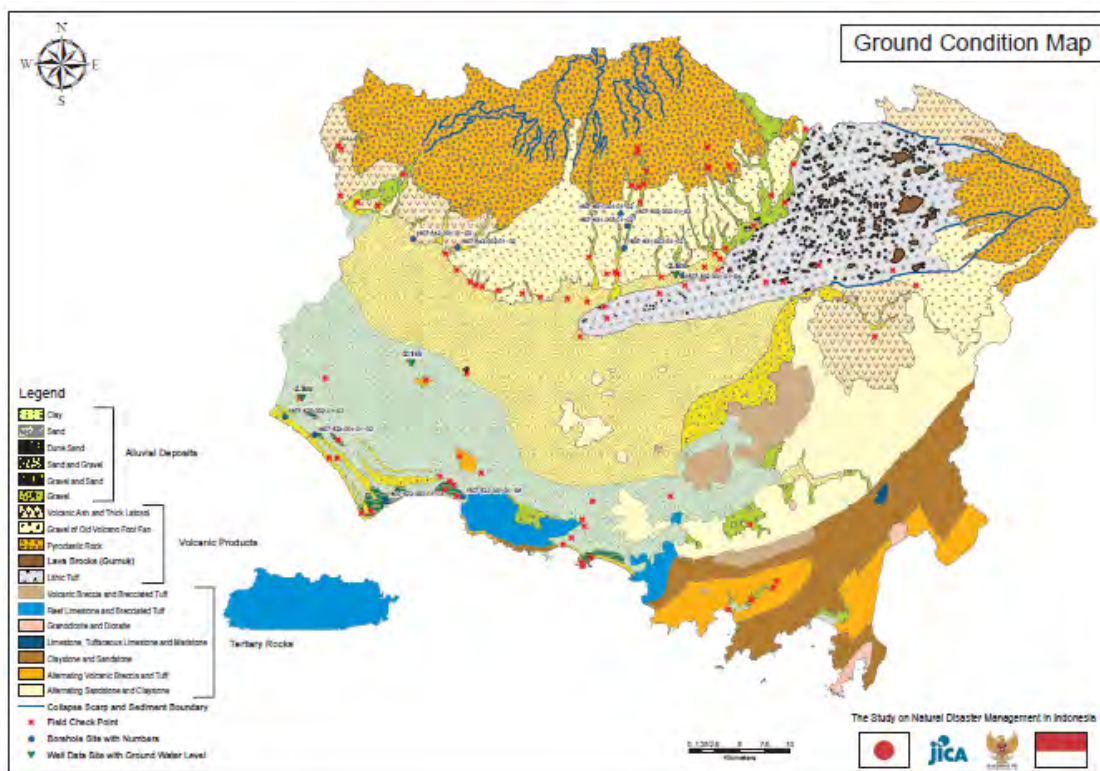


Figure 4.1.2 Ground Condition Map

4.2 Social Conditions

1) Population

Information on population include as important consideration in disaster management. The main source of population data for Jember is the Badan Pusat Statistic (BPS). BPS conducted a survey in 2005. Below is population data at village level collected from the local BPS Jember office.

Table 4.2.1 Population and Household distribution by Kecamatan for Year 2005

NO	KECAMATAN	POPULATION			HOUSEHOLD
		MALE	FEMALE	TOTAL	
1	KENCONG	31,322	32,949	64,271	18,088
2	GUMUKMAS	37,339	38,602	75,941	21,898
3	PUGER	51,391	52,810	104,201	29,602
4	WULUHAN	52,044	52,929	104,973	26,758
5	AMBULU	49,095	49,312	98,407	67,671
6	TEMPUREJO	33,502	35,939	69,441	19,362
7	SILO	46,266	49,416	95,682	32,277
8	MAYANG	20,905	22,446	43,351	14,741
9	MUMBULSARI	27,510	29,447	56,957	17,442
10	JENGGAWAH	33,653	35,863	69,516	22,431
11	AJUNG	31,808	33,550	65,358	20,266
12	RAMBIPUJI	34,850	36,752	71,602	21,559
13	BALUNG	35,048	36,431	71,479	19,328
14	UMBULSARI	33,522	34,112	67,634	18,779
15	SEMBORO	21,643	22,131	43,774	13,595
16	JOMBANG	23,835	25,430	49,265	N/A
17	SUMBERBARU	46,724	49,293	96,017	16,281
18	TANGGUL	36,843	38,856	75,699	59,200
19	BANGSALSARI	51,868	55,109	106,977	28,439
20	PANTI	27,932	29,250	57,182	16,996
21	SUKORAMBI	17,027	19,263	36,290	N/A
22	ARJASA	16,438	18,206	34,644	11,862
23	PAKUSARI	18,417	19,172	37,589	N/A
24	KALISAT	31,087	35,119	66,206	20,996
25	LEDOKOMBO	27,424	28,944	56,368	20,137
26	SUMBERJAMBE	26,529	28,370	54,899	19,492
27	SUKOWONO	26,327	27,780	54,107	N/A
28	JELBUK	14,809	15,091	29,900	N/A
29	KALIWATES	44,200	49,622	93,822	N/A
30	SUMBESARI	50,100	52,743	102,843	N/A
31	PATRANG	42,700	44,370	87,070	N/A
Total		1,042,158	1,099,307	2,141,465	557,200

Source (BPS- Jember office), 2005

Figure 4.2.1 shows the administrative boundaries of Kabupaten Jember at the Kecamatan and Village level as of 1999.



Figure 4.2.1 Administrative Boundaries

Figure 4.2.2 shows the gross population density of Kabupaten Jember. To know transparently about population density map, Figure 4.2.3 showing net distribution of population density To produce this map, population data was linked to both administrative boundaries and built-up area maps from Bakosurtanal. The map clearly shows that the most of population distributed along the main and collector roads passing west to east of Kab Jember and become crowded in Jember City area. Some of significant pockets of settlements can be find in the coastal such as ookecamatans of Gumukmas, Puger, Wuluhan and Ambulu.

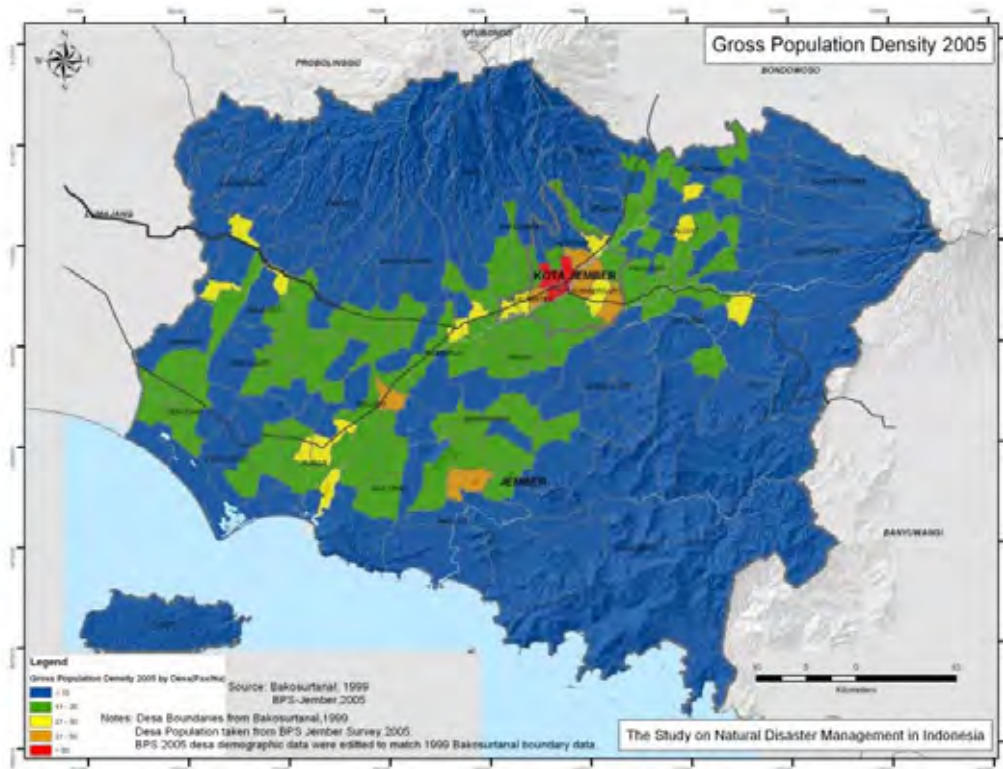


Figure 4.2.2 Gross Population Density of Kabupaten Jember

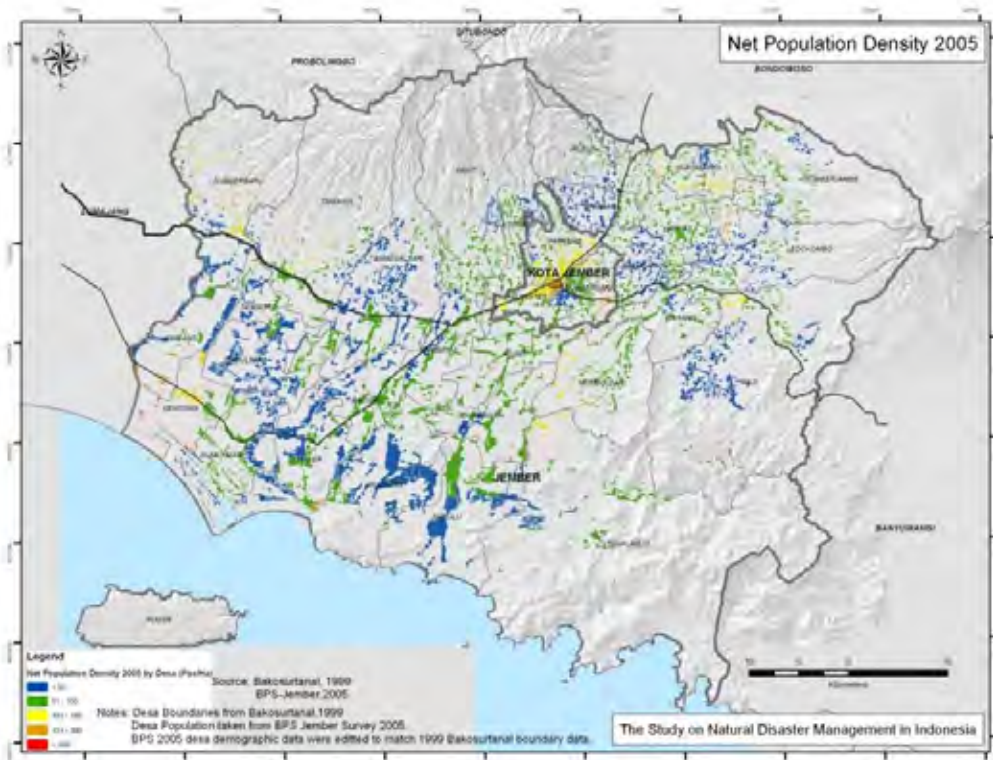


Figure 4.2.3 Net Population Density of Kabupaten Jember

2) Buildings

Information on building structure is another significant consideration in disaster management. For Kabupaten Jember, the main source for building inventory data is the Badan Pemberdayaan Masyarakat (BAPEMAS, Society Cultivation Board). They conducted a building survey in cooperation with the Kecamatan and Village offices in Kabupaten Jember in 2006. Table 4.2.2 summarizes the building data collection by Kecamatan.

Table 4.2.2 Number of Building and Type by Kecamatan

No	KECAMATAN	Total Area (Ha)	Built-up Area (Ha)	Concrete Bldg	Wood Bldg	Bamboo Bldg	Total Bldg	Total Households	Total Population	Household To Bldg Ratio	Population to Bldg Ratio	Bldg Density in Built-up area (Bldg / Ha)
1	KENCONG	5,963.95	528.26	13,281	1	1,133	14,415	18,088	64,271	1.25	4.46	27.29
2	GUMUKMAS	9,239.39	1,660.18	15,432	12	3,409	18,853	21,898	75,941	1.16	4.03	11.36
3	PUGER	15,813.45	1,935.46	21,001	178	2,553	23,732	29,602	104,201	1.25	4.39	12.26
4	WULUHAN	12,464.62	2,621.04	23,326	510	3,589	27,425	26,758	104,973	0.98	3.83	10.46
5	AMBULU	11,542.71	2,072.67	13,683	351	1,822	15,856	67,671	98,407	4.27	6.21	7.65
6	TEMPUREJO	53,005.14	1,128.10	N/A	N/A	N/A	N/A	19,362	69,441	N/A	N/A	N/A
7	SILU	32,307.44	1,836.00	18,366	3,953	6,885	29,204	32,277	95,682	1.11	3.28	15.91
8	MAYANG	5,766.93	771.48	7,004	179	8,202	15,385	14,741	43,351	0.96	2.82	19.94
9	MUMBULSARI	9,718.01	693.73	8,967	950	2,649	12,566	17,442	56,957	1.39	4.53	18.11
10	JENGGAWAH	6,131.78	1,078.51	11,862	1,098	4,128	17,088	22,431	69,516	1.31	4.07	15.84
11	AJUNG	6,000.89	933.01	6,429	430	1,824	8,683	20,266	65,358	2.33	7.53	9.31
12	RAMBIPUJI	5,659.45	1,245.29	7,746	200	1,711	9,657	21,559	71,602	2.23	7.41	7.75
13	BALUNG	5,061.08	1,213.17	11,823	192	2,578	14,593	19,328	71,479	1.32	4.90	12.03
14	UMBULSARI	7,120.62	1,579.97	14,100	N/A	6,330	20,430	18,779	67,634	0.92	3.31	12.93
15	SEMBORO	4,672.31	865.35	11,410	49	1,314	12,773	13,595	43,774	1.06	3.43	14.76
16	JOMBANG	5,557.19	850.15	8,983	1	416	9,400	N/A	49,265	N/A	5.24	11.06
17	SUMBERBARU	15,424.04	1,120.91	14,238	4,888	7,888	27,014	16,281	96,017	0.60	3.55	24.10
18	TANGGUL	20,389.97	950.48	7,421	856	1,402	9,679	59,200	75,699	6.12	7.82	10.18
19	BANGSALSARI	15,956.15	2,322.85	13,451	1,649	10,193	25,293	28,439	106,977	1.12	4.23	10.89
20	PANTI	18,097.12	929.09	6,440	2,581	4,368	13,389	16,996	57,182	1.27	4.27	14.41
21	SUKORAMBI	4,695.75	637.46	3,639	18	2,265	5,922	N/A	36,290	N/A	6.13	9.29
22	ARJASA	3,419.64	712.95	4,938	N/A	3,799	8,737	11,862	34,644	1.36	3.97	12.25
23	PAKUSARI	3,118.11	731.76	8,281	2,208	3,906	14,395	N/A	37,589	N/A	2.61	19.67
24	KALISAT	5,251.19	1,086.23	14,467	2,907	8,242	25,616	20,996	66,206	0.82	2.58	23.58
25	LEDOKOMBO	13,180.87	1,021.13	7,249	1,323	9,379	17,951	20,137	56,368	1.12	3.14	17.58
26	SUMBERJAMBE	13,588.34	924.98	6,308	3,041	8,197	17,546	19,492	54,899	1.11	3.13	18.97
27	SUKOWONO	4,546.60	744.64	7,414	4,405	5,486	17,305	N/A	54,107	N/A	3.13	23.24
28	JELBUK	7,303.63	549.30	3,002	3,395	6,548	12,945	N/A	29,900	N/A	2.31	23.57
29	KALIWATES	2,433.77	837.46	26,754	3,195	3,478	33,427	N/A	93,822	N/A	2.81	39.91
30	SUMBERSARI	3,661.75	1,093.65	32,674	765	4,446	37,885	N/A	102,843	N/A	2.71	34.64
31	PATRANG	3,801.27	915.42	9,433	644	3,153	13,230	N/A	87,070	N/A	6.58	14.45
		332,194.18	35,590.68	359,122	39,979	131,293	530,394	557,200	2,141,465	1.05	4.04	14.90

Sources: BAPEMAS, 2006
BPS, 2005
Bakosurtanal, 1999

Figure 4.2.4 is a thematic map showing building distribution by type for Kabupaten Jember. In terms of number, predominant material for building is concrete, followed by bamboo and wood. The definition of concrete in the survey generally refers to structures with walls made of brick and cement. The highest concentration of building structures can be found in the Kota Jember Kecamatan of Sumber Sari and Kaliwates as supported by their high building density as shown in the above table. Spatially, the thematic map indicates significant concentrations of buildings also exist in the coastal area such as kecamatans of Gumukmas, Puger, Wuluhan and Ambulu as well as the kecamatan of Silo in the east and Sumberbaru in the west.

Most of houses that made from bamboo can be find in Bangsalsari, Ledokombo, Mayang and Sumberjambe. This material generally used by the lower community.

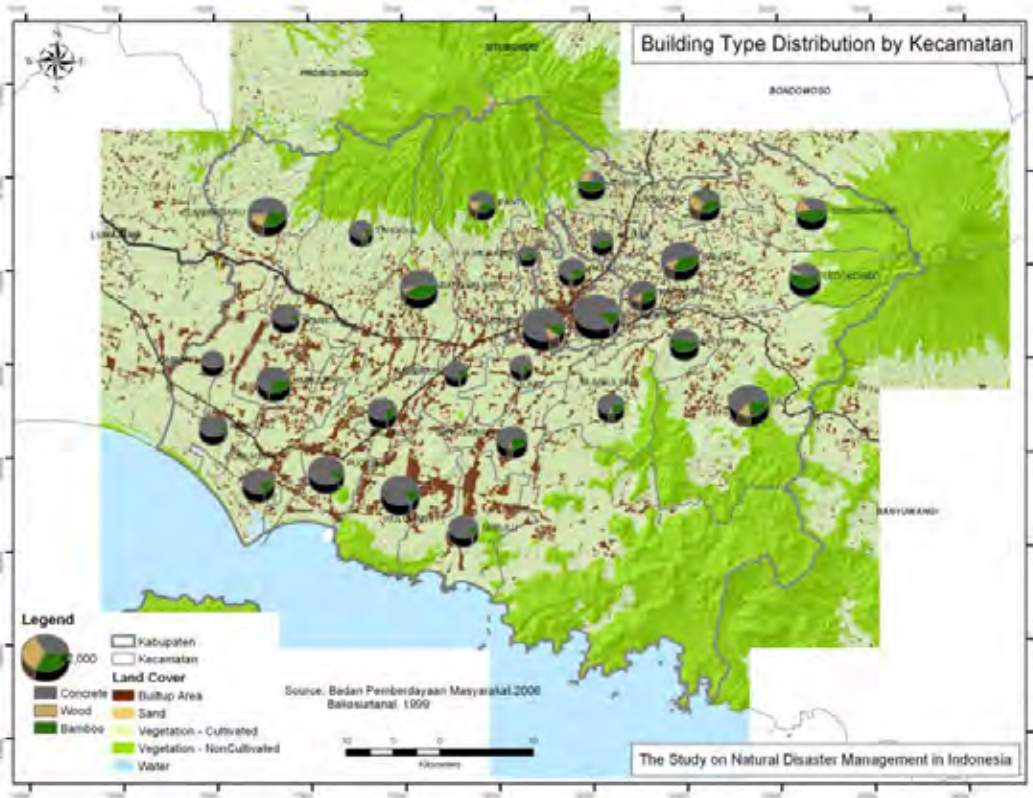


Figure 4.2.4 Building Type Distribution by Kecamatan

4.3 History of Earthquake and Tsunami Disaster in Kabupaten Jember

1) Past Earthquake Disaster in Jember

There was no remarkable earthquake which caused damages to Kabupaten Jember in the past. However, there is no safe place against earthquake in Indonesia, therefore, there is risk of occurrence of earthquake that may causes devastating damage to Kabupaten Jember in the future.

2) Past Tsunami Disaster in Kabupaten Jember

The list of the huge Earthquake and tsunami in recent years generated in Java Strait (Sunda Strait) in Southern offshore of Java island which seems to affect the coast of Kabupaten Jember is shown in Table 4.3.1.

There were 3 huge tsunamis occurred after 1960, it was in 1977, 1994 and 2006. Tsunamis in 1977 and 2006 causing serious damages along the coasts near the sources of tsunami, while the far-coast of tsunamis source did not hit the impact. East Java tsunami (3 June 1994) whose epicenter located at 240 km offshore from 240km affected all southern coast of East Java province. Therefore, The East Java Tsunami (1994) is fixed as a Target of investigation of past tsunami disaster in Kabupaten Jember on this plan.

Table 4.3.1 Records of Tsunami in Java Island (1960-2006)

Date	EPICENTER	MAX RUN-UP HEIGHT(m)	VICTIM (DIED/INJURED)	AREA
August 19,1977	11,1 Lat. S; 118,5 Long.E	5-8	316 died	NTB, Sumbawa Island
June 3, 1994	10,7 Lat. S; 113,1 Long.E	19,1	38/400	Jember, Banyuwangi Jatim
July 17, 2006	9,4 Lat. S; 107,2	7,6	>668	Jabar, Jateng, DIY

Source: S.Diposaptono, NOAA Tsunami Database, K.Kato et al (1995)

4.4 Earthquake and Tsunami Disaster Hazard

1) Earthquake

(1) Hazard Map

Figure 4.4.1 shows the seismic hazard map for Kabupaten Jember indicating distribution of ground surface acceleration intensity. The ground surface acceleration intensity is described using PGA (Peak Ground Acceleration) and MMI (Modified Mercalli Intensity scale). PGA is a value which will be obtained as the maximum value when the quake of the ground level is measured with accelerograph. The modified Mercalli intensity scale (MMI) divides earthquake intensity into 12 stages of evaluation, and each stage is defined by describing the incident through observation and sensing (for example; “Difficult to stand”). Therefore expression of MMI is discrete number originally but one digit below the decimal point is written in this report in order to distinguish a detailed difference. Estimated MMI for Kabupaten Jember is more or less 7.5. This level of intensity corresponds to almost “degree 5” in Japan Meteorological Agency Seismic Intensity Scale (it is called as JMI here in after). JMI also divides earthquake intensity into 10 stages of evaluation, and each stage is defined by describing the incident through observation and sensing. For instance, when the earthquake of “degree 5” in JMI occurs in Japan, some sort of slight damage can be found in some residential housing. If the same level of earthquake occurred in Indonesia including Kabupaten Jember, considerably serious damage are expected because earthquake resistant capacity of buildings in Kabupaten Jember is inferior to that of Japan.

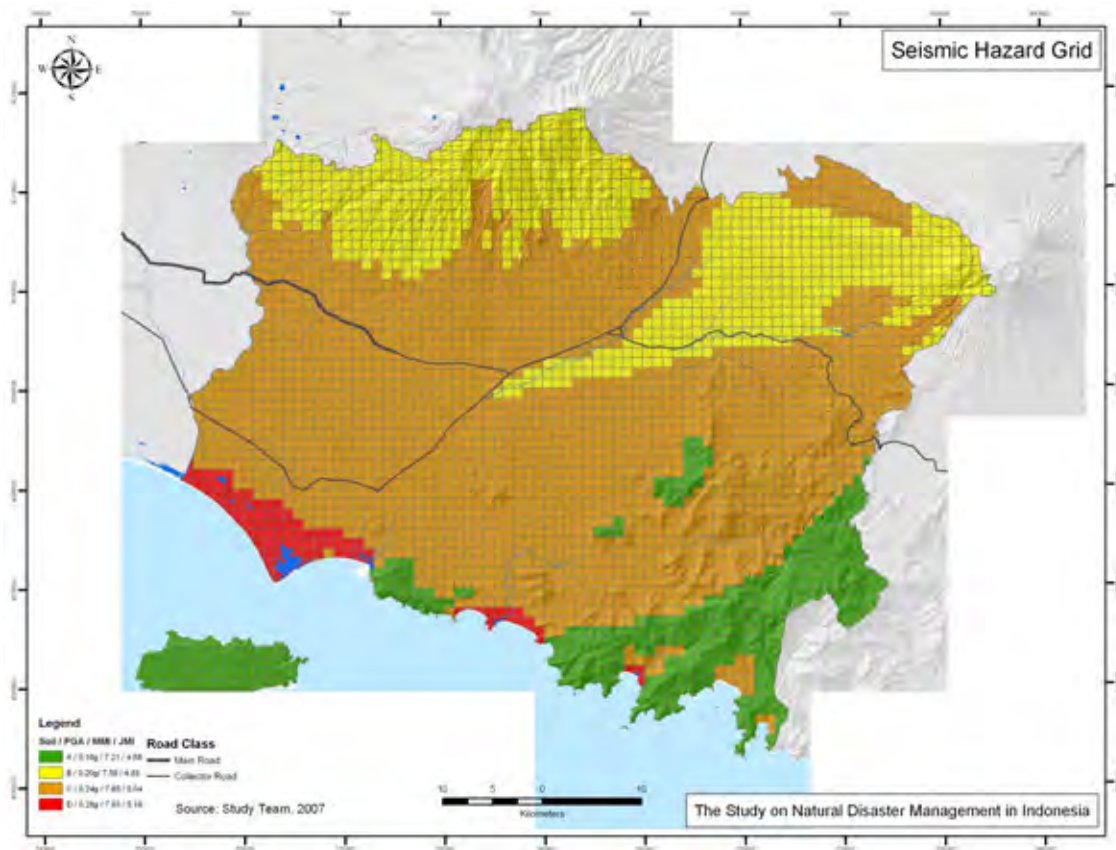


Figure 4.4.1 Earthquake Hazard Map (Distribution of ground surface acceleration intensity)

(2) Risk Map

Figure 4.4.2 shows the ratio of expected number of damaged buildings as earthquake risk map. The intensity of surface ground acceleration depending on the location as indicated in Figure 4.4.1. The vulnerability of the buildings also differs depending on the building type. For instance, the reinforced concrete buildings, which were designed and constructed based on modern design thought, is sustainable with 10% or less of damage ratio even if the intensity of surface ground acceleration is equal to MMI 8. But, some unreinforced masonry buildings may suffer serious damages with almost 90% of damage ratio. There is some difficulty to wrap up earthquake risk into one map to draw down everything because of the above situation. In a word, earthquake risk is high at locations where vulnerable buildings exist.

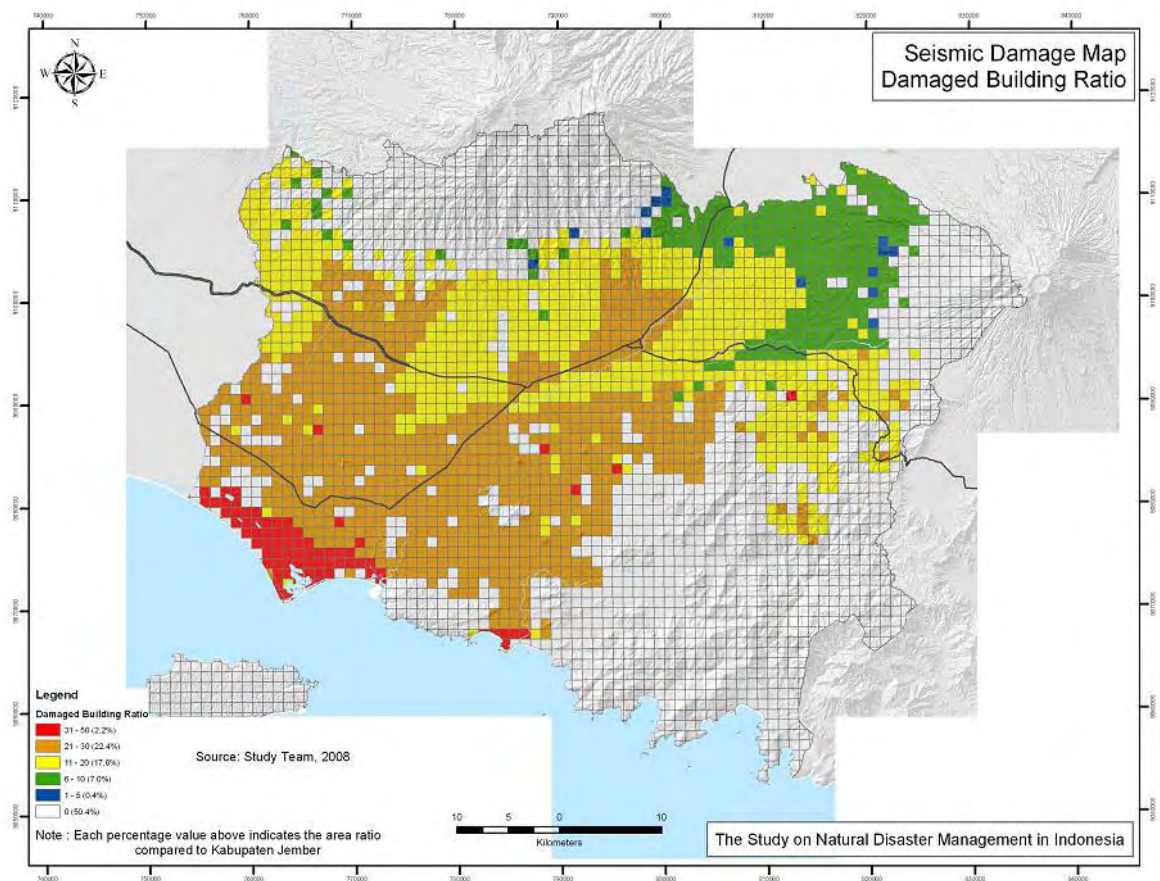


Figure 4.4.2 Earthquake Risk Map (Ratio of Damaged Buildings)

2) Tsunami

(1) Hazard Map

Figure 4.4.3 indicates the tsunami hazard for Kabupaten Jember. There are various methods to assess inundation area and depth due to tsunami, for example numerical simulation method, method based on historical inundation records, *etc.* For Kabupaten Jember, three candidate layers were obtained as hazard map for tsunami disaster. And, the layer, in which inundation and depth were estimated based on ground elevation, were selected as the hazard map for tsunami disaster, which gives the result on most dangerous side and is easy to formulate comparatively. The maximum run-up height of the East Java tsunami (1994) was 8m or less. Therefore, 8m above sea level was set to standard height of the expected tsunami run-up. Figure 4.4.3 indicates that the tsunami hazard has concentrated in low-lying area near the coast. And the expected tsunami flood area has extended from the coast to inland widely in the vast low-lying area of Kabupaten Jember.

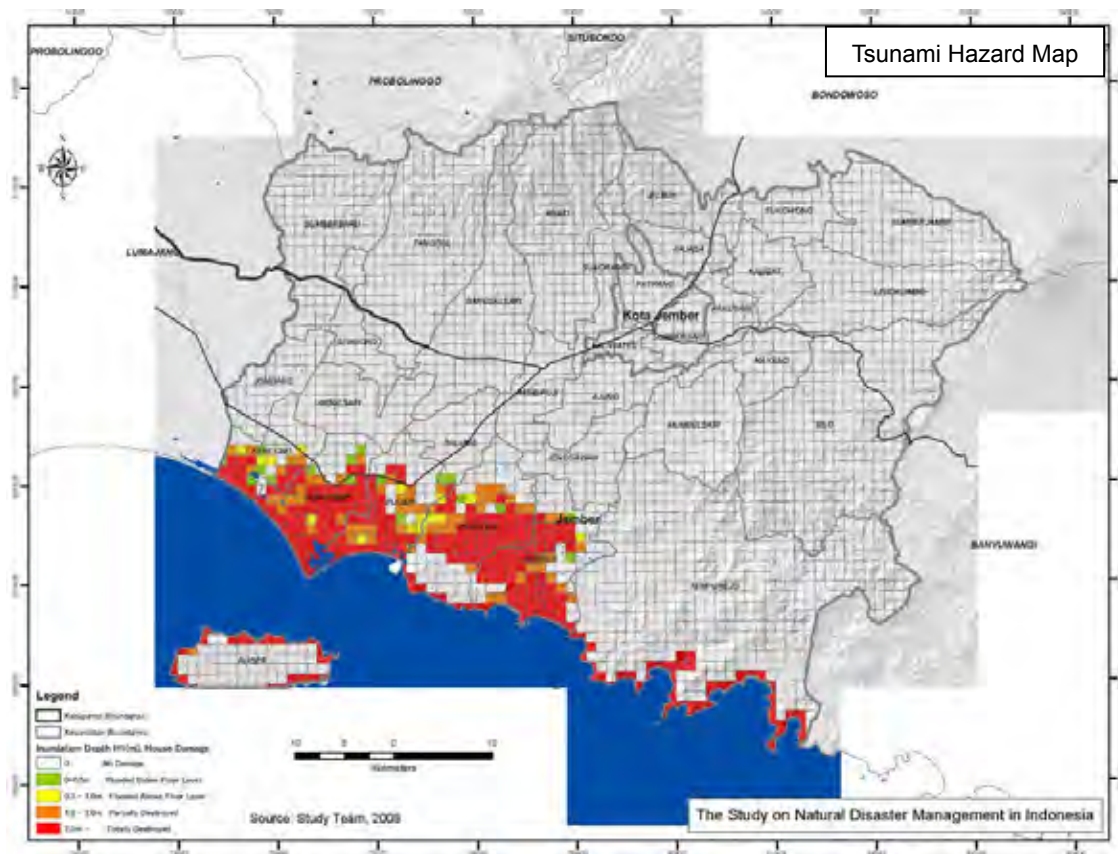


Figure 4.4.3 Tsunami Hazard Map for Kabupaten Jember

(2) Risk Map

Figure 4.4.4 shows the tsunami risk map for Kabupaten Jember which was derived from the tsunami hazard map and the vulnerability indices: 1) Population Density, 2) Built-up Area and 3) Damage Rate. Figure 4.4.4 indicates that the tsunami risk has concentrated on the villages in the low-lying area near the coast and river mouse such as Puger, Getem, and Watuulo. In eastern area, the village which has risk for tsunami hazard is only Bandialit located in head of bay. These villages in low-lying area near river mouse have usually fishery port or slipways for fishing boat. Thus the risk of fishery damage is very high in addition to the risk of house damage and human damage.

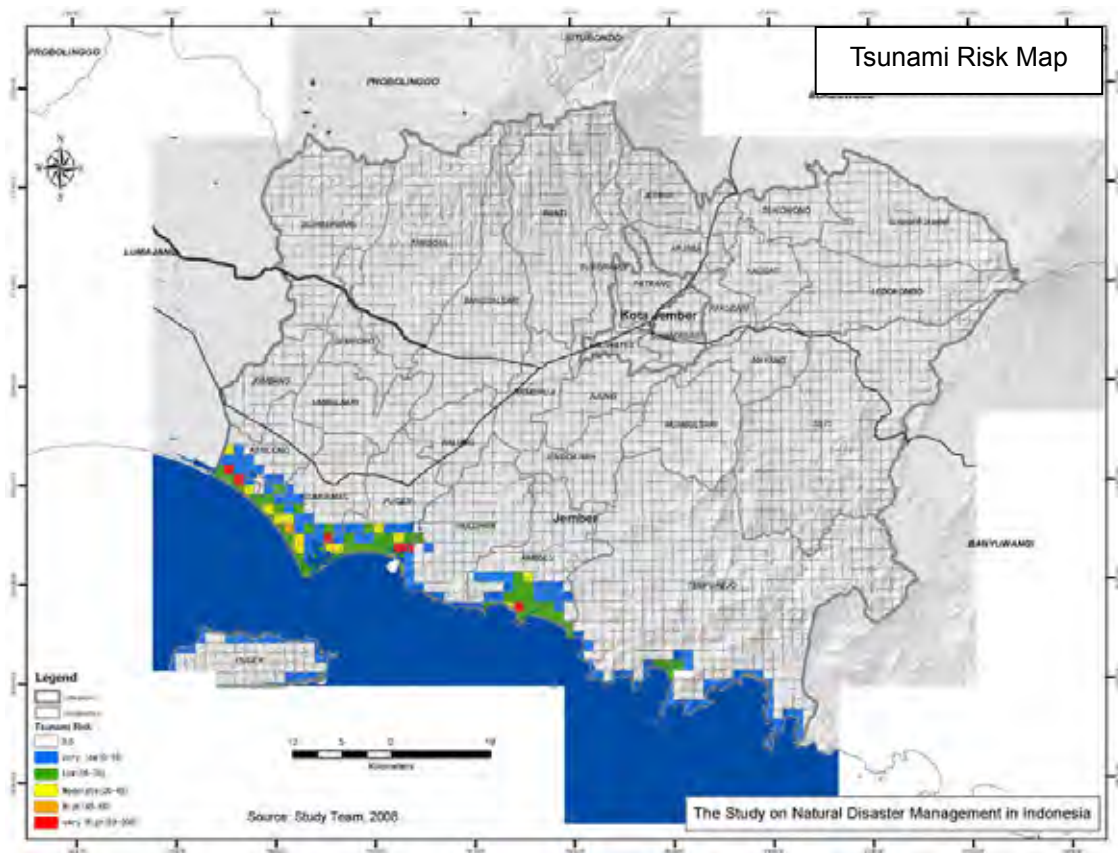


Figure 4.4.4 Tsunami Risk Map

CHAPTER 5. SOCIO-ENVIRONMENTAL ASPECTS FOR THE PLAN

In this chapter, recent trend and important points of disaster management is described briefly.

5.1 Learning's from Past Disasters

Indonesia has suffering form many earthquake and tsunami disasters from the past. Recent remarkable earthquake is Java Earthquake occurred in May 2006 killed more than 5,000 people, and in December 2004, West Coast of Northern Sumatra Earthquake caused devastating tsunami and killed at least more than 9,400 people instantly. From these unforgettable disasters, we must learn to minimize damages that may happen in the future. Not only limited to the experiences in our country, we also need to learn from disasters occurred in many countries.

Lessons learnt from these past disasters should be clearly compiled and need to reflect into disaster management action mentioned in this regional disaster management plan.

5.2 Development of Computerized Information System

Due to development of information technology recently, such as mobile communication tools, PCs, and etc., information communication and data processing tools has widely recognized. In advanced country, GPS and GIS have been widely used and it is possible to observe real time climate data, and its visual damage information system is established. These systems will not only change means of communication, but also give great improvement on collecting damage information in case of occurrence of disaster for disaster management.

However, due to complication of the system, once the system is broke down by the disaster, all system will be malfunctioned, therefore, it is important to multiplex this system. This system is useful if there is no malfunction, in the future, this kind of system may apply also in Kabupaten Jember, however, weak point of the system must be considered in advance.

5.3 Safety of Emergency Transportation Network

By the time disaster took place, the safety of emergency transportation network also become one of the most important criteria in disaster management to conduct all sorts of emergency response activities. Since there is limited road network in Kabupaten Jember, it is necessary to plan Emergency Transportation Network including Airport (under construction) in Jember. It will help quick response in emergency response.

5.4 Procurement of Lifeline Facilities in Disaster Period

In the daily life, especially in urban area, the dependency of lifeline facility is extremely high., and malfunction or stoppage of these services will greatly affect to citizens life. Lifeline companies have mandate to continue its service even in the period of emergency.. These lifeline companies must prepare and give great amount of effort to minimize its damage when disaster happens.

5.5 Social Expectation to Volunteers, NGOs/NPOs

From past disasters, Volunteers and NGOs play variety of important roles on first aid to disaster victims, and rescue activities, operation of evacuation facilities, etc, and their importance was recognized strongly. Volunteers and NGOs are locally active, and they are relatively flexible in many cases, therefore, their role is to support government activities during the disaster. Moreover, in disaster, by coordination with these Volunteers and NGOs/NPOs, more effective and appropriate activates can be expected.

5.6 Understanding the needs of Special Care for Vulnerable Groups

In Kabupaten Jember, ratio of elderly persons and young children is relatively high. By the time, disaster took place, especially due to rain and storm, which can be predicted before, these vulnerable groups will, takes much longer time to recover compare than young people., therefore, there is needs of special care for them, and it is need to prepare guideline or design certain criteria to help them to evacuate in advance. These activities are undertaken within community groups.

5.7 Guidance to Community on Realizing Disaster Mitigation Needs

Not only government officials who dealt with natural disaster, this disaster management must be well prepared all together among government officials, private companies and communities. Therefore, each party must aware the importance of disaster management and it is extremely important to increase their knowledge and awareness regarding disaster management. It is rather difficult to aware how serious of disaster management, however, once it (disaster) happen, it will be beneficial. Mitigation action will greatly reduce its victims.

CHAPTER 6. ESTABLISHMENT OF SATLAK PB

6.1 Definition of SATLAK PB

6.2 Obligations of SATLAK PB in Disaster Management Cycle

6.3 Members and Organization of SATLAK PB

6.4 Members Obligations in SATLAK PB

For 6.1 to 6.4, refer to Section 1 General Chapter 6, 6.1 to 6.4 in “Part 1: Rain and Storm Disaster Measures”

Section 2: Pre-Disaster (Pre-Disaster Management Plan)

Damages, caused by earthquake disasters including Tsunami, often generate huge impact that spread to wide areas. Devastating earthquake could totally disintegrate daily life of residents and force them to evacuate. Damages to educational, medical, social welfare facilities will also aggravate the situation. Therefore, preparedness measures against disasters which often occurs in Kabupaten Jember should be taken.

CHAPTER 1 CAPACITY DEVELOPMENT OF DISASTER MANAGEMENT ORGANIZATION

1.1 SATLAK PB

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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1.2 Improvement of RUPUSDALOPS PBP

<i>Responsible Agency:</i>	<i>BUPATI</i>
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1.3 Supports for Other Area

<i>Responsible Agency:</i>	<i>Social Agency</i>
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For 1.1 to 1.3, refer to Section 2 Pre-Disaster Chapter 1, 1.1 to 1.3 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 2 ENHANCEMENT OF DISASTER MANAGEMENT CAPACITY FOR RESIDENTS AND PRIVATE COMPANY

Mind concept of “self-protection” is concerned as vital elements in disaster management. Preparation for natural disaster individually could increase residents awareness and company owners for disaster preparedness. Everyday effort will strengthen city and the residents against natural disasters.

2.1 Expectation to Residents

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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2.2 Expectation to Society

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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2.3 Expectation to Private Company

<i>Responsible Agency:</i>	<i>Trading Industry</i>
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2.4 Volunteer Organization

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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2.5 Dissemination of Disaster Management Knowledge

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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For 2.1 to 2.5, refer to Section 2 Pre-Disaster Chapter 2, 2.1 to 2.5 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 3 *RESPONSE ENHANCEMENT FOR VULNERABLE RESIDENTS*

3.1 Measures for Vulnerable Group

<i>Responsible Agency:</i>	<i>Social Agency</i>
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3.2 Foreigner Management

<i>Responsible Agency:</i>	<i>Social Agency</i>
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3.3 Safety of Infants and Children

<i>Responsible Agency:</i>	<i>Health Agency</i>
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For 3.1 to 3.3, refer to Section 2 Pre-Disaster Chapter 3, 3.1 to 3.3 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 4 DEVELOPMENT OF DISASTER INFORMATION COMMUNICATIONS NETWORK

Development and effective operation of disaster information communication network, capacity development of radio communication network, and multiplexing of information network will be advanced in order to disseminate relevant information precisely and accurately to residents as well as the agencies engaging in rescue and relief activities so that each could give information regarding damaged condition adequately.

4.1 Design of Disaster Communication System

<i>Responsible Agency:</i>	<i>Transportation Agency Communication and Information</i>
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4.2 Operational of Disaster Information Communications Network

<i>Responsible Agency:</i>	<i>Transportation Agency, Communication and Information</i>
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4.3 Improvement of Operational Skill for Employee

<i>Responsible Agency:</i>	<i>Transportation Agency, Communication and Information</i>
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For 4.1 and 4.3, refer to Section 2 Pre-Disaster Chapter 4, 4.1 and 4.2 in “Part 1: Rain and Storm Disaster Measures”

**CHAPTER 5 RESCUE/ RELIEF, MEDICAL TREATMENT
MITIGATION PLAN**

5.1 Capacity Development of Fire Fighting

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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5.2 Education for Residents and Communities

<i>Responsible Agency:</i>	<i>SATLAK-PB</i>
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For 5.1 and 5.2, refer to Section 2 Pre-Disaster Chapter 5, 5.1 and 5.2 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 6 SAFETY CONTROL/ RESCUE MEASURES

6.1 Safety Control and Rescue Preparedness Measures by Police

<i>Responsible Agency:</i>	<i>POLRES</i>
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6.2 Safety Control and Rescue Preparedness Measures in Water

<i>Responsible Agency:</i>	<i>KAMLA</i>
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For 6.1 and 6.2, refer to Section 2 Pre-Disaster Chapter 6, 6.1 and 6.2 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 7 DEVELOPMENT OF EMERGENCY TRANSPORTATION FACILITIES

7.1 Development of Emergency Transportation Facilities

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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For Chapter 7, refer to Section 2 Pre-Disaster Chapter 7 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 8 *EVACUATION AND PREPAREDNESS OF TEMPORARY HOUSING*

When large scale earthquake disaster occurs, efforts to develop and repair condition of evacuation areas is highly necessary in order to secure safety of citizens, and so they will be able to survive in evacuation place. This chapter discuss regarding development plan of evacuation area.

8.1 Temporary Evacuation Area

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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1) Role of Temporary Evacuation Area

When disaster such as earthquake and tsunami occurs, temporary evacuation area will be established to protect residents from disaster suffering. Evacuation area also functioned as accommodation for refugees after disaster. For those two major roles, temporary evacuation areas should already be decided in each Kecamatan.

2) Criteria of Temporary Evacuation Area

Selection of temporary evacuation area should consider following criteria.

- Places safe from disaster
- Far from coastal area in order to avoid tsunami
- Accessible area
- In form of wide plain area
- No hazardous facilities in the neighborhood (e.g. chemical factories)

3) Selection of Temporary Evacuation Area

(1) Selection of Temporary Evacuation Area

Temporary evacuation areas are selected in each Kecamatan. These evacuation areas will be reviewed periodically in line with dynamics of population and building areas.

(2) Establishment of Signboard

Establishment of signboard for temporary evacuation areas will be conducted in order to lead the citizen to suitable area. Signboard is also efficient to develop citizen awareness for disaster management.

8.2 Evacuation Facilities

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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1) Selection of Evacuation Facilities

Appropriate evacuation facilities are needed to accommodate the people who lose their house because of storm or erosion. Evacuation facilities are basically selected from existing buildings in each Kecamatan. These buildings selected as evacuation facilities should have enough room to accommodate certain number of residents. Structure of the building should be strong enough against disaster and located in safe area far from coastal or at high area.

(1) Evacuation Facilities

Some facilities such as schools and mosques are selected as evacuation facilities in advance by each Kecamatan. Required number and space of evacuation facilities are depended upon the population. At least, a certain number of the injured, children and elderly need to stay in evacuation facilities. These selected facilities will be maintained and reinforced for the disaster.

Some Kecamatan which are located along the sea should already designate alternative evacuation facilities in other Kecamatan and to maintain good relation with them.

(2) Establishment of Signboard

Establishment of signboard for evacuation facilities should be conducted in order to lead the citizen to the right facilities without any confusion. Signboard is also efficient to develop citizen awareness of disaster management.

2) Equipments of Evacuation Facilities

(1) Required Equipments for Communication and Supply

After disaster occurred, required equipments are different between initial period (within 72 hours) and restoration period (after 72 hours). Equipment needed for both periods are as follows.

A. Initial Period: within 72 hours after disaster occurred

- Radio transmission
- Mobile phone
- Radio
- Billboard
- Electric generator and battery
- Motorcycle and bike

B. Restoration Period: 72 hours after disaster occurred

- Radio transmission
- Mobile phone

(2) Provision regarding Drinking Water and Foods

Commodities, drinking water and foods are essential in evacuation facilities. Supply will be prepared in order to have sufficient amount of commodities, drinking water and food to be provided to refugees.

A. Water Supply

To guarantee enough water supply after disaster occurred, the following facilities should be inspected and maintained in advance.

- Water supply in schools and mosques
- Wells
- Plastic canteens or containers
- Rear cars

B. Foods

Following cooking equipments for foods supply should be prepared.

- Cooking stove
- Large sized pan
- Propane gas
- Plates and utensils

3) Establishment of Working Committee for Evacuation Facilities

Working committee for each evacuation facility should be established with for two purposes. One, the committee will maintain the facilities themselves. The other, the committee should prepared the equipments so refugees are able to stay at the evacuation facilities without any confusion.

(1) Organization of Working Committee

Organization of working committee will be advised to include the following member.

- Leader of Community Organization for Disaster Risk Management, or private company such as plantation companies
- Member of Kecamatan Office
- Owner or manager of the facilities
- Others (private company, volunteers, and so on)

(2) Role of Working Committee

The working committee will be expected to make the following preparation at each evacuation facility in order to smooth operational of the facility under emergency situation.

- Making a list of user of the evacuation facilities
- Formulation of manual for operating evacuation facility including rescue measures for the elderly, weak and handicaps
- Training for implementation of the manual
- Disseminate method of disaster management and increase awareness
- Discussion on disaster prevention measures with residents
- Conducting disaster prevention drill with residents and private company
- Prior discussion on how to close evacuation facility when refugees already occupy their houses or temporary housing

8.3 Formation of Evacuation Plan

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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8.4 Preparedness of Temporary Housing

<i>Responsible Agency:</i>	<i>SATLAK PB</i>
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For 8.3 and 8.4, refer to Section 2 Pre-Disaster Chapter 8, 8.3 and 8.4 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 9 DEVELOPMENT OF DISASTER MANAGEMENT FACILITIES

Supplies are vital for disaster preparedness such as materials and equipments for damage prevention, rescue activities and restoration, foods and drinking water.

9.1 Supply of Disaster Management Equipments and Goods

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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9.2 Supply of Emergency Foods and Commodities

<i>Responsible Agency:</i>	<i>Social Agency</i>
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9.3 Supply of Drinking Water, and etc

<i>Responsible Agency:</i>	<i>Region Drinking Water Company</i>
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For 9.1 to 9.3, refer to Section 2 Pre-Disaster Chapter 9, 9.1 to 9.3 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 10 MEDICAL TREATMENT AID AND INFECTION DISEASE PREVENTION MEASURES

Supply of medical equipments and medicines will be prepared for medical treatment in time of disaster. Particularly immediate examination of corpse will prevent outbreak of infection disease.

10.1 Development of Activity Base of Medical Treatment

<i>Responsible Agency:</i>	<i>Health Agency</i>
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10.2 Medicine Supply and Medical Equipments

<i>Responsible Agency:</i>	<i>Health Agency</i>
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For 10.1 and 10.2, refer to Section 2 Pre-Disaster Chapter 10, 10.1 and 10.2 in “Part 1: Rain and Storm Disaster Measures”

10.3 Prevention of Infectious Disease

<i>Responsible Agency:</i>	<i>Health Agency</i>
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1) Infection Disease Prevention Activity

Tsunami which may occur after earthquake is likely to cause a variety of infection disease. In order to prevent such disease, residents must have the right knowledge about infection disease. Hence, information of major infection disease, the sources of outbreak and prevention method will be distributed by brochure and website in advance. Besides, examination of drinking water and rat destruction should be conduct periodically in order to reduce the possibility of outbreak in time of disaster.

2) Supply of Materials for Infection Disease Prevention

Antiseptic and disinfectant will be kept as stuppy at each clinics and disaster prevention centers in order to disinfect flooded houses and toilets, also well after tsunami.

10.4 Preparedness Measures of Corpse

<i>Responsible Agency:</i>	<i>Health Agency & Indonesian Red Cross</i>
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For 10.4, refer to Section 2 Pre-Disaster Chapter 10, 10.4 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 11 DISASTER MANAGEMENT IN SCHOOL

11.1 Formulation of Evacuation Plan

<i>Responsible Agency:</i>	<i>Education Agency</i>
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11.2 Preparedness Measures of School Facilities for Emergency Situation

<i>Responsible Agency:</i>	<i>Education Agency</i>
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For 11.1 and 11.2, refer to Section 2 Pre-Disaster Chapter 11, 11.1 and 11.2 in “Part 1: Rain and Storm Disaster Measures”

11.3 Disaster Management Education

<i>Responsible Agency:</i>	<i>Education Agency</i>
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Teachers and school staffs should received education regarding disaster management in order to be able to take appropriate action under emergency circumstance. This education could be conducted in form of seminar or lectures. Information of disaster prevention measures for school should be distributed through brochure or/ and website.

Meanwhile, students should also get disaster management education. Proper knowledge about earthquake and tsunami and their causes will become basic idea for disaster prevention, and should be educated in school. Through this education, hopefully disaster management can be applied in school and household. Therefore, it is highly recommended that disaster management subject also included in student educational curriculum.

CHAPTER 12 MEASURES FOR FACILITIES HANDLING HAZARDOUS MATERIALS

In case of earthquake disaster, there may be occurrence of fire outbreak at facilities handling hazardous materials such as high pressure gas, LPG, LNG, etc., and these hazardous materials have potential risks in creating secondary disasters.

Toxic and Dangerous Substances also have high risk, if these materials are spread due to earthquake, because the effects will remain for long period of time.

To secure safety of facilities handling these hazardous materials, and avoid occurrence of secondary disaster due to earthquake, necessary measures are planed in this chapter.

12.1 Preparedness Measures for Hazardous Materials

<i>Responsible Agency:</i>	<i>POLRES</i>
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1) Supervision to Storage Facilities of Hazardous Materials

- At investigation and examination of allocation or change of facilities storage or handle hazardous materials, necessary criteria for securing safety of these hazardous materials should be considered and give supervision to administrators of facilities storage or handle hazardous materials to prevent the secondary disasters.
- To prepare for disaster occurrence, examine manual which explaining about the appropriate measures, and chemicals substance, etc.

2) Supervision to Storage Place and Handling Facility of Hazardous Materials

- Conduct investigation with permission from person in charge of storage place and facility of handling hazardous materials also give guidance regarding appropriate measurement for dangerous material when earthquake occurs.

3) Measures of Small Amount Hazardous Materials

- In Kabupaten Jember, there are many small shops selling petrol for bikes in front of shops along main roads. In case of large scale earthquake disaster, there are risks of occurrence of explosion when the bottles that contained gasoline are broken. Therefore, appropriate measures are very necessary to avoid secondary disaster as result of the hazardous materials.

12.2 Preparedness Measures for LPG, etc

Responsible Agency:	POLRES
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1) Investigation of Actual Conditions

- If approval of handling high pressure gas, LPG, LNG, etc. is requested, site investigation of company documents must be carried out to confirm condition of the place when there is request from administrators of the facilities to conduct it in order to guarantee safety of these facilities.

2) Prior Supervision

- For Installation of large scale gas storage tanks which contains flammable gases, to secure safety against earthquake disaster, give supervision in advance to administrators of facilities to consider earthquake disaster measures on structures and facilities.

3) Supervision for Personal Security

- Supervise on strengthening autonomy security system in case of occurrence of earthquake disaster, as well as supervise on formulation of disaster management plan, and implementation of practical drills.
- To prepare for disaster occurrence, supervise them on preparation of manual mentioning necessary measures, and chemicals, etc.

12.3 Preparedness Measures for Toxic and Hazardous Substances

<i>Responsible Agency:</i>	<i>POLRES</i>
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1) Investigation of Actual Conditions

- If approval of handling Toxic and Hazardous Substances, etc. is requested, try to grasp actual condition to secure safety of these facilities and give supervision on prevention on fire outbreak.

2) Supervision for Autonomy Security

- Supervise on strengthening autonomy security system in case of occurrence of earthquake disaster, as well as supervise on establishment of prompt alert system to fire department of Kabupaten Jember if Toxic and Hazardous Substances leak or outflow, and inform surrounding neighborhood to evacuate.
- To prepare for disaster occurrence, examine manual mentioning necessary measures, substance chemicals, etc.

CHAPTER 13 *PREPAREDNESS FOR TSUNAMI DISASTER*

Kabupaten Jember is located in southern coast of East Java Province. Coastal area in Kabupaten Jember is covering 1/3 of the coastline. There are grown sand dunes with altitude of 3-6m. Residents are living in the low and flat coast area which spreads as long as 10km to north. Apparently those sand dunes protected the lowland from tsunami with 1-3m high which occurred in East Java Province on 1994. Such phenomenon also occurred in West Java Province in 2006.

On the coast area, there are some fishing ports such as Puger, Getem and Watu Ulo. Some beaches are used as boat mooring place. In addition, there are also beach tourism objects with several souvenir shops and pergola that are visited by many tourists.

In southern sea of Kabupaten Jember coast, there is Nusa Barong Island which land is sticks out to the sea. This island is uninhabited, only several people visited the place for fishing.

Tsunami caused by topographical changes of the sea floor as the effect of earthquake that create a long wave and spread to all direction. Though not every earthquake can cause tsunami, but when huge tsunami occurred, it will cause extremely serious damages and all buildings along the coastline are destroyed, such as the case of Indian Ocean Tsunami in 2004 and East Java Tsunami in 1994.

Kabupaten Government and related agency/institution should conduct the following measures as best as possible to prevent damage because of tsunami.

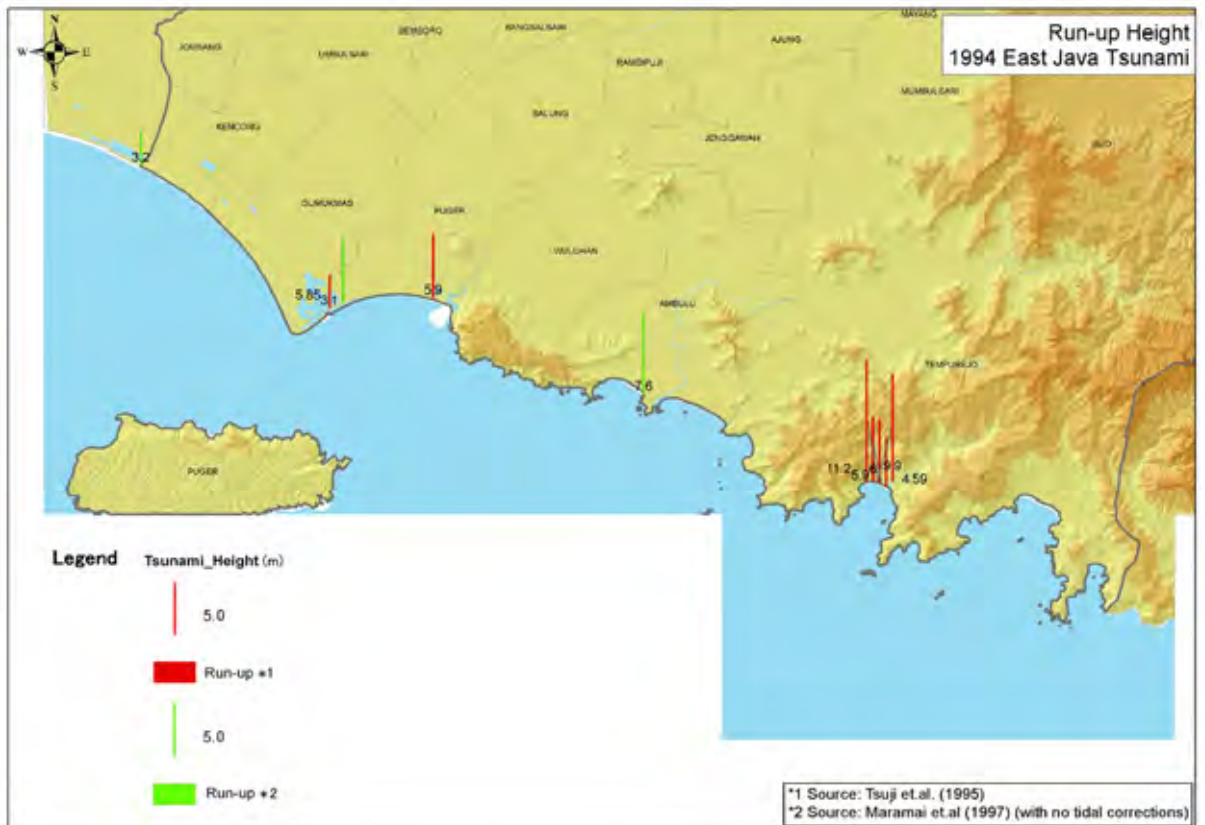
13.1 Estimation of Tsunami Hazard in Kabupaten Jember

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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Kabupaten Jember was seriously damaged by East Java Tsunami in 1994. Based on the record, the signs of tsunami which is confirmed are more than 6-7m as average along the coast in Kabupaten Jember, 11.2m (Bandialit) as the maximum height. This tsunami hit a dune of the shore partially and flooded 36 houses, and brought out the serious human casualties of 12 dead, 11 injured, and 119 ships suffered damage.

The distribution of tsunami height on the coast of Kabupaten Jember is shown in Figure 13.1.1.

The maximum height of tsunami attack was 11.2m of Bandialit. That extreme height compared with height at other places is influenced by geological factor, which is the shape of bay and coral in coastal area.. The height of tsunami attack in flat land was 5,9m in Puger and 7,6m in Watu Ulo.. As of the average height of tsunami attack on the coast of Kabupaten Jember was 6-7m.



Source: JICA Study Team

Figure 13.1.1 Distribution of Tsunami Height due to 1994 East Java Tsunami

13.2 Estimation of Tsunami Information Transmission Framework

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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1) Development of Tsunami Information Transmission System

In order to disseminate the tsunami warning promptly and accurately to the residents, tsunami-warning system such as siren network using radio transmission system will be installed in coastal area.

2) Establishment of Tsunami Information Transmission System

Each agency related to disaster management must confirm the route and means of tsunami information transmission. Particularly, information transmission during night and/or in holiday should be clarified and familiarized.

3) Explanation on the Meaning of Tsunami Warning

In order to secure the exact transmission of tsunami warning and encourage the proper action, the meaning and contents of warning will be publicized to related parties and residents.

13.3 Preparation of Tsunami Hazard Map

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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In order to take effective tsunami measures, Tsunami Hazard Map based on investigation of past tsunami disaster (1994 East Java Tsunami) was formulated. Based on Tsunami Hazard Map, the expected dangerous area and the common knowledge of Tsunami will be informed to the residents through Internet, advertisement papers and pamphlets.

Additionally, based on Tsunami Hazard Map and Tsunami Risk Map, the following matters should be executed.

1) Selection of Evacuate Difficult Area

Inundated area that has difficulty to evacuate to safe place until that tsunami flood should be selected.

2) Recognizing residents who have difficulty to evacuate

The people, including tourist, that has difficulty to evacuate should be kept under control.

3) Making / Publishing tsunami hazard map

Tsunami Hazard Map reflected from the result of section 1), 2) in above should be informed to the residents.

13.4 Formulation of Tsunami Evacuation Plan

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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In 2006, Bakesbang Linmas, which is one of sections of National Unity Agency, socialized the leaders of community in Kabupaten Jember about Tsunami Disaster Prevention. At that time the leaders formulated their own Tsunami evacuation plan including the decision of refugees.

It is demanded that refugees at the time of tsunami outbreak is executed quickly. On the account when tsunami warnings were announced, based on the formulated tsunami hazard map the refuge places will be selected and procedure to inform direction of tsunami refuge promptly will be planed.

In addition, it is important to take action voluntarily without waiting the warning issued by disaster prevention agencies. Thus, prompt evacuation to higher ground will be familiarized to residents in tsunami flood-hazard area and direction board to evacuation area will be placed on the coastline and refugee place, while evacuation route installed in place that likely to experienced damage caused by tsunami.

Companies located near the coastline will be urged to formulate their evacuation plan to make it possible to evacuate grouping and voluntarily.

13.5 Secure and Designate Evacuation Facilities for Tsunami

<i>Responsible Agency:</i>	<i>POLRES</i>
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The refugee facilities for tsunami will be designated with cooperation of public accommodation and establishments in tsunami flood-hazard area in order to ensure the security of the people who lives there.

When designating and ensure the refugee facilities, numbers of people who has difficulty with refugee, and the capacity and seismic capacity of the selected facilities should be considered.

13.6 Knowledge Dissemination regarding Tsunami

<i>Responsible Agency:</i>	<i>Communication and Information Agency</i>
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The following are information regarding tsunami that should be disseminate to community.

- Tsunami will come after earthquake.
- When earthquake occurs, people must immediately evacuate to higher place even without warning.

1) Knowledge Dissemination to residents

People often have the incorrect knowledge of Tsunami because only few people who had experienced it. Therefore, the correct knowledge of Tsunami will be disseminated to residents through any media, such as public information papers, pamphlets, and lectures.

2) Knowledge Dissemination to visitors

In Kabupaten Jember, some tourist areas are located in the coast side where there are some pergola and sightseeing shops. Many tourists visits there. Thus, the correct knowledge of Tsunami will be disseminated to them.

3) Conducting Tsunami drill

Disaster prevention organization, local residents, and companies will conduct tsunami drill including communication training, evacuation guidance, and evacuation to shelters regularly.

CHAPTER 14 *DISASTER MANAGEMENT CAPACITY DEVELOPMENT OF URBAN STRUCTURE*

In Kabupaten Jember, there are many slope areas due to the geographic characteristics. For taking advantage of such landform, many farm villages are existed in slope area for agriculture, agro-forest industries, and limestone excavation. In case of large-sized earthquake occurs, landslides and building corruption are supposed to happened. In the same time, area along the coast may suffer from break down of the roads and other infrastructure, liquefaction, and tsunami. In consideration of these expected damages, urban structure requires to be strengthened against earthquakes.

14.1 Towards Disaster Safe Urban Structure

<i>Responsible Agency:</i>	<i>Development Planning Board</i>
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Urban structure needs to be strong enough against earthquake in order to avoid residents to be in panic when disaster happens. Therefore improvement of living environment such as to encourage development of quake-resistance construction and to secure open spaces is vital step to formulate strong urban structure.

1) Disaster Prevention Measures for Buildings

Many buildings collapsed when large-scale earthquake happens due to vulnerable construction. The collapsed buildings might cause fire as secondary disaster and affect to urban function such as infrastructure. To prevent these damages, disaster prevention measures for buildings are established.

(1) Disaster Prevention Measures for Existing Buildings

In build up area and densely populated area, safety inspection and appropriate advices will be conducted such as inspection of building structure, disaster prevention equipments, fire prevention equipments and evacuation route. In particular, renovation for disaster prevention in densely populated and vulnerable areas is also encouraged. Besides, renovation of buildings in surrounding area of evacuation places and routes area are considered to be carried out.

(2) Disaster Prevention Measures for New Buildings

In case of construction for new buildings, the owner and contractors are advised to build the houses or buildings according to appropriate construction methods of earthquake resistant.

(3) Disaster Prevention Measures for Public Buildings

Public buildings such as schools, mosques, hospitals and clinics, which are expected to be base of emergency activities should conducted seismic performance evaluation or/ and earthquake resistant reinforcement. In addition, backup facilities for functional disorder of lifelines are considered.

(4) Disaster Prevention Measure from Falling Objects including Windowpane

To prevent falling objects including windowpane, roof tiles, signboards and advertising displays because of earthquake, the owners will be advised to repair it to become earthquake-resistant.

(5) Disaster Prevention Measures from Collapsed of Brick Wall

Brick wall is likely to collapse when earthquake occurs. The owners of such brick wall and house with bricks are advised to maintain, reinforce and reconstruct the wall. Explanation of how to check bricks and safety structure of bricks are emphasized.

2) Disaster Prevention for Open Space

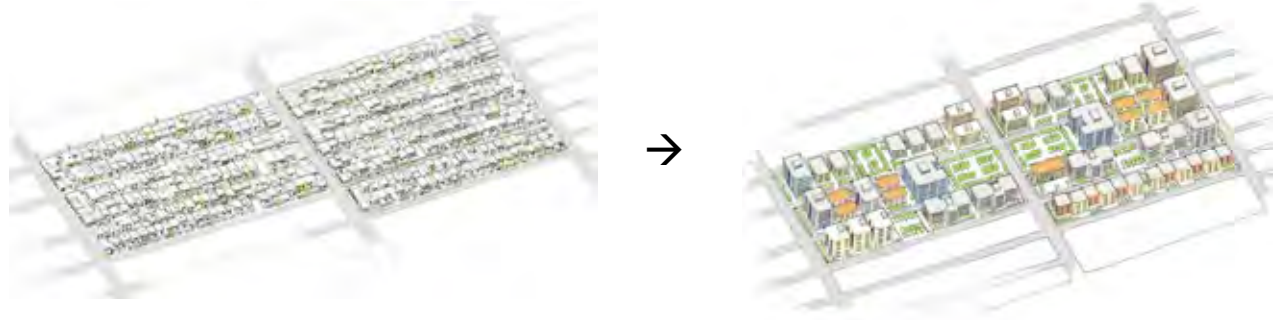
Open spaces including parks and green spaces serve as for not only recreation and relaxation but also evacuation places under emergency circumstance. In this sense, open spaces have the most important role in the disaster prevention measures. Therefore, improvement of open space is one of the necessary actions to increase resistance against disaster. Open spaces which are difficult to find in build up area should really be preserved.

3) Improvement of Build-Up Area

In order to avoid large-scale suffering from disasters, city should have strong structure against natural disasters. In particular, build-up area is likely to be difficult for evacuation and smooth relief activities due to high-dense buildings and lack of evacuation places. Hazardous build up area will be clearly determined by using hazard map. In such area, appropriate size and number of open space and evacuation roads will be planned.

Area Development and Re-development

Area development and re-development is one of drastic measures for strengthening the city against natural disasters. This measure is efficient for vulnerable area with high-dense buildings or residences. By means of area development and re-development, it could allow to maximum utilization of land use, especially, expanding open space for evacuation and emergency responses and widening evacuation roads. Additionally the buildings and residences in hazardous area should be relocated to safe area. However, this solution requires huge cost and long period of time, especially to obtain consensus from all residents. Besides, it is also has high social impact. Hence, it requires an intense study before implementation.



Existing Condition

Redeveloped

Source: JICA Study Team

Figure 14.1.1 Image of Area Redevelopment

14.2 Disaster Mitigation at Urban Area

<i>Responsible Agency:</i>

<i>Transportation Agency, Population Board</i>

Our life has come to rely upon a variety of services such as transportation, communication, infrastructure that could make daily life easier. These services are comprised of integrated system e.g. a transportation service needs communication and electricity. Therefore damage of one service may cause the whole service system that is needed by society to be stopped. To avoid these errors at emergency situation, the following disaster mitigation measures are considered important.

1) To Secure Lifelines

(1) Backup System

Owners of private company and managers of institute and organization related to lifeline service are emphasized to improve their backup system, to introduce multiplex system, and to secure emergency electric power source.

(2) Cooperation between Various Service Companies and Institutes

In order to mitigate damages of lifeline caused by earthquake and secondary disasters and immediate recovery, mutual help among related companies and institution is necessary. Framework will be established among these related organizations including government agencies, institutes, and private companies.

(3) To Secure Alternative Way

Each household and private company should prepare alternative measure if damage happens to lifeline.

2) To Minimize Confusion inside Buildings

(1) Evacuation Guidance System

Large-size buildings such as department stores and office buildings are encouraged to establish an evacuation guiding system individually in order to mitigate confusion under emergency circumstance.

(2) Education for Staff regarding Evacuation Guidance Method

Managers and owners of shops and office buildings are advised to educate on their staff about evacuation guidance so they could take an appropriate action when disaster occurs.

(3) Information for Building Users

Managers and owners of shops and office buildings are emphasized to notice for building users and customers about disaster prevention measures such as to put signboards of emergency exit in their buildings.

(4) Information by Managers and Building Owners

Managers and owners of shops and office buildings are encouraged to make disaster prevention plan individually.

3) To minimize Confusion on Road

(1) Information for Vehicle User

In order that car users and drivers can take an appropriate action under emergency circumstance, clarification for car users is supposed to be conducted for them.

(2) To Reduce Street Parking

Under emergency situation, on street parking may block transportation of emergency vehicles and evacuation. Notably primary emergency transportation routes should always be clear and street parking should be forbidden on them.

14.3 Sediment Disaster Mitigation

<i>Responsible Agency:</i>	<i>Company of Forestry & Agency of Forestry and Plantation</i>
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Direct shock of earthquake could caused buildings to collapse or damaged. The damage could also caused by false construction or vulnerable foundation. Thus, damage inflicted by earthquake is greatly influenced by characteristics of the foundation.

Earthquake could cause form alteration on building foundation, slope slide, houses collapsed, etc.. In order to prevent such damage as much as possible, related organizations/agencies should conduct the following measures.

1) Survey at-risk areas

Related organizations/agencies must conduct investigation and try to understand the actual condition of disaster hazardous places, the use of land also housing and roads, etc, that could be affected by disaster, so in the future the affect of disaster could be avoid at least minimized. The required data will serve as a base to issue evacuation warning and such. Moreover, buildings administrators, occupants, owners, and construction should be given information or administrative guidance regarding improvement of disaster prevention measures improvement orders, etc..

2) Disaster prevention activities

The following matters s carried out for disaster prevention after the collapse of a steep slope, etc.

- (1) Give residents thorough notification of the at-risk areas, and educates them about the necessity to make detailed planning and the effect.
- (2) Educate residents so they do not carry out any dangerous activities that could induce landslide, etc., and encourage them to observe steep cliff to obtain image of the present conditions.
- (3) Encourage residents of particularly at-risk areas to check the location of known risk spots, evacuation areas, and routes.
- (4) Perform Landslide Disaster Prevention Patrol once a year; in cooperation with the local police department, and local residents.

3) At-risk locations for Landslide

Patrols in areas that are typically at-risk for landslide disaster, and issue notification to all people resides in the area also give information on disaster prevention. Moreover, residents are

thoroughly informed about nearby evacuation areas, and advised to take refuge in an evacuation area should there be any danger present.

14.4 Earthquake related Fire Mitigation

<i>Responsible Agency:</i>	<i>Transportation Agency, Population Board</i>
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Fire caused by earthquake is likely to break out at several places at the same time, while firefighter brigade could not com to all locations due to lack of facility and man power. .Therefore, preliminary fire fighting by residents is vital to mitigate the occurrence of secondary disaster.

1) **Enhancement of Community Organization for Disaster Risk Management in Fire Fighting**

Community Organization for Disaster Risk Management is encouraged to improve their capacity of fire fighting.

2) **Inspection for Fire Prevention**

Facilities, which easily burn such as tobacco, drying factory and chemical factories should conduct inspection as preparation measure of disaster management plan in order to avoid such fire when earthquake happens.

3) **To Prevent Fire Spreading**

(1) **Enhancement Capacity of Fire Fighting**

To improve capacity of fire fighting including fire fighter and their facilities should be improved in order to function well. In addition, if water is unavailable caused by broken pipe as result of earthquake, improvement of water tanks for quake resistance is necessary.

(2) **Fire Defense and Control Plan**

To prevent fires when earthquake occurs and to promote smooth evacuation for residents, the fire defense and control plan should be prepared.

- Cooperation, development between fire fighter and LWLPs
- Confirm locations of water resource to extinguish fire such as water tanks, rivers and water channels.

CHAPTER 15 SAFETY MEASURES FOR PUBLIC FACILITIES

Damages of public facilities from earthquake might disturb emergency activities such as evacuation, fire fighting and medical treatment. Especially damages of lifeline could cause strong negative impacts on the civil life. To mitigate these impacts, related agencies should take appropriate actions as follows.

15.1 Road Facility Measures

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Road facilities are important not only for emergency activities such as evacuation and fire fighting but also for any action in recovery period such as transportation of relief supplies and materials for reconstruction. For this, roads and facilities development plan should include the contents for upgrading their security.

1) Improvement of Emergency Roads

In terms of disaster prevention, road network designated as emergency road shall reflect upon the land use plan and master plan in Kabupaten Jember. These roads should be repaired to be strong road network against earthquake.

- Roads which connect to evacuation place and major places for relief activities
- Roads which could block fire caused by earthquake

2) Opening Emergency Routes

In case that road has some damages from earthquake and hampered emergency activities and transportation of supplies, hence, designated roads are given priority to be reopened. The following roads will be applied for priority.

- Roads which are designated as evacuation roads
- Roads which connects to hospitals and clinics

3) To Keep Safety of Emergency Routes

- To designate earthquake-resistance roads as emergency route to prevent/mitigate damages.
- To consider alternative routes
- To improve electric poles and advertisement display along emergency routes in order to avoid obstacle at roads
- To reduce on street parking in order to prevent obstacle by cars and vehicles

4) To Keep Safety of Bridges

Inspection of the bridges especially those exist on the emergency route will be carried out regularly. In case these bridges collapse or drift away, the reconstruction will be conducted with high priority.

5) To Keep Emergency Materials and Manpower

For preparing earthquake, emergency stocks need to be kept in cooperation of other organizations and private sectors in advance. Besides, to avoid lacking of manpower for rescue and recovery activities, hence application of aid system to other organization have to be made.

15.2 River Measures

<i>Responsible Agency:</i>	<i>Irrigation Agency</i>
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To prevent secondary disasters caused by earthquake such as flood, rivers in Kabupaten Jember will be applied with appropriate safety measures.

15.3 Important Structure Measures

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Public structures, which play an important role as bases for emergency response activities and evacuation facilities in the time of disaster should be prevent from total collapse to be able to maintain necessary function. Therefore, public structures that require appropriate level of earthquake resistance must be maintained or upgraded.

1) **The Important Structure are as follows:**

- PEMKAB Buildings
- Fire Stations
- Hospitals, Health Care Center, Social Welfare Center
- Schools
- Lifeline Facilities
- Other Important Structures

2) **Protection with Earthquake Resistance Construction**

Structures listed above have important roles for emergency response activities. These facilities are required to prevent from collapse against earthquake and tsunami. Therefore, inventories of these facilities, must be prepared and necessary strengthening measures should be carried out..

3) **Location Investigation of Important Structures**

If these important structures are located in tsunami hazard area or steep slope area with risk of landslide due to earthquake, try not to designate these important structures form facilities utilize for base of emergency response activities or evacuation facilities. Those facilities under dangerous area should consider changing location in the future.

CHAPTER 16 SECURE SAFETY OF BUILDINGS

16.1 Secure Safety of Private Buildings

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Human death and casualty are caused by collapse of the buildings at time of earthquake disaster. Therefore the most important and effective issue for mitigating number of human death is preventing the collapse of major dwelling buildings.

1) Dissemination of Disaster Management Knowledge

- Most general dwelling houses in Kabupaten Jember are constructed by amateur builder who is in experience in structure engineering. When thinking about this respect the residents themselves should have practical knowledge and skill for construction in order to make appropriate earthquake-resistant dwelling buildings. For this purpose, Responsible Agency in Kabupaten Jember will disseminate disaster prevention knowledge i.e. building structure method and the basic information of earthquake-resistant design method.

2) Inspection on Existing Dwelling Buildings

- Related Agency in Kabupaten Jember will draw up an implementation outline of building inspection for existing dwelling buildings in Kabupaten Jember.
- Related Agency in Kabupaten Jember will carry out building census investigation in order to have basic knowledge about distribution of building structure type and the building material type of all dwelling buildings in Kabupaten Jember. Related Agency in Kabupaten Jember will promotes the implementation of building inspection on every dwelling building following the order of priority according to the level of the danger, which becomes clear by the result of the building census and the risk map.

3) Reinforcement of building structure confirmation and permission system

- Administrative in Kabupaten Jember will establish the building structure confirmation and permission system. Therefore, only buildings that have efficient strength may be given construction permission. Related agencies will inspect construction condition at necessary timing and give effective guidance to the builder when improper construction is found.
- Administrative in Kabupaten Jember will cancel the building permission (IMB) when the builder does not make improvement. Legal compulsion should be applied when building

constructor does not acknowledge the guidance and caused remarkable danger for the surrounding area..

4) Earthquake Retrofitting and Strengthening in Existing Building

- Related Agency in Kabupaten Jember will promotes activity for retrofitting and earthquake strengthening in existing building when the problem of earthquake-resistance is found by building inspection.

5) Financial Support for Disaster Prevention Effort

- Related Agency in Kabupaten Jember will make back up plan for retrofitting and earthquake strengthening existing building.. These agencies will inform this back up system widely in order to encourage the self-motivating disaster prevention works.
- Related Agency in Kabupaten Jember will make best effort to achieve financing system for earthquake-resistance construction for individual who has a concrete plan to build earthquake-resistance construction.

16.2 Secure Safety of Public Buildings

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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Medical facilities and schools should be completely protected due to their important role when disaster occurs (i.e. emergency place, relief, and shelter place). Therefore, Related Agency in Kabupaten Jember will take following strong measures in order to prepare a strong institutional-building at the time of disaster.

1) Investigation on Existing Public Buildings

- Related Agency in Kabupaten Jember shall promote establishing an earthquake-disaster mitigation plan for the facilities, which have important role for medical purpose and shelter base, and inspect them. When un-qualified building is found, order and guidance to implement improvement will be given..

2) Earthquake retrofitting and earthquake strengthening in existing institutional-building

- Related Agency in Kabupaten Jember will draw up an implementation outline for building inspection on existing institutional-buildings in Kabupaten Jember.
- Manager in each institutional-building will investigate the disaster mitigation capacity of their building utilizing method that stipulated in implementation outline. Earthquake-resistance construction shall be build to strengthen the building when there is lack in disaster mitigation capacity.
- Related Agency in Kabupaten Jember will strongly guides the manager in each institutional-building through to install important facilities (i.e. Fire protection system on disaster prevention, alarm equipment, refuge accommodation, etc). Management system that enable mutual cooperation between each different management authority will be established if some usages are set for single facility and the management authority has divided.
- Related Agency in Kabupaten Jember shall organize activity plan of emergency monitoring aid and guide refugees' past-disaster.

3) Function Reinforcement of Institutional Utility

- Reaction capacity to great disaster depends on whether emergency response is promptly implemented or not. Related Agency in in Kabupaten JEmber should check the required equipment and existing capacity of each institutional-utility which will become bases of

emergency activities of medical treatment relief and shelter accommodation. If those utilities are insufficient, hence plan to reinforce the function will be established.

CHAPTER 17 SECURE SAFETY OF LIFELINE

Utilities referred as “Lifeline” such as Water, Electricity, Telecommunication, and etc. are critical system of our life. Therefore, when these utilities are damaged because of earthquake and tsunami disasters, urban malfunction will occur, and the effect is considered to be extremely large.

Consequently, to minimize damages to these utilities, following measures are promoted.

17.1 Coordination Enhancement among Lifeline Provider Companies and PEMKAB

<i>Responsible Agency:</i>	<i>Social Agency, Regional Drinking Water Company, National Electricity Company, TELKOM</i>
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17.2 Water Supply Facility

<i>Responsible Agency:</i>	<i>Public Works Agency, Regional Drinking Water Company</i>
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17.3 Electric Facility

<i>Responsible Agency:</i>	<i>National Electricity Company</i>
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17.4 Telecommunications Facility

<i>Responsible Agency:</i>	<i>TELKOM</i>
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For 17.1 and 17.4, refer to Section 2 Pre-Disaster Chapter 17, 17.1 to 17.4 in “Part 1: Rain and Storm Disaster Measures”

Section 3 : Emergency Response

(Disaster Emergency Response Plan)

When devastating earthquake disaster occurs, occurrence of variety of damages are expected such as collapse of buildings, roads and bridges damages, landslide, lifeline damage, tsunami, liquefaction, as well as fire.

This Disaster Emergency Response Plan is emergency response measures which should be implemented by Kabupaten Jember Government and other disaster management related agencies in the event of disaster in order to handle variety of damages promptly and effectively.

CHAPTER 1. EMERGENCY RESPONSE SYSTEM

Due to variety of disaster such as excitation of the ground and tsunami, Kabupaten Jember, Government will establish response system with the following procedures in order to implement emergency response activities promptly and precisely to mitigate damages.

1.1 Initial Response System (IRS)

<i>Responsible Agency:</i>	<i>Bupati Office</i>
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In order to response disaster precisely, prompt response by Kabupaten Jember Government together with related organizations is important for the next emergency response activities. Initial Response System is defined as response that carried out until Emergency Response Headquarter (Rupusdalops PB) is established This Initial Response System should be ready for 24 hours to receive weather information from BMG.

1.2 Rupusdalops PBP (Emergency Response Headquarters) and SATLAK PBP

Responsible Agency:	Bupati Office
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When disaster occurs or in high risk of occurrence, to implement disaster emergency response, Rupusdalops PBP will be established and SATLAK PB meeting will be hold.

1) Rupusdalops PBP

(1) Establishment of Rupusdalops PBP

A. Criteria for Establishment of Rupusdalops PBP

Criteria for establishment of Rupusdalops PBP
1. More than MMI 5 Scale Earthquake is observed and announced in Kabupaten Jember Region by BMG.
2. When Devastating Earthquake occurred in Kabupaten Jember Region, and MMI scale can not be confirmed, but evidently large scale disaster occurred
3. When BMG announced occurrence of Tsunami in Kabupaten Jember Region and Surrounding Area
4. When Bupati decided to do so

B. Substitution in case of Absence of Bupati

If Bupati is absent, the following are person who will substitute the position of Bupati.

1. Vice Bupati
2. Economics and Development Assistant
3. Head of National Unity Agency

C. Announcement of Establishment of Rupusdalops PBP

Bupati or his substitution will report promptly to head of SATKORLAK PB of East Jawa Province and related organizations regarding establishment of Rupusdalops PBP. Announcement of establishment of Rupusdalops PBP to community will be done through mass media and other means.

(2) Organization of Rupusdalops PBP

Organization of Rupusdalops PBP is composed of related agencies in PEMKAB based on duties described in “Disaster management and refugees handling established procedure (Protap PBP) of Kabupaten Jember”.

From time to time, type of emergency response change, thus organization must be reformulate in order to be able to handle emergency response activities.

A. Organization and Role of Rupusdalops PBP

Organization and role of Rupusdalops PBP is based on Protap PBP.

B. Duties of Substitution of Head of Rupusdalops PBP

Head of Rupusdalops PB is Bupati, however, if Bupati is absent or cannot perform his duties, all Bupati’s role will be substituted by the following person, respectively;

- | |
|--|
| <ol style="list-style-type: none"> 1. Vice Bupati 2. Economics and Development Assistant 3. Head of National Unity Agency |
|--|

C. Enhancement of Relationship with Related Organizations

Rupusdalops PBP has to share disaster information and implement emergency response promptly with well coordination, and participation from military, police, Red Cross, lifeline providers, etc.

D. Coordination with SATKORLAK PB of East Jawa Province

If disaster level is low, it is not necessary to establish Rupusdalops PBP in Provincial level. However, if the disaster cannot be handled within Kabupaten, Bupati should request support to the Province.

To coordinate with SATKORLAK PB efficiently, necessary information was transmitted to SATKORLAK PB.

(3) Location of establishing RUPUSDALOPS PBP

RUPUSDALOPS PBP is established at following location;

Priority	RUPUSDALOPS PBP Location
1	Conference Room of Bupati Office
2	Conference Room of Bupati Residence
3	Special room that accessible

- If large scale disaster occurs and these designated indoor buildings cannot be used, open space of Alun-Alun could be used to establish RUPUSDALOPS PBP. In this case, tents are prepared for emergency use.
- If scale of disaster is relatively small and far from PEMKAB, remote RUPUSDALOPS PBP will be established close to disaster location.

2) SATLAK PB Meeting for Emergency Response

(1) Holding SATLAK PB Meeting for Emergency Response

When Rupusdalops PBP is established, SATLAK PB meeting will be held to decide basic strategy for emergency response measures.

(2) Composition and Operation of SATLAK PB Meeting for Emergency Response

A. Composition of SATLAK PB Meeting for Emergency Response

All member of SATLAK PB will attend the SATLAK PB Meeting for Emergency Reponse.

B. Participation Request of Related Organizations

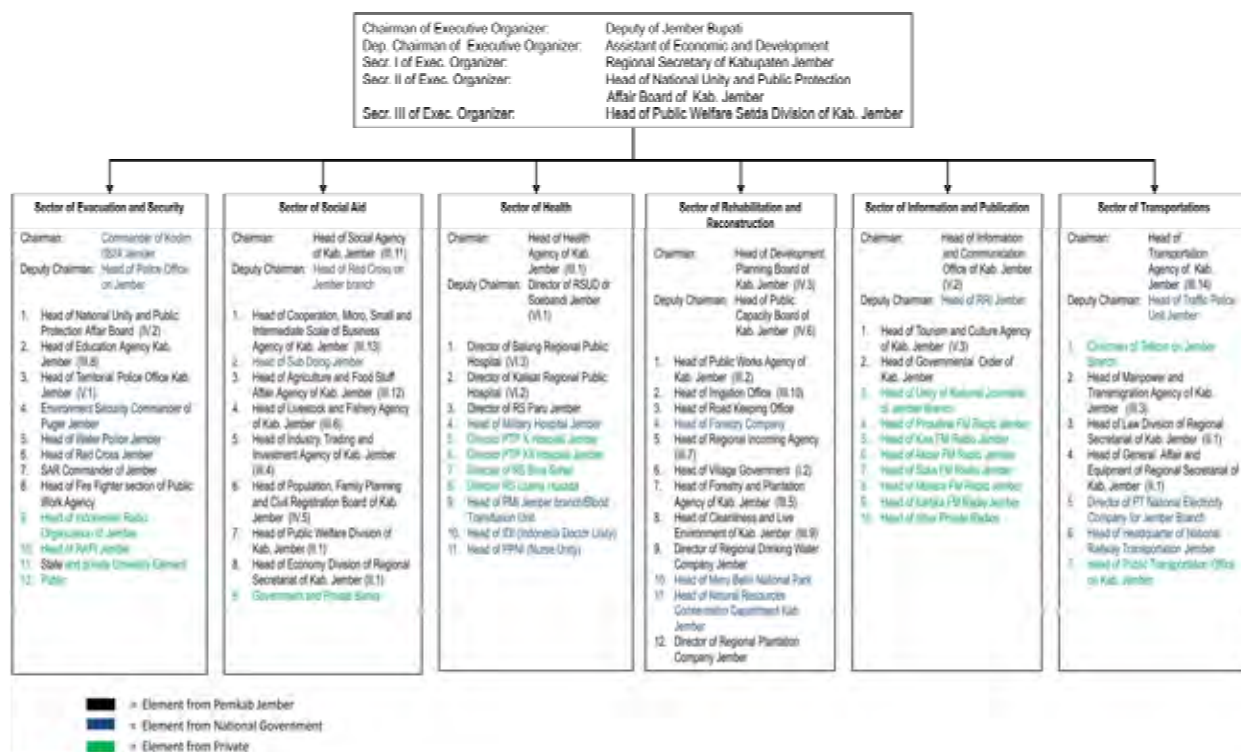
When it is necessary, all related organizations non-member of SATLAK PB are requested to participate in SATLAK PB Meeting for Emergency Response, such as lifeline providers, police, etc.

3) Dismissal of Rupusdalops PBP

1. Bupati will dismiss Rupusdalops PBP when there is no more risk of disaster, or emergency rehabilitation is almost completed after occurrence of disaster
2. Bupati will inform to head of SATKORLAK PB regarding dismissal of Rupusdalops PBP, and also inform the community through mass media and other means
3. After dismissal of Rupusdalops PBP, if still necessary Bupati will order to continue implementation of emergency response t measures based on Rupusdalops PBP.

4) Organization of Rupusdalops PBP

(1) Organization Chart of Rupusdalops PBP



(2) Role of Each Agencies of Rupusdalops PBP

PEMKAB

Agencies	Chapter	Sub Chapter	Tasks
Bupati Office	1	1.1	Initial Response System (IRS)
	1	1.2	Rupusdalops PBP (Emergency Response Headquarters) and SATLAK PBP
SATLAK	5	5.2	Measures after Occurrence of Tsunami
Health Agency	6	6.1	Rescue, First Aid, Medical Treatment Measures
	6	6.2	Medical Treatment System
	6	6.3	Procurement of Drags and Medicines, Medical Equipments
	6	6.4	Mental Health Measures
	14	14.5	Setting of Temporary Toilet
	15	15.1	Search for Missing and Treatment of Dead
	15	15.2	Postmortem and Transport of Dead
	15	15.3	Recover of Dead
	15	15.4	Treatment of Dead
	16	16.1	Health Care and Hygiene Measures
	16	16.4	Epidemic Prevention Measures
Public Works Agency	9	9.1	Target of Removal
	10	10.2	Securing Transportation Network
	18	18.1	Investigation of Damaged Buildings

Agencies	Chapter	Sub Chapter	Tasks
Public Works Agency	18	18.2	Survey of Damaged Residential House
	18	18.3	Construction of Temporary Housing and Emergency Restoration of Damaged Buildings
Education Agency	17	17.1	Management of School Facilities
	17	17.2	Measures for Students and Pupils
	17	17.3	Procurement and Provision of School Supplies, etc.
	17	17.4	Management of Education Facilities
Cleanliness and Environment Agency	9	9.2	Cleaning Officers
	9	9.4	Temporary Storage Sites for Debris
	14	14.5	Setting up of Temporary Toilet
	15	15.5	Burial or Cremation of Casualties
	16	16.2	Solid Waste Management
	16	16.3	Human Waste Management
Irrigation Agency	4	4.2	Preventive Measures for Secondary Disaster
Social Agency	3	3.1	National and Province
	3	3.2	Surrounding Kabupatens
	14	14.1	Food Provision
	14	14.3	Daily Commodity Provision
	14	14.4	Acceptance of Goods from outside Disaster Affected Area
Transportation Agency	1	1.4	Staff Mobilization for Tsunami Warnings
	2	2.1	Communication Tools
	2	2.2	Establishing Disaster Communication Operation System
	5	5.1	Receiving and Transmitting Weather Forecasts and Warnings
	7	7.2	Emergency Call and Mobilization
	8	8.3	Road Transportation Management
	10	10.1	Securing Transport Equipment
	13	13.2	Transportation for Panic Prevention
	14	14.3	Daily Commodity Provision
National Unity Agency	3	3.3	Disaster Management Related Organizations
	5	3.5	Volunteers
	4	4.1	Warning, Evacuation, and Guidance Measures
	12	12.1	Evacuation Plan
	12	12.2	Announcement of Evacuation Warnings
	12	12.3	Set up of Alert Area
	12	12.4	Advice for Evacuation and Transfer
	12	12.5	Set up of Temporary Evacuation Facility and Its Management and Operation
	15	15.1	Searching for Missing and Treatment of Dead
	19	19.1	Recovery Information of Lifeline
	19	19.2	Water Supply Facility
	21	21.1	Information Sharing with National and Provincial Organization
	21	21.2	Acceptance of Foreign Assistance
Information and Communication	2	2.1	Communication Tools
	2	2.2	Establishing Disaster Communication Operation System

Agencies	Chapter	Sub Chapter	Tasks
Information and Communication	2	2.3	Collection of Disaster Information
	2	2.4	Publication of Disaster Information
	4	4.3	Publication and Dissemination of Information to Community
	7	7.3	Information Collection System
	15	15.6	Provision of Information to Community
Religion Board	6	6.4	Mental Health Measures
Head of District	5	5.3	Evacuation without Transmission of Warnings
	11	11.1	Disaster Response Activities by Community
	11	11.2	Disaster Response Activities by Community Groups
	13	13.3	Panic Prevention during Evacuation
	5	5.3	Evacuation without Transmission of Warnings
District Secretary	1	1.3	Staff Mobilization of Rupusdalops PBP
Head of Village	5	5.3	Evacuation without Transmission of Warnings

Other organizations

Agencies	Chapter	Sub Chapter	Tasks
Police	5	5.1	Receiving and Transmitting Weather Forecasts and Warnings
	8	8.1	Security Measures by Police
	13	13.1	Panic Prevention due to Lack of Information
	13	13.4	Panic Prevention at Public Facilities
	20	20.1	Hazardous Materials Storage Facility
	20	20.2	Vehicles for Transporting Hazardous Materials
Indonesian Red Cross	6	6.2	Medical Treatment System
	14	14.1	Food Provision
	18	18.3	Construction of Temporary Housing and Emergency Restoration of Damaged Buildings
TELKOM	19	19.4	Telecommunications Facility
Regional Drinking Water Company	14	14.2	Water Provision
National Electricity Company	19	19.3	Electric Supply Facility
Company of Forestry	14	14.3	Landslide Mitigation
KAMLA	8	8.2	Sea Safety Control and Rescue
Water and Air Police	8	8.2	Sea Safety Control and Rescue
Fire Fighter	7	7.1	Fire Fighting Organization
	7	7.4	Fire Fighting Activity
	7	7.5	Initial Fire Fighting Activity
Commander of District Military	3	3.4	Military, etc.
SAR	15	15.1	Search for Missing and Treatment of Dead
BMG	5	5.1	Receiving and Transmitting Weather Forecasts and Warnings
Private Enterprises	11	11.3	Disaster Response Activities by Private Enterprises
Cooperation	9	9.3	Method of Removal
Army	5	5.1	Receive and Transmit of Forecasts and Warnings

1.3 Rupusdalops PBP Staff Mobilization

Responsible Agency:	Regional Secretary
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1) Mobilization Criteria

Bupati as a head of Rupusdalops PBP will mobilize staffs and implement relevant activities based on the criteria mentioned below.

Category	Mobilization Criteria
1 st Mobilization	1. When MMI 5 Scale Earthquake is observed and announced in Kabupaten Jember Region by BMG.
2 nd Mobilization	1. When MMI 6 Scale Earthquake is observed and announced in Kabupaten Jember Region by BMG.
3 rd Mobilization	1. When more than MMI 7 Scale Earthquake is observed and announced in Kabupaten Jember Region by BMG. 2. Tsunami Warning is announced in Kabupaten Jember Region by BMG.

2) Component of Mobilization

(1) 1st Mobilization

Each head of Agencies will mobilize number of staffs assigned to designated location or to their offices.

(2) 2nd Mobilization

Each head of Agencies will mobilize number of staffs assigned to designated location or to their offices. Head of Social Welfare Agency and Health Agency have to mobilize number of staffs to take a role in evacuation faculties,

Moreover, in case of occurrence of disaster outside working time, to the facilities that each agency hold jurisdiction over, staffs must be mobilized.

(3) 3rd Mobilization

All of staffs will be mobilized to the designated location or to their offices as assigned in advance.

3) Staff Mobilization

Staff mobilization of each agency is mentioned as below. Moreover, for 1st, and 2nd Mobilization, staffs in charge are designated in advance.

Agencies	Responsible Sector	1st Mobilization	2nd Mobilization	3rd Mobilization
Health Agency	3. Health	3	1/3 of Staffs in each agency	All Staffs
Public Works Agency	4. Rehabilitation. and Reconstruction	3		
Manpower and Transmigration Agency	6. Transportation	1		
Industry, Trading and Investment Agency	2. Social Aid	1		
Forestry and Plantation Agency	4. Rehabilitation. and Reconstruction	2		
Livestock and Fishery Agency	2. Social Aid	2		
Regional Incoming Agency	4. Rehabilitation. and Reconstruction	1		
Education Agency	1. Evacuation and Security	3		
Cleanliness and Live Environment Agency	4. Rehabilitation. and Reconstruction	3		
Irrigation Agency	4. Rehabilitation. and Reconstruction	2		
Social Agency	2. Social Aid	4		
Agriculture and Food Affairs Agency	2. Social Aid	2		
Cooperation, medium and small scale business Agency	2. Social Aid	1		
Transportation Agency	6. Transportation	3		
National Unity and Public Protection	1. Evacuation and Security	4		
Development Planning Board	4. Rehabilitation. and Reconstruction	2		
Population, Family Planning and Civil Registration Board	2. Social Aid	2		
Public Capacity Board	4. Rehabilitation. and Reconstruction	1		
Territorial Police Office	1. Evacuation and Security	3		
Information and Communication Office	5. Information and Publication	4		
Tourism Service Office	5. Information and Publication	2		
Dr. Soebandi Regional Public Hospital	3. Health	2		
Kalisat Regional Hospital	3. Health	2		
Balung Regional Public Hospital	3. Health	2		

Remark: For 1st and 2nd Mobilization, number of staff includes head of agencies.

4) Order of Staffs Mobilization

(1) Commander

Staff Mobilization is ordered by head of Rupusdalops PBP (Bupati)

(2) Order Transmission System

A. During working ours

Transmitted by telephone line or public radio system in PEMKAB



B. After working hours

Transmitted by telephone line



(3) Mobilization not Depend on Order

During working hours, due to malfunction of communication system, when order is not accessible, mobilize yourself by your own decision.

Moreover, when devastating disaster occurs, or a high risk of occurrence is anticipated after working hours, do not wait for mobilization order. Mobilized yourself to designate location based on mobilization, criteria for mobilization.

5) Mobilization Participant

Target at all the staffs belong PEMKAB. However, following staffs will be exempt from the audience.

1. Person who is ill or handicapped and have difficulty to conduct emergency response activities
2. Due to occurrence of disaster, staff is in sudden ill or injured, therefore, not possible to mobilize

1.4 Staff Mobilization for Tsunami Warnings

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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When BMG issues Tsunami warning, staff mobilization and relevant activities are implemented as follows.

1) Mobilization Criteria

When BMG issues Tsunami warning for coastal area in Kabupaten Jember.

2) Component of Mobilization

Each head of assigned Agencies will mobilize number of staffs assigned to designated location or to their offices.

3) Staff Mobilization

Staff mobilization of each assigned Agency is mentioned below.

Agencies	Staff Number
National Unity and Public Protection	4
Education Agency	3
Territorial Police Office	3
Fire Fighter Section of Public Works Agency	3
Transportation Agency	3
Information and Communication Office	4

4) Order of Staffs Mobilization

When BMG issues Tsunami warning after working hours and/or holidays, transportation agency will transmit the information to each head of assigned Agencies.

Each head of assigned Agencies will mobilize number of staffs .

CHAPTER 2. DISASTER INFORMATION GATHERING AND DISSEMINATION PLAN

It is crucial for emergency response to gather and disseminate accurate information on climate and earthquake promptly and precisely. Moreover, providing accurate disaster information to the community will avert panic and create smooth evacuation.

This chapter will explain about plan for information gathering and dissemination in the event of disaster.

2.1 Communication Tools

<i>Responsible Agency:</i>	<i>Transportation Agency, Information and Communication</i>
<i>Relevant Agency</i>	<i>All Type of Media, Army, Police</i>

For 2.1, refer to Section 3 Emergency Response Chapter 2, 2.1 in “Part 1: Rain and Storm Disaster Measures”

2.2 Establishment of Operation System of Disaster Communication System

<i>Responsible Agency:</i>	<i>Transportation Agency, Information and Communication</i>
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For 2.2, refer to Section 3 Emergency Response Chapter 2, 2.2 in “Part 1: Rain and Storm Disaster Measures”

2.3 Collection of Disaster Information

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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For 2.3, refer to Section 3 Emergency Response Chapter 2, 2.4 in “Part 1: Rain and Storm Disaster Measures”

2.4 Publication of Disaster Information

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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For 2.4, refer to Section 3 Emergency Response Chapter 2, 2.5 in “Part 1: Rain and Storm Disaster Measures”

CHAPTER 3. REQUEST FOR SUPPORTS

After a disaster occurs, RUPUSDALOPS-PBP (Emergency Response Headquarter) will request volunteer and related organizations support in case that Kabupaten Jember was unable to conduct emergency response and recovery activities without any external helps.

3.1 National and Province

<i>Responsible Agency:</i>	<i>Social Agency</i>
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3.2 Surrounding Kabupatens

<i>Responsible Agency:</i>	<i>Social Agency</i>
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3.3 Disaster Management Related Organizations

<i>Responsible Agency:</i>	<i>National Unit Agency</i>
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3.4 Military, etc.

<i>Responsible Agency:</i>	<i>Commander of District Military</i>
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3.5 Volunteers

<i>Responsible Agency:</i>	<i>National Unit Agency</i>
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For 3.1 to 3.5, refer to Section 3 Emergency Response Chapter 3, 3.1 to 3.5 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 4. SEDIMENT DISASTER MEASURES**4.1 Warning, Evacuation, and Guidance Measures**

<i>Responsible Agency:</i>	<i>National Unit Agency</i>
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4.2 Preventive Measures for Secondary Disaster

<i>Responsible Agency:</i>	<i>Irrigation Agency</i>
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4.3 Publication and Dissemination of Information to Community

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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For 4.1 to 4.3, refer to Section 3 Emergency Response Chapter 4, 4.1 to 4.3 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 5. TSUNAMI DISASTER MEASURES

When there is huge movement caused by earthquake at sea bottom, it is assumed that the tsunami occurs. In several cases, even earthquake felt only as small earthquake that occurred in the seas close to coastal area or in distant seas, huge tsunami could rush suddenly. In the case of 1994 East Java Tsunami, the earthquake was very small and most residents could not feel it, but enormous tsunami attacked the coast of East Java Province including Kabupaten Jember.

In this chapter, emergency response is planned when tsunami occurs.

5.1 Receiving and Transmitting Weather Forecasts and Warnings

Responsible Agency:	Transportation Agency, Army, Police, BMG
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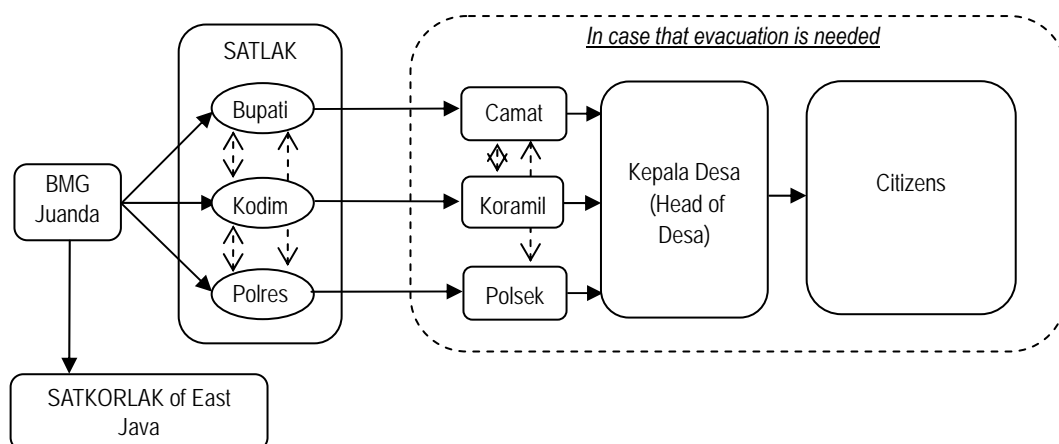
Since Tsunami might reach to coastal area in a short time after earthquake occurs, emergent evacuation is needed. When there is issue of tsunami warning, the warning should be transmitted promptly and properly by the following procedure.

1) Weather Forecast and Warning for Tsunami

BMG announces weather forecast and warning for tsunami.

2) System for Receiving and Transmitting Weather Forecast and Warning

Weather forecast and warning from BMG to Kabupaten will be received and transmitted by the following procedure. Necessity of evacuation is indicated by BMG and evacuation is ordered by Bupati.



5.2 Measures after Tsunami Occurs

<i>Responsible Agency:</i>	<i>SATLAK</i>
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1) Sea Surface Monitoring

When weather forecast and warning from BMG to Kabupaten is received or strong earthquake is felt around coastal area, and need to evacuate arises, warning should be promptly transmitted to residents and companies near coastal area through mosque loudspeaker and drum. Moreover, tsea surface monitoring will be conducted from safe position such as hill.

2) Evacuation Instruction / Directive

When warning from BMG to Kabupaten is received or abnormal condition is recognized, and need to evacuate arises, evacuation instruction/directive is promptly informed to the residents and the companies near coastal area through mosque loudspeaker and drum.

3) Report/Communication

When evacuation instruction /directive was issued for Tsunami, Bupati should be immediately reported the effect.

When evacuation instruction / directive was originally issued for Tsunami although there is no tsunami warnings announced by BMG, SATLAK would contact BMG and peripheral Kabupaten.

5.3 Evacuation without Transmission of Warnings

<i>Responsible Agency:</i>	<i>Bupati and Head of Village</i>
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Kabupaten Jember was seriously damaged by East JAVA Tsunami in 1994. Based on record, the average height of tsunami waves along the cost of Kabupaten Jember was 6-7m and it arrive 30-40 minute after the main shocks. Since the arrival time only apart of 30minutes, is insufficient for evacuation. Residents near coastal area have to secure themselves immediately to higher place without any tsunami warnings.

Therefore, the inhabitants near coastal area shall leave the area and evacuate to higher place when they feel the ground shock even if when it weak. It is important to have a clear idea that tsunami will come after earthquake near coastal area.

CHAPTER 6. RESCUE, FIRST AID, MEDICAL TREATMENT MEASURES

6.1 Rescue, First Aid, Medical Treatment Measures

<i>Responsible Agency:</i>	<i>Health Agency</i>
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For 6.1, refer to Section 3 Emergency Response Chapter 11, 11.5 in “Part 1: Rain and Storm Disaster Measures”.

6.2 Medical Treatment System

<i>Responsible Agency:</i>	<i>Health Agency, Red Cross</i>
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1) Medical Aid Headquarter

In order to cope with big disaster occurrence, Medical Aid Headquarter shall be established under monitor of Health Agency. Main purpose of this headquarter is to act as center for medical aid activities and take necessary coordination for dispatching medical aid team, transportation and accepting patients.

2) Activities of Medical Aid Headquarter

Following activities shall be conducted by Medical Aid Headquarter in corporation with local doctors association.

1. Collection of disaster medical information such as damages for hospital, health center, association of doctors, dentists, nurses and pharmaceuticals through telecommunication system.
2. Information collection for medical activities by medical agencies including working situation of medical staffs, insufficient medicines and equipments, and available beds.
3. Local medical aid center(SPOT) shall be opened near disaster affected area in corporation with existing nearest hospital.
4. Necessary medicines and equipments for local medical aid center (SPOT) shall be collected and provided by Staff of Headquarter utilizing stocks and available facilities.

5. Information such as place and service on local medical aid center, hospitals and clinics shall be disseminated to residents as disaster medical information.
6. Information on hospital capacity outside of disaster affected area shall be collected and provided.
7. Heavily injured patients shall be transported to outside hospitals from disaster affected area by car or helicopter.
8. Dispatching doctors for charnel house to check corpse and take coordination for acceptance of medical support team from outside of disaster affected area.
9. Management of medical support and establish distribution center of medical equipments.

6.3 Procurement of Medicines and Medical Equipments

<i>Responsible Agency:</i>	<i>Health Agency</i>
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For 6.3, refer to Section 3 Emergency Response Chapter 11, 11.6 in “Part 1: Rain and Storm Disaster Measures”.

6.4 Mental Health Measures

<i>Responsible Agency:</i>	<i>Health Agency, Religion Board</i>
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PTSDS is popular sickness caused by strong impact of big disaster. In order to care and ease mental condition for patients such as elderly and younger generation, Health Agency shall take various measures in corporation with health center, doctors association, and medical volunteer for long term point of view.

CHAPTER 7. FIRE FIGHTING MEASURES CAUSED BY EARTHQUAKE

In case that occurrence of big disaster is or will be expected in Kabupaten Jember, emergency response system by Fire Fighting Office shall be planned as follow.

7.1 Fire Fighting Organization

<i>Responsible Agency:</i>	<i>Fire Fighting Office</i>
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7.2 Emergency Call and Mobilization

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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For 7.1 to 7.2, refer to Section 3 Emergency Response Chapter 5, 5.1 to 5.2 in “Part 1: Rain and Storm Disaster Measures”.

7.3 Information Collection System

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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1) Method of Information Collection

Information on disaster situation and fire fighting shall be collected promptly and smoothly by utilizing available telecommunication network and related information sources in order to apply earthquake fire fighting activity.

2) Information Collection Items

Following information shall be collected to prevent fire extension, secondary disaster and life saving for confined people in collapsed building by fire.

- fire occurrence and extension
- damage situation of human casualties for necessary rescue operation
- necessity of evacuation and evacuation condition
- damage situation of road, bridge, tunnel, port and railway
- damage situation of water pipeline, electricity and gas network.
- available support equipments including fire fighting trucks and boat.

3) Information Sharing Method

Fire fighting communication network shall be utilized for information sharing. Radio system, internet and possible sharing system shall also be used.

7.4 Fire Fighting Activity

<i>Responsible Agency:</i>	<i>Fire Fighting Office</i>
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Fire Fighting Office shall take necessary activities to mitigate disaster damage and protect human lives and assets. Following activities shall be taken.

- Collection of disaster information such as weather condition, water level, high tide, damage situation, and fire fighting operation.
- Patrolling by fire fighting staffs to check damage situation and disaster potential.
- Dissemination of weather condition and evacuation information to community.
- Giving guidance on evacuation activity of community in case of evacuation is ordered.
- Rescue operation shall be conducted in cooperation with community disaster management organizations or related agencies.
- Damage protection activities shall be taken to prevent secondary damage due to landslide, and high tide in cooperation with related agencies.

7.5 Initial Fire Fighting Activity

<i>Responsible Agency:</i>	<i>Fire Fighting Office</i>
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1) Initial Fire Fighting Activity by Community

After strong earthquake, fire will be occurred immediately at many places. In this case, existing fire fighting capacity is not enough to cope with the situation. Therefore, community should conduct initial fire fighting to prevent fire extension using available equipments.

2) Initial Fire Fighting Activity by Residents

Residents shall patrol around their own community to check fire occurrence just after strong earthquake. In case of fire occurrence, residents shall directly inform fire fighting office and conduct initial fire fighting by themselves.

3) Cooperation with Community and Enterprises

In house fire fighting team organized by individual enterprise shall cooperate to initial fire fighting activity at surrounding communities.

CHAPTER 8. SAFETY CONTROL/TRANSPORTATION MEASURES**8.1 Security Control Measures by Police**

<i>Responsible Agency:</i>	<i>Indonesian Police</i>
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8.2 Sea Safety Control and Rescue

<i>Responsible Agency:</i>	<i>KAMLA and Air and Water Police</i>
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8.3 Road Transportation Management

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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For 8.1 to 8.3, refer to Section 3 Emergency Response Chapter 6, 6.1 to 6.3 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 9. DEBRIS REMOVAL MEASURES

Debris such as rocks, sand and gravels, woods and bamboo, etc, generated by landslide or building collapse will be a barrier not only for road transportation network but also for smooth operation of rescue activities in disaster affected area. Moreover, this debris will cause secondary damage such as flooding in river channel. Therefore, debris removal is important measures for emergency disaster management. Following measures are planned.

9.1 Target of Removal

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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9.2 Effectors of Removal

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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9.3 Method of Removal

<i>Responsible Agency:</i>	<i>Cooperation</i>
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9.4 Temporary Storage Sites for Debris

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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For 9.1 to 9.4, refer to Section 3 Emergency Response Chapter 7, 7.1 to 7.4 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 10. EMERGENCY TRANSPORTATION MEASURES

Demand for emergency transportations will rise when big disaster occurs such as transportation of victims and refugees, emergency response staffs and supplies. In order to conduct quick and adequate transportation for disaster relief activities, emergency transportation measure are planed as follows.

10.1 Securing Transport Equipments

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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10.2 Securing Transportation Network

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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For 10.1 to 10.2, refer to Section 3 Emergency Response Chapter 8, 8.1 to 8.2 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 11. DISASTER RESPONSE ACTIVITIES BY COMMUNITY AND PRIVATE COMPANIES

It is totally depend on mutual disaster damage mitigation and prevention activities by community and private companies to secure safety individuals, family and community member. The following measures shall be taken by community and private companies.

11.1 Disaster Response Activities by Citizens

<i>Responsible Agency:</i>	<i>Bupati</i>
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11.2 Disaster Response Activities by Community Groups

<i>Responsible Agency:</i>	<i>Bupati</i>
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11.3 Disaster Response Activities by Private Companies

<i>Responsible Agency:</i>	<i>Private Companies</i>
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For 11.1 to 11.3, refer to Section 3 Emergency Response Chapter 9, 9.1 to 9.3 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 12. EVACUATION MEASURES

When disaster occurs and if there is a risk of secondary disaster, or there are vulnerable houses landslide, etc, it is necessary to secure residents safety by evacuating to safe area temporarily.

This chapter will elaborate plan for evacuation measures, such as dissemination of evacuation preparedness information, evacuation guidance, or order, call for evacuation derivation/transfer, opening of evacuation site.

12.1 Evacuation Plan

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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1) Procedure of Evacuation

Resident evacuation after occurrence of earthquake is basically carried out by self evacuation. However, considering uncertainty of road network damage, evacuation route could not be determined. Selection of evacuation routes could be based on actual damage conditions.

2) Evacuation Action

(1) Evacuation Guidance / Order (or Self Evacuation)

After occurrence of earthquake,

1. When residential house is totally or moderately collapsed and feels danger or anxious of human life,
2. When there is risks of fire outbreak or spreading of fire,
3. When there is risks of landslide,
4. When Tsunami warning is announced and houses under risk, and
5. When PEMKAB announced evacuation guidance and order

Community is advised to start evacuation promptly.

In principle, evacuation activities to designated evacuateion are self-evacuation. However, for vulnerable groups, Community Organization for Disaster Risk Management together with neighbor resident shall cooperate to carry out evacuation.

(2) Temporary Evacuation

As initial step, community will temporary evacuate to nearest evacuation sites or facilities such as schools, mosques, public buildings, and parks for risk aversion. After arrival at evacuation sites or facilities, attempt to report on personal and their family safety confirmation and building condition of their house to administrators of the areas. After some time, if safety of the house is confirmed, it was advised to return back to the house.

(3) Temporary Evacuation Facility

After occurrence of earthquake, when houses are damaged or burned, or houses or still under risk, disaster victims are accepted at evacuation facilities after safety confirmation of facilities.

(4) Temporary Housings

After establishment of evacuation facilities, when temporary housings are constructed, disaster victims are transferred to these temporary housings considering priority for those with elderly groups.

12.2 Announcement of Evacuation Warnings

Responsible Agency:	National Unity Agency
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In occurrence of disaster, it is necessary to protect human life from disaster, and to prevent spreading of damages, if necessary, by following procedures of evacuation (represent evacuation).

Type of Warnings	Description
Evacuation Guidance	When disaster occurs or there is high risk of occurrence of disaster, evacuation warning is announced to community
Evacuation Order	Devastating disaster occurs or there is high risk of occurrence of devastating disaster, evacuation order is announced to communities. This order is stronger than Evacuation Guidance

1) Decision Criteria of Evacuation Warnings

1. When Tsunami Warning is announced and there is risk of buildings collapse and inundation by Tsunami
2. When there is risk of building collapse by after shocks, or fire outbreak, and danger of resident life is anticipated
3. When land slide is occurred, or there are risk of occurrence, and danger of resident life is anticipated
4. When head of Rupusdalops PBP find necessity to evacuate by considering disaster condition.

2) Person who give Evacuation Warning and Order

When there is danger on resident life, Bupati will announce warning to resident on the area or in case of emergency, will order evacuation. However, if Bupati is absent or can not execute his duties, by following order, substitute can act on behalf of Bupati have the same authority to give evacuation warnings.

<ol style="list-style-type: none"> 1. Vice Bupati 2. Economics and Development Assistant 3. Head of National Unity Agency
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(1) Substitution by Supporting Organizations

When there is upcoming danger due to disaster, and no time asking Bupati decision , or Bupati is absent, any related organization could substitute the authority of Bupati to evacuate residents.

After announcement, related organizations that gave evacuation warnings, will report to Rupusdalops PBP promptly.

(2) Substitution by Governor

Due to devastating disaster, if most of roles of Rupusdalops PBP in Kabupaten cannot be implemented, Governor has power to take over all or part of authorities of Bupati. Governor will announce beginning and end of the take over. When Governor substitutes the role of Bupati, he will report to Bupati about activities the take over. Then, whenever Bupati have recovered and could execute his duty, Governor will return the roles to Bupati immediately.

3) Contents of Evacuation Warnings

Person who announced evacuation warnings will warn or order evacuation by clearly mentioning the following items to community.

1. Reason of necessity of evacuation
2. Target area of evacuation guidance or order
3. Location of Evacuation Site
4. Evacuation Route
5. Caution Points for Evacuation

4) Deliverance of Evacuation Warnings

Deliverance of evacuation warnings is done by radio communication, mosque loudspeaker, van, loudspeaker, traditional emergency bell (Kentongan).

5) Reporting, and etc

(1) Report to Related Organizations

When Bupati or any related agencies announce evacuation warnings, , report it to Governor about the situation, and other related organizations.

(2) Dissemination to Community

When evacuation warnings are announced, or received notification that other related organizations gave evacuation warnings, the situation should be disseminated to community by using communication system of PEMKAB. Moreover,, when evacuation warnings are announced update, situation will be informed to community.

6) Announcement of Evacuation Warnings

Bupati will announce evacuation warnings, when there was emergency condition. He will announce immediately, and report to Governor.

12.3 Set up of Alert Area

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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12.4 Advice for Evacuation and Transfer

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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12.5 Set up of Temporary Evacuation Site and Its Management and Operation

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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For 12.3 to 12.5, refer to Section 3 Emergency Response Chapter 10, 10.2 to 10.4 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 13. PANIC PREVENTION MEASURES

Strong earthquake will cause various types of disasters simultaneously at various places. Social panic will be expected to happen due to disaster. In order to prevent social panic, following shall be planned.

13.1 Panic Prevention due to Lack of Information

<i>Responsible Agency:</i>	<i>Police</i>
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Immediately after occurrence of strong earthquake disaster, following measures shall be taken to prevent social panic within community due to heavy concentration of telecommunication, lack of information by mass media, electricity black out , incorrect information and flooding of information etc.

1) Provision of Necessary Information on Disaster Situation

Necessary information will change sequentially from immediately after occurrence of earthquake until recovery or restoration phase. In order to avoid social panic due to information flooding, of information, accurate information on disaster situation shall be provided. Following points are planned.

1. Immediately after occurrence of earthquake, disaster information such as disaster situation, tsunami, after shock, damage, prevention of secondary disaster, evacuation, rescue operation and response of government to disaster will be mainly and actively provided. In this phase, attention will pay on social stability and information accuracy.
2. Information oo provision of water, foods and daily commodities will be disseminated according to settle down social panic which happened just after disaster occurrence and damage situation.
3. Information on lifeline facilities such as reopening of lifeline service, transportation, commodity flow, medical service, education and administrative information for reconstruction will be provided after 3 days of disaster occurrence.

2) Method of Information Dissemination

Various types of information dissemination measures will be utilized such as radio system, TV, internet, SMS and helicopter to provide necessary disaster information to community. Newsletter will be published just after disaster occurs.

13.2 Transport for Panic Prevention

<i>Responsible Agency:</i>	<i>Transportation Agency</i>
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In order to prevent fire due to disaster occurrence, following shall be planned for emergency transportation staffs and equipments.

1) Measures by PEMKAB

1. Rupusdalops PBP shall acquire correct information on disaster situation through set of road transportation information.
2. Barriers including vehicles on the main national road networks connecting surrounding Kabupaten shall be removed smoothly by relevant agency and communication network shall be established along direct or alternative route of general vehicles.
3. Removal of barriers and necessary landfill for emergency road network shall be given high priority.
4. Information on prohibition for general vehicles to enter emergency vehicle route as well as alternative route shall be announced through various media.

2) Measures by Disaster Management Agency

1. In order to secure smooth transportation for emergency vehicles and evacuation, Police shall control or prohibit evacuation by private car.
2. Police will control transportation at disaster affected area.
3. Responsible agency of road management will remove barriers on the road.

13.3 Panic Prevention during Evacuation

<i>Responsible Agency:</i>	<i>Bupati</i>
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In case of announcement of evacuation order or instruction for community including commuters, students and visitors to reduce human casualties at disaster occurrence, following measures shall be planned.

1) Measures by PEMKAB

1. Evacuation order/instruction shall be disseminated through existing radio communication system. Public announcement car will be also used in consideration of road condition and fire extension.
2. Management staffs of evacuation site will provide information and take proper actions.
3. After identification recognition of safety in damaged area, persons who can go back to their own house will return to home, while persons who cannot go back to their own house will stay at evacuation site.

2) Measures by Disaster Management Agency

1. Related agencies will take necessary evacuation measures based on their responsibilities.
2. Police shall conduct regular patrol in disaster affected area and evacuation sites in case of emergency evacuation take place.

13.4 Panic Prevention at Public Facilities

<i>Responsible Agency:</i>	<i>Police</i>
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Management of public facilities, which could accept many people including railway terminal and high-rise building, shall take following disaster management activities to secure safety of users.

1. Disseminate warning and damage information as well as disaster situation to public facilities users.
2. Utilize own facility for evacuation and guide users to regional evacuation site if necessary.
3. In case of evacuation, priority shall be put for handicapped, elderly, infant, patients and pregnant women. Special care shall be provided if necessary.
4. In case of difficulty of self-evacuation and rescue/help, supporting staff and equipments, barriers removal and transportation control etc, shall be requested to related agency.

CHAPTER 14. RESCUE/AID MEASURES

In occurrence of big disaster, many disaster affected people will lose their cooking equipments including food supply itself and no availability of lifeline functions due to collapse of houses.. Moreover, disaster affected people may not get their daily food in shops or markets because of unusual condition of big disaster. Therefore, it will be necessary to supply water, food and daily commodities to disaster affected people to maintain social stability.

It is necessary to conduct fast cleaning of huge volume of waste and debris generated by big disaster and also necessary measures shall be taken to prevent epidemics in damaged area. Medical aid for injured people and rescue and search operation for missing people are also important activities. Based on above points, following items are planned.

14.1 Food Provision

<i>Responsible Agency:</i>	<i>Social Agency, Red Cross</i>
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14.2 Water Provision

<i>Responsible Agency:</i>	<i>Regional Drinking Water Company</i>
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14.3 Daily Commodity Provision

<i>Responsible Agency:</i>	<i>Social Agency, Transportation Agency</i>
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14.4 Acceptance of Goods from outside Disaster Affected Area

<i>Responsible Agency:</i>	<i>Social Agency</i>
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For 14.1 to 14.4, refer to Section 3 Emergency Response Chapter 11, 11.1 to 11.4 in “Part 1: Rain and Storm Disaster Measures”.

14.5 Setting up of Temporary Toilet

<i>Responsible Agency:</i>	<i>Health Agency, Cleanliness and Environment Agency</i>
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Temporary toilet shall be set up at evacuation site based on the number of refugee and term of evacuation. It shall be set at public spaces such as park for those who cannot utilize own toilet due to house damage. Sanitary condition of temporary toilet shall be kept by responsible agency and community people.

CHAPTER 15. SEARCH FOR MISSING AND TREATMENT OF DEAD

15.1 Search for Missing and Treatment of Dead

<i>Responsible Agency:</i>	<i>SAR, Health Agency, National Unity Agency</i>
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For 15.1, refer to Section 3 Emergency Response Chapter 11, 11.11 in “Part 1: Rain and Storm Disaster Measures”.

15.2 Autopsy and Transport of Dead

<i>Responsible Agency:</i>	<i>Health Agency</i>
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An autopsy shall be conducted by police at first. Dead body will be transported to temporary medical treatment site or nearest hospital by responsible agency in corporation with community members or volunteers.

15.3 Identification of Dead

<i>Responsible Agency:</i>	<i>Health Agency</i>
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Charnel house shall be opened close to disaster affected area to accept dead body.. Personal identification such as gender, size, worn clothes, age and specific characteristics of the body will be checked in detail and recorded by medical doctors.

15.4 Treatment of Dead

<i>Responsible Agency:</i>	<i>Health Agency</i>
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Medical doctors and related experts shall conduct necessary treatment for dead body such as detailed check of injured, give necessary operation, cleaning , etc. After treatment, based on personal identification data, dead body will be transferred to family.

15.5 Bury or Cremation of Dead

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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In case of the total number of casualty is limited, funeral and bury of dead shall be conducted by family. However, in case of huge number of casualty by big disaster, it is impossible to conduct bury individually. Bupati of Kabupaten shall order mass burial of dead in case of big disaster.

15.6 Provision of Information to Community

<i>Responsible Agency:</i>	<i>Information and Communication</i>
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Indonesian Red Cross will disseminate photographs and recorded characteristics of victims who not yet identified by any family or relatives, to community through community network or Tracing and Mailing Service (TMS).

CHAPTER 16. CLEANING, HYGIENE, AND EPIDEMIC PREVENTION MEASURES

16.1 Health Care and Hygiene Measures

<i>Responsible Agency:</i>	<i>Health Agency</i>
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16.2 Solid Waste Management

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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16.3 Human Waste Management

<i>Responsible Agency:</i>	<i>Cleanliness and Environment Agency</i>
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16.4 Epidemic Preventive Measures

<i>Responsible Agency:</i>	<i>Health Agency</i>
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For 16.1 to 16.4, refer to Section 3 Emergency Response Chapter 11, 11.7 to 11.10 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 17. SCHOOL DISASTER MANAGEMENT MEASURES

In occurrence of big disaster, safety measures for pupils and student, school facilities and provision of temporary school education shall be planned as follows.

17.1 Management of School Facilities

<i>Responsible Agency:</i>	<i>Education Agency</i>
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17.2 Measures for Students and Pupils

<i>Responsible Agency:</i>	<i>Education Agency</i>
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17.3 Procurement and Provision of School Supplies, etc

<i>Responsible Agency:</i>	<i>Education Agency</i>
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17.4 Management of Education Facilities

<i>Responsible Agency:</i>	<i>Education Agency</i>
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For 17.1 to 17.4, refer to Section 3 Emergency Response Chapter 12, 12.1 to 12.4 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 18. RESIDENCE AND BUILDING MANAGEMENT

Residential buildings will be damaged by strong earthquake and there will be many people lose their houses. In order to support these refugees, construction of temporary houses and reparation of damaged houses shall be planned as follow.

18.1 Investigation of Damaged Buildings

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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1) Preparation

Damage information will be collected to understand volume of damage. Public Works Agency will disseminate preparation of surveyors and survey tools including detailed map, assessment category and announcement of damaged house investigation.

2) Survey Method

As a primary survey and evaluation, two surveyors will conduct visual observation from outside of the house. Survey result will be classified into three categories and displayed at the entrance of surveyed house. Based on the primary survey, detailed survey for certain buildings will be reported by construction experts.

3) Preparation of Damage Houses List

Survey results will be compiled into housing damaged houses lists by Public Works Agency and utilized for necessary verification in future.

18.2 Survey of Damaged Residential Land

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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18.3 Construction of Temporary Housing and Emergency Restoration of Damaged Buildings

<i>Responsible Agency:</i>	<i>Public Works Agency, Red Cross</i>
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For 18.2 and 18.3, refer to Section 3 Emergency Response Chapter 13, 13.2 and 13.3 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 19. EMERGENCY MEASURES FOR LIFELINE

If daily utilities such as water, sewerage, electricity, telecommunications, etc. were damaged, by disaster, prompt and precise emergency response shall be planned as follows;

19.1 Information of Lifeline Recovery

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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19.2 Water Supply Facility

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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19.3 Electric Supply Facility

<i>Responsible Agency:</i>	<i>National Electric Company</i>
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19.4 Telecommunication Facility

<i>Responsible Agency:</i>	<i>TELKOM</i>
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For 19.1 to 19.4, refer to Section 3 Emergency Response Chapter 14, 14.1 to 14.4 in “Part 1: Rain and Storm Disaster Measures”.

CHAPTER 20. HAZARDOUS MATERIAL MANAGEMENT

20.1 Hazardous Materials Storage Facility

<i>Responsible Agency:</i>	<i>Police</i>
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1) Information of Hazardous Materials Storage Facility

Hazardous materials storage facilities for petroleum liquids, explosive, high pressure gas, LPG, Toxic Agents, and dangerous materials.

2) Preparation of Preventive Activity for Secondary Disaster

To prevent from occurrence of secondary disaster by earthquake at hazardous materials storage facilities, PEMKAB and Companies will prepare necessary efforts.

(1) Measures by PEMKAB

Rupusdalops PBP gather information regarding safety guarantee of hazardous materials storage facilities, and carry out necessary measures to prevent occurrence of secondary disaster.

(2) Measures by Provider of Hazardous Materials

Administrator, security manager, and company manager will carry out security measures in the facility, and will report its measure condition to Rupusdalops PBP.

20.2 Vehicles Transporting Hazardous Materials

<i>Responsible Agency:</i>	<i>Police</i>
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1) Preparation of Preventive Activity for Secondary Disaster

To prevent occurrence of secondary disaster by earthquake at vehicles transporting hazardous materials, PEMKAB and Transportation Company, provider of hazardous materials and its management will prepare necessary efforts.

(1) Measures by PEMKAB

Rupusdalops PBP gather information regarding safety guarantee of hazardous materials storage facility, and carry out necessary measures to prevent occurrence of secondary disaster.

(2) Measures by Provider of Hazardous Materials

Transportation Company, provider of hazardous material and its management will stop its operation if there is risk of outflow or explosion, and carries out emergency inspection, fire prevention, prevent leakage of hazardous materials, and report to police and army immediately.

CHAPTER 21. ACCEPTANCE PLAN OF FOREIGN ASSISTANCE

International assistance will be expected for large-scale natural disaster. Emergency rescue operations including search and rescue, medical service, construction and management of evacuation facilities will be the first necessary items for disaster management. International aid teams will join immediately after disaster occurs. In order to accept international assistance for emergency operation, basic acceptance plan including information sharing with national and provincial organization and necessary procedures should be prepared.

21.1 Information Sharing with National and Provincial Organization

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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21.2 Acceptance of Foreign Assistance

<i>Responsible Agency:</i>	<i>National Unity Agency</i>
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For 21.1 to 21.2, refer to Section 3 Emergency Response Chapter 15, 15.1 to 15.2 in “Part 1: Rain and Storm Disaster Measures”.

Section 4: Post-Disaster (Rehabilitation and Reconstruction Plan)

Earthquake and Tsunami disasters cause extensive damages. Demolition of houses, landslides, tsunami, liquefaction, etc. caused by Earthquake is extremely disturbing resident's daily life and activities.

Rehabilitation and Reconstruction Planning are management plans to be implemented by PEMKAB and related organizations for recovering from damages as soon as possible so the residents would be able to live in normally everyday without any trouble.

CHAPTER 1. REHABILITATION PLAN

For Rehabilitation Management, prompt recovery on daily life and facilities of disaster victims, industries, etc. are expected. PEMKAB plans, to return resident's lives back to normal by establishing service post, temporary housing management, emergency funding, etc. and so on.

1.1 Recovery Measures to Normal Life

<i>Responsible Agency:</i>	<i>Social Agency</i>
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1.2 Rehabilitation of Public Facilities

<i>Responsible Agency:</i>	<i>Public Works Agency</i>
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1.3 Declaration of National Disaster

<i>Responsible Agency:</i>	<i>Bupati</i>
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For 1.1 to 1.3, refer to Section 4 Post-Disaster Chapter 1, 1.1 to 1.3 in "Part 1: Rain and Storm Disaster Measures"

CHAPTER 2. RECONSTRUCTION PLAN

In order to create disaster-resilient city, the following basic concepts are formulated.

2.1 Gathering of Relevant Information for Preparation of Reconstruction

<i>Responsible Agency:</i>	<i>Development Planning Board</i>
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2.2 Basic Concept Formulation of Urban Reconstruction

<i>Responsible Agency:</i>	<i>Development Planning Board</i>
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For 2.1 to 2.2, refer to Section 4 Post-Disaster Chapter 2, 2.1 to 2.2 in “Part 1: Rain and Storm Disaster Measures”