

Women's Preparation to Encounter Flood Disaster in East Jakarta, Jakarta *Kesiapsiagaan Wanita Untuk Menghadapi Bencana Banjir di Jakarta Timur, Jakarta Raya*

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Abstract

The article aims to explore women's level of preparedness in facing flood disaster in East Jakarta, Jakarta. This research was carried out from September 2016 to May 2017. Descriptive quantitative research method was used in the research. Based on the research results, it could be concluded that women's level preparedness to encounter flood disaster in East Jakarta in 2013-2016 was under the ready category. On the knowledge parameter, the attitudes in the two areas are under the same category which is very ready. It indicates that the respondents have excellent knowledge on flood disaster. The parameter of emergency response plan is under the same category of almost ready. There are some indicators that show the low rate of the precaution for disaster preparation; emergency telephone numbers and addresses as well as the training of evacuation and first aids. The early warning system parameter shows the low results. For the affected area of flood disaster in 2013-2016, it is under the category of almost ready. In the area, there have been established some information sources through social media, and all citizens in the area are not entirely involved. Moreover, for the affected area of flood disaster in 2016 it is under the category of almost ready because the citizens are not familiar with the information of flood disaster early warning through social media. Moreover, in the parameter of sources mobilization, it is under the category of almost ready for low participation in the training of flood disaster early warning, skill and funding as well as logistic that the respondents could not prepare well.

Keywords preparedness, women, disaster, flood

Abstrak

Artikel ini bertujuan untuk menganalisis tahap kesiapsiagaan golongan wanita bagi menghadapi bencana banjir di Jakarta Timur, Jakarta Raya. Kajian ini dijalankan dari September 2016 hingga Mei 2017. Kaedah kajian yang digunakan adalah kuantitatif deskriptif. Berdasarkan hasil kajian, dapat disimpulkan bahawa tahap kesiapsiagaan wanita bagi menghadapi bencana banjir di Jakarta Timur sepanjang tempoh 2013-2016 berada di kategori bersedia. Dari segi parameter pengetahuan, sikap di kedua-dua kawasan adalah berada pada kategori yang sama iaitu sangat bersedia. Ini menunjukkan bahawa responden memiliki pengetahuan yang mantap mengenai bencana banjir. Parameter pelan tindakan kecemasan adalah berada pada kategori yang sama iaitu hampir bersedia. Terdapat beberapa petunjuk yang menunjukkan kadar penyediaan yang rendah bagi kesiapsiagaan bencana; nombor telefon kecemasan dan alamat serta latihan pemindahan dan pertolongan cemas. Parameter sistem amaran awal menunjukkan keputusan yang rendah. Bagi kawasan yang terjejas oleh bencana banjir pada 2013-2016, ianya berada pada kategori hampir bersedia. Di kawasan tersebut telah diwujudkan beberapa sumber maklumat melalui media sosial, dan tidak semua penduduk di kawasan tersebut terlibat secara keseluruhan. Tambahan pula, kawasan terjejas bencana banjir pada 2016 berada pada kategori hampir bersedia disebabkan penduduk tidak biasa dengan maklumat amaran awal bencana banjir melalui media sosial. Di samping itu, bagi parameter pengedaran sumber ianya berada pada kategori hampir bersedia kerana penglibatan yang rendah dalam latihan amaran awal bencana banjir, kemahiran dan pembiayaan serta logistik yang menyebabkan responden tidak dapat bersiap siaga dengan lebih baik.

Kata kunci kesiapsiagaan, wanita, bencana, banjir

INTRODUCTION

Forty percent or 24,000 hectares of Greater Jakarta Province's territory are located lower than sea level. There are thirteen rivers and the estuaries of the rivers are in Java Sea. The province is a big city with the highest population in Java as well as in Indonesia because it is an attractive city as the center of national economic activities in Indonesia (PT Mirah Sakethi, 2010). High population growth increases pressure to human environment in the province. The combination of low geographical condition, the flow of many rivers and the several destruction of life environment due to the population growth makes Greater Jakarta Province vulnerable to flood disaster.

According to the statistics data of BPBD Provinsi DKI Jakarta, flood cases from January to September 2016 in the territory of East Jakarta District is the most frequent area if compared to others in Greater Jakarta Province. Moreover, from the data of BPBD Provinsi DKI Jakarta, flood cases in East Jakarta Sub-District in 2015 occur in 24 Sub-Districts and 57 administrative villages (*Kelurahan*). Total number of 20,592 household heads and 70,059 people suffer the flood disaster impact. The flood disaster cases cause a total loss of resources and lives.

Many parties do not consider the importance of a good disaster management such as for flood disaster. In this matter it should have a disaster management system with that addresses self-preparedness against flood disaster, disaster risk reduction and public protection from flood disaster (Ramli, 2010). An important phase in the disaster management before a disaster occurs is preparedness. It is a series of activities conducted to anticipate disaster in systematic ways as well as through efficient and effective measures (Ramli, 2010). There are four parameters to measure the preparedness level, i.e. (i) knowledge and attitude towards disaster risks, (ii) disaster emergency response plans, (iii) disaster emergency system, and (iv) the ability to mobilize resources (LIPI - UNESCO/ISDR, 2006).

The public has an important role in disaster management process. There are many initiatives when encountering disaster threat in Greater Jakarta Province particularly flood disaster. The efforts are realized in a form of activities from public consciousness, mapping of potential disaster areas, constructing and preparing for evacuation lines, early flood warning, establishment of disaster preparedness groups and others (BPBD DKI Jakarta, 2013). All of these are carried out to protect the public from the danger of flood disaster impact so that these can reduce loss of lives.

Household is the smallest unit in a public structure that describes unity based on membership and it consists of husband, wife or husband, wife and their children or father and his children or mother and her children (Sajogyo, 1985). The wife as household mothers play an important role particularly in the framework of guiding and educating children as well as household management in which the role of women as household mothers is very dominant (Notopuro, 1984). In relation to women's active role in the household particularly household mothers, they are expected to be able to also play a role in overcoming and reducing flood disaster impact. The ability of women exceeds men in maintaining household survive so that they are reliable for preparedness against flood disaster when it befalls their households. Women as household mothers in general spend so much time inside the house if compared to household heads or husbands who earn a leaving outside the household. Therefore, they are able to play an active role against flood disaster which in fact becomes public responsibility. For these reasons, the writers are attracted to carry out a research on the women preparedness against flood disaster in the territory of East Jakarta District.

RESEARCH METHODS

The research aims at knowing the level of how women's preparedness in encountering floods disaster in East Jakarta District. The research method used in this study is descriptive method using the survey approach. The data collection method uses purposive sampling of household mothers who live in the areas with frequent occurrence of flood disaster in the period of 2013-2016 and new areas where flood disaster occurred in 2016 as well as those with senior high school education. The data analysis uses the preparedness index analysis.

Preparedness Index Analysis

The index analysis is used in this research to explore the public preparedness level against flood disaster. The index level in this research covers index per parameter, i.e. knowledge and attitude (KA), emergency planning (EP), Warning System (WS) and Resource Mobilization Capacity (RMC) The higher the index level means the higher the preparedness level of the researched subjects (LIPI – UNESCO/ISDR, 2006). Public preparedness level in this study is categorized into five levels as follows:

Table 1 Preparedness levels

No.	Value Index	Categories
1	80 – 100	Very Ready
2	65 – 79	Ready
3	55 – 64	Almost Ready
4	40 – 54	Less Ready
5	Less than 40 (0 – 39)	Not yet ready

Source: LIPI – UNESCO/ISDR (2006)

Index per parameter for households in this study uses the aggregate index number and it is not measured. It means that all questions in the parameter have the same weight. The determination of the index value for each parameter is calculated on the basis of the following formulation (LIPI – UNESCO/ISDR, 2006):

$$\text{Index} = \frac{\text{Total real score parameter}}{\text{Maximum score parameter}} \times 100$$

Index Analysis of Individuals and Households (RT)

The aggregate index of some parameters is calculated using the aggregate measure index. It means that each parameter has different weight. In short, the aggregate index number is achieved with the following formulation (LIPI – UNESCO/ISDR, 2006):

$$\text{Individual and Household Index} = 0,45 * \text{index KA} + 0,35 * \text{index EP} + 0,15 * \text{index RMC} + 0,05 * \text{index WS}$$

Women's Preparedness Based on Flood Impacted Areas

The women's preparedness level is based on the division of research areas into two, i.e. areas impacted with flood in the period of 2013-2016 and those impacted with flood in 2016. The following table 2 shows the women's preparedness level per parameter based on flood impacted areas:

Table 2 Preparedness level per parameter based on flood impacted areas

No	Parameter	Flood Impacted Areas in Period of 2013-2016		Flood Impacted Areas in 2016	
		Index	Category	Index	Category
1.	KA	90	Very Ready	93	Very Ready
2.	EP	63	Almost Ready	57	Almost Ready
3.	WS	40	Less Ready	27	Not Yet Ready
4.	RMC	30	Not Yet Ready	22	Not Yet Ready

Notes: KA (*Knowledge and Attitude*); EP (*Emergency Planning*); WS (*Warning System*); RMC (*Resource Mobilization Capacity*)

$$\text{Index} = \frac{\text{Total of real parameter score}}{\text{Maximum parameter score}} \times 100$$

RESULTS AND DISCUSSION

Women's Preparedness in Flood Impacted Areas in the Period of 2013-2016

The flood impacted areas have suffered flood disaster from 2013 to 2016. In this research there are 13 administrative villages in East Jakarta District that suffered the flood disaster in this period. It occurs because the areas are near from river or these are located in lowland areas. Moreover, there are many slums along the riverbank. It inhibits river water flow so that river water cannot be accommodated. Therefore, the areas suffer flood when rainy season arrives.

From Table 2, the flood impact areas in the period of 2013-2016 for the parameter of Knowledge and Attitude (KA) shows the index value of 90 hence, falls under the very ready category. It means that the respondents have knowledge on the definition of flood disaster, the causes of flood disaster, flood disaster signs, following disaster after flood, the characteristics of vulnerable flood disasters areas and flood disaster impact. Moreover, the respondents are aware of what survival action they have to do when they encounter flood disaster and the provision of motivation to households on preparedness against flood disaster. It relates to their experiences during flood disaster so that they can learn from the disaster that they have undergone.

In the Emergency Planning Parameter, the index value is 63 and it indicates the preparedness level is almost ready. The data shows that, the evacuation and survival plan for households and the fulfillment of basic needs for a majority of the respondents are ready. However, the provision of rubber boat, life jackets and the construction of duplex houses remain low. It is because it needs considerable amount of money for the preparation. Most of the respondents would have carried out it if they have very good economic condition. Besides that, evacuation and first aid training and skill also remain low. The government or the related organizations in this matter do not hold the event particularly for households or public in general. Moreover, the provision of disaster first aid bag and telephone numbers and addresses of important facilities owned among the respondents remain relatively low. It is because the respondents consider that it is not very important.

Another parameter which is the Warning System Index is included in the not ready category with a total index value of 40. It indicates that the respondents remain not ready in terms of warning system. Most of the respondents only depend on the disaster warning system by watching the river water condition and weather condition directly. They based on their past experiences as the reference to immediately carry out preparedness action. For their experiences in encountering flood disaster, the respondents are not panicked when flood will occur.

Finally, Resource Mobilization Capacity Index is 30 and is classified in the not yet ready category. It means that there are many respondents who do not follow the preparedness training in encountering flood disaster and their skill remains low. Their knowledge only comes from training held in their workplace or when they learned it at school in the past. Moreover, the skill they have also comes from the respondents' experience during the past flood disaster. With regards to flood disaster funding and logistics, most of the respondents have less. If the respondents prepare the flood disaster funding and logistics, that means they have good economic condition.

Women's Preparedness in Flood Disaster Areas in 2016

The flood impact areas in 2016 include seven (7) administrative villages located in East Jakarta District because most of the areas are located in South of East Jakarta District and directly border to South Jakarta District. The flood disaster cases in the areas are due to high rainfall in South of East Jakarta District while the government just does the normalization of Ciliwung River and Pesanggrahan River. However, the

normalization does not occur for Cipinang Hulu River and Sunter River hence, high rainfall makes the areas covered with excessive river water.

Based on Table 2 for flood impact areas in 2016, Knowledge and Attitude Parameter shows a total index value of 93 indicating the level of preparedness is very ready. The respondents in the areas have good knowledge on definition, causes, signs, impact of flood disaster, following disaster after flood and the characteristics of vulnerable flood areas. Moreover, the respondents know what they have to do when they encounter potential flood disaster. This may be due to the formal education level of the respondents who at least completed senior high school.

The Emergency Planning Index in the areas is in the almost ready category with a total index value of 57. Concerning the evacuation and survival plan for households, evacuation action and the fulfillment of basic need, a majority of the respondents are ready in encountering flood disaster. However, the provision of life jackets and rubber boat remains very low. The respondents consider that they do not need the equipment and the prices make them reluctant to buy them. With regards to the provision of disaster first aid bags and addresses and telephone numbers of the important facilities, a majority of the respondents do not have them because they only depend on rescue from local residents and state apparatus such as RT (*Neighborhood Association*) and RW (*Community Association*) when emergency situation occurs. Moreover, most of them do not participate in the preparedness and evacuation training hence; they do not have skill in this matter. In fact, the training is not carried out in the areas.

Women's Preparedness Level in Encountering Flood Disaster

To know individuals' preparedness level, in the research the individuals means women. They need the index value obtained from each preparedness parameter. Moreover, the index is calculated with the following formulation:

$$\text{Preparedness Index} = 0,45 * \text{index KA} + 0,35 * \text{index EP} + 0,15 * \text{index RMC} + 0,05 * \text{index WS}$$

The higher index value indicates the higher preparedness level of the subjects in the research. The individuals' preparedness level is categorized into five categories. The following is table on women's preparedness level based on flood impact areas in East Java District:

Table 3 Women's preparedness level based on flood impact areas

No.	Flood Areas	Preparedness Index	Category
1.	Flood Impact Areas in Period of 2013-2016	70	Ready
2.	Flood Impact Areas in 2016	67	Ready

Based on Table 3, the research portrayed the index of flood impact areas and the readiness category with total index value of 70. The value is the same as the flood impact areas in 2016 with total index value of 67. The readiness category is similar and only differs from the index value. This is due to the respondents' high knowledge in the two categories when the flood disaster occurs. The respondents' knowledge is based on their experiences during the flood disaster which formed the basis for them to plan potential actions and therefore, it can influence women's attitudes to be ready and prepared in encountering and anticipating the flood disaster.

For emergency response plan, the respondents from the two areas fall under the almost ready category. Their readiness in providing equipment to meet basic needs such as health, food and other important ones is good but their readiness in the aspect of security and safety is rather low. For example, there are some respondents who do not turn off gas and electric supply when the flood disaster occurs, they do not have disaster first aids bags and they do not participate in evacuation skill and training.

However, although the preparedness of the respondents from the two areas is in the ready category but there is no warning system and there is inadequate resources mobilization. Therefore, it is proven that the preparedness level in the parameter is very low. In the areas with flood impact in the period of 2013-2016 the warning system index is 40 and it is under the not yet ready category. Besides that, the resources mobilization index is 30, and therefore, it is under the not yet ready category. Other than that, areas with flood disaster in 2016 shows the disaster warning system index of 27 and therefore, it is categorized as not yet ready. Moreover, the resources mobilization index is 22 and so, it falls into the not yet category. A majority of the respondents states that the most important things they have to do right, according to their opinion, are to rescue their children and valuable goods when the flood disaster occurs.

The index of flood disaster warning system in the flood disaster areas in the period of 2013-2016 indicates that the respondents remain not ready. It differs from the index of warning system in the flood impact areas in 2016, and it is under the not yet ready category. It occurs because of the low warning system in the two areas. However, for the areas that frequently suffer flood disaster, they have various disaster warning information resources if compared to new areas with flood impact. Those in the new areas only depend on their personal experiences, i.e. a majority of them just monitors river water surface condition and the high rainfall.

The index of resources mobilization for the two areas is in the same category, the not yet category with the index value of 30 for flood impact areas in the period of 2013-2016 and 22 for flood impacts areas in 2016. Only a few respondents from the two areas participate in the evacuation and preparedness training and simulation hence, the low index in the parameter. The training and simulation of flood disaster preparedness are very important so as to reduce risks due to the flood disaster and panic attack among the victims. However, for the areas with flood impact that occurs frequently, the respondents' frequent flood experiences make them calmer to face the flood.

The preparedness level in the two flood impact areas in East Jakarta District (the flood impact areas in the period of 2013-2016 and those in 2016) is in the ready category. There is only little difference in the index value concerning the preparedness of the two areas. However, there is difference in the preparedness level in the flood disaster warning system. For the areas with flood disaster impact in the period of 2013-2016, it falls under the less ready category, and for the areas with flood disaster impact in 2016 it is under the not yet ready category.

CONCLUSION

Based on the research results it can be concluded that women's preparedness to encounter flood disaster in Jakarta Timur, Greater Jakarta Province is in the ready category. It is located in two areas, one with flood disaster impact in the period of 2013-2016 and the other with flood disaster impact in 2016. There are a few differences on the preparedness in the two areas, i.e. the index value that differs from the three parameters, and the same category in each parameter. However, in the parameter of the disaster warning system, there are some differences in the preparedness category. In the Warning System Parameter, the two areas indicate the low preparedness level. For the area with flood disaster impact in the period of 2013-2016, it is under the not yet ready category. Despite there are several sources of information through social media, the residents in the area were not totally aware. Those in the flood disaster impact category in 2016 are also under the not yet ready category. It is because the residents were never aware of flood disaster warning information through social media.

In the knowledge and attitude parameter for the area with flood disaster impact in the period of 2013-2016 and the area with flood disaster impact in 2016, both indicate that the preparedness level is very ready. It shows that the respondents have very good knowledge on the flood disaster. The Emergency Planning Parameter in the two areas also shows similar preparedness level that is almost ready. There are some indicators that show the low value. These include the procurement of disaster alert bag, the provision of addresses and telephone numbers for important facilities and evacuation training and skill as well as First Aids (P3K). Apart from that, for Resource Mobilization Capacity (RMC) parameter in flood disaster flood impact in the period of 2013-2016 and in the area with flood disaster impact in 2016, both areas are under

the not yet ready category. The indicators with low value in the parameter are the participation in the flood disaster preparedness training, the skill as well as funding and logistics that the respondents cannot prepare well.

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