

A Cultural Coping Mechanism: Vulnerable Climate Action Encounter Flood Disaster as Everyday Life in Jakarta

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ABSTRACT

This paper concerns about experiences and responses from the community who live in flood plain at an area in Central Jakarta. They encounter flood disaster and the diseases aftermath frequently. Generally, the diseases aftermath is diarrhea, common cold, dengue hemorrhagic fever, pulmonary infection, and skin infection. The aims of this paper were to understand the meaning of flood disaster and the disease aftermath from the community's experiences, and to know how their response and strategy dealing with vulnerabilities as their cultural coping mechanism. The results showed that flood disaster and the diseases aftermath had been seen as normal occurrence in their everyday life. There was different cultural coping mechanism to deal with the flood and diseases in the time of heavy flood and regular flood. Their responses to encounter vulnerability were aware where they living on, and strategies to prone the event. They had accessibility to all important public services like health services, education, workplaces, transportation mode, and the economic's access. For those reasons of accessibility to all important services, they were coping the hazard and consciously lived in density area at the flood plain area nearby the river bank, and never willingly to be relocated.

Keywords: flood disaster, diseases aftermath, cultural coping mechanism, response and strategy

INTRODUCTION

Flood disaster was accounted for 50% of the total disaster incidences in the worldwide, and affected to 520 million people's lives, and caused 25 thousand people of death every year. When flood disaster was occurred in developing and under developing countries, it could caused greater mortality and a wider disease epidemic (Shady, 2006).

In Indonesia, flood disaster occurred on almost all regions in every year, both in urban or rural areas. Data from the National Disaster Management Agency (BNPB) showed that during 1998-2004, there were 402 flood disaster, with 1.144 total mortality (Kartodiharjo & Jhamtani, 2006). During 2008 to 2017, based on data from BNPB showed that flood disasters recorded 599 incidences per year and increased into the rainy season. Flood disaster's victims averaged 194 people per year (Suprpto, 2020).

BNPB also recorded that the causes of flood disaster in several regions in Indonesia, including the urban areas in the DKI Jakarta Province, were (1) High rainfall, (2) High population and density, (3) Development of areas that were uncontrolled, not in accordance with regional spatial planning, and not environmentally visibility, causing a reduction in water catchment and storage areas, (4) Inadequate drainage system, lack of drainage infrastructure and maintenance, (5) Overflowing of several large rivers, (6) Environmental damage to the upstream area, (7) The condition of the tides when it rains causing backwater, (8) Reduced drainage capacity due to river narrowing, illegal land used along the riverbanks, (9) the river flow jammed due to piles of garbage, (10) Unclear status and function of canals (Kartodiharjo & Jhamtani, 2006).

Geographically, Jakarta City is a lowland area between the headwaters of the river and the coast. There are 3 main reasons why Jakarta often experiences flooding, (1) High density local rain flood, (2) Flood from surrounding rain highland areas, (3) Flood from high tide sea. Jakarta city drainage is designed to accommodate water discharge with a maximum rainfall of 120 mm/day. In some of the extreme heavy rains that occurred in Jakarta, rainfall exceeded this capacity. On early 2020, Jakarta's rainfall reached 377 mm/day, which was the highest in 24 years that floods hit to the most of the Jakarta City (Pemprov DKI Jakarta, 2020).

One of impacts of the flood disaster on the community was a health problem. Flood disaster caused water and vector borne diseases. Water borne diseases such as leptospirosis, diarrhea (including cholera and dysentery), respiratory infections, hepatitis A and E, typhoid fever, infectious skin diseases, and vector borne diseases such as dengue fever and malaria (WHO, 2020). Diseases caused by the impact of the flood could be contagious, and if not treated properly could cause of death. In addition, conditions of vulnerability to diseases could reduce the quality of life.

People who consciously settled and lived in flood-prone areas such as riverbanks, they known the risks they would be faced in every rainy season, such as member of community in Karet Tengsin, Jakarta. For member of the community who were affected by flood disaster, it would be considered as a part of their daily life experience and as a normal occurrence. They would respond to flood disasters and implement the coping mechanisms in dealing with emerging vulnerabilities. They would stay on where they lived, and faced the threat of the disease aftermath. Flood disaster in Jakarta was a routine occurrence, according to a historical study conducted by Gunawan (2010), showed that flood disaster in Jakarta had been a problem since the colonial era (Gunawan, 2010).

This study concerned about experiences and responses from member of community, who lived in flood plain at Karet Tengsin Tanah Abang Jakarta. How they had been dealing with flood disaster and disease which came aftermath frequently. Flood disaster can cause a wide range of health impacts to the members of community. General diseases which came aftermath the flood were diarrhea, common cold, Dengue Hemorrhagic Fever (DHF), pulmonary infection, and skin infection.

The aims of this study were to understand the meaning of flood disaster and the disease aftermath from the member of community's experiences who always encounter the same vulnerabilities frequently, and to know how the members of community made responses and strategies dealing with those vulnerabilities.

MATERIAL AND METHODS

This study used ethnography's method as a qualitative approach which used in anthropology to interpret qualitative datas which is related to flood disaster and disease problems in urban community. It used to interpret the relation of human behavior both collectively and individually to understanding vulnerable event like flood disaster and the diaseases aftermath frequently.

RESULT AND DISCUSSION

This study was conducted on urban area in Karet Tengsin, Jakarta. The area where had been choosed by the frequently experiences of flood disasters in years. Data collected by building rapport, participant observation, and unstructured interviews with historically records were used to gain datas about experiences and responses from members of community, who lived in flood plain dealing with flood disaster and the disease aftermath frequently. Datas collected with actors' approaches, while actors as informants were the members of the community. There were 13 informants consisting of eight women and five men. The selection of informants took into accounts by the length of they had been lived in the area, the number of family members, their susceptibility to diseases that have been suffered by both themselves or their family members, and their willingness to participate with this study.

Secondary datas were also used as supporting data obtained from reports from Primary Healthcare and district's authority. Primary data were obtained from the results of participatory observations, in-depth interviews, and data triangulation which were written on transcripts and field notes by bringing up categories according to the theme, and then assembled with discourses on culture and health's theories and concepts.

A. The Meaning of Flood Disaster and The Disease Aftermath

As Sorensen & White (1980) and Hoffman & Oliver-Smith (2002) stated people that usually affected by flood disaster who always lived on a flood plain area, disaster would be considered as a part of their daily lives and as a normal occurrence (Hazard as normal occurrence) (Sorensen & White, 1980) (Hoffman & Oliver-Smith, 2002). The flood disaster that had been occured every year on Karet Tengsin, Jakarta, had been considered as normal occurance by the member of community.

There were two concepts of floods based on member of community meaning. They named of heavy floods and regular floods. Heavy floods were interpreted of rainwater and river overflows that submerge the entire of their houses for days and then receded. Meanwhile, what was called a regular flood was a routine inundation that occured every year due to rainy season and overflow of river water which only inundates their environment being measured by knees and waist of adults, and water flood only entered some houses to the extent that they did not completely submerge, and could recede for less than a day. Member of community in Karet Tengsin believed that big floods occured in a five-year cycle, such as those in 1996, 2002 and 2007. Even in recent years in 2020 and 2021, flood occured every year.

Whether it was a heavy flood cycles or just an ordinary flood that occurs every year, it was not seen as a disaster that made difficult for the community to carry out their daily activities. Even though considered to be obstacles, they were adaptable to the conditions in their environment. Member of community who had live for decades in Karet Tengsin considered prone to flooding, namely along the banks of the Karet Kalimati river, a channel from Kalikrukut.

In the heavy flood cycle story between women member of community in Karet Tengsin, it was revealed that every time a big flood occurred that did not recede for days, it was believed that the river would ask for human sacrifice. Therefore, they would keep their young children away from the river bank, and not allowed to swim during the flood. River condition had invisible limit, because the overflow exceeds the boundary of the

river embankment. Their experiences in every time when a heavy flood occurred, there would be someone drown. After someone drown, the flood and the river would recede immediately.

Table 1. The Meaning of Flood Disaster

Meaning of Flood Disaster	Flood as a normal occurrence
2 Types of Floods	- Heavy Flood Cycle - Regular Flood
Myth Story Believe about Big Flood	River Flood would take a life sacrifice, as a sign of recede

The diseases aftermath which usually suffered by member of community in Karet Tengsin during floods were Upper Respiratory Tract Infection (URTI/ISPA), itching (infectious skin disease), diarrhea, common fever, and dengue haemorrhagic fever (DHF). Those flood disaster seasonal diseases were recorded on nearest Primary Health Cares of Bendungan Hilir and Karet Tengsin.

Caljouw, Nas, & Prawiro (2004) stated that after the flood Jakarta became an endemic area for diseases such as diarrhea, URTI, and skin infections (Caljouw et al., 2004). Everywhere people cleaned their houses from the mud. Most of the families whose houses were flooded lost their valuable things such as furnitures and vehicles. Even though the member of community in Karet Tengsin experienced difficulties due to flood disaster, it did not be seen as a problem, instead of relying on the benefits when a heavy flood occurred for their survival as a coping mechanism. For example, they were using opportunities of donations from outsider, liked equipment, food, or health assistance.

During flood disaster or in normal condition, Karet Tengsin member of community's access to health services were affordable. The area in central of Jakarta was near to many hospitals, practical doctors, and clinics. As described by Goffman (1971) that the ideal behind health services was more similar to other official services, and was often realized. Patients come to the doctor of their own will, place/entrust themselves to the doctor's hands, follow the doctor's instructions, and get results that include giving reasons for their trust and costs. For sure there were certain points that were emphasized. The patient might not know the need for services, knowing his needs, he might choose another pharmacist's service, wanted to go to another health care, but he might not be able to; although capable, he might choose many options before going to a particular doctor, and seek treatment for him, and he might not follow the advice which the doctor gave him; patient could also follow the doctor's advice and find the situation somehow alleviated, but not fundamentally changed (Goffman, 1971). Member of community had a free will to explain about their behavior to choose medication. Because of their experiences about the flood disaster and the diseases aftermath, they had their own meanings in their culture.

Table 2. The Meaning of the Diseases Aftermath and Health Seeking Behavior

Types of the Disease Aftermath	Meaning by Member of Community	Health Seeking Behavior
URTI	common cough and cold, not serious disease	Self medication by using traditional medicinal plants Self medication by buying general medication on store get medication from PHC or hospital nearby

Skin Infection Disease	Itchy caused of dirty water flood	Self medication by using antiseptic soap or traditional oil (<i>minyak tawon</i>) Get medication from flood emergency healthcare’s volunteer
Common Fever	Fever in two days	Self medication by using traditional medicinal plants Self medication by buying general medicine on store get medication from PHC or hospital nearby
Diarrhea	Stomach ache caused of dirty water flood, with liquid defecation continuously	Self medication by using traditional medicinal plants
DHF	Long term fever	get medication from PHC or hospital nearby

The diseases aftermath was related to community’s concept about water itself. Flood disaster had been seen as water concept that could clean and wash every dirt, even they seen water of flood as dirty too. When flood disaster occurred, they also wasted their trash to the water flow, and still doing defecation activity on the river banks. Agreed with Landy (1977) that described the flood diseases aftermath which suffered by member of community would be faced in various ways to deal with, so that they could adapt successfully. Even if the death might come, various ways have been done to avoid it. Sickness was a part of life itself, which was a manifestation of life under certain conditions (Landy, 1977).

The diseases aftermath that occurred after flood disaster in Karet Tengsin, Jakarta that had been seen and meant as normal occurrence, caused of the routine incidence and the ability of human adaptation. But what is the meaning of disease itself? Winkelman (2009) stated that the threat to the human health was already discussed as Malady. Malady described about unwanted human health condition and live dangerous. Health malady condition caused by many things like bacterias, viruses, candidas, behavior, and/or psychological condition (Winkelman, 2009).

Table 3. Malady Concept

Malady Concept		
Disease	Illness	Sickness
Medic Biological problems that involve abnormalities in the structure, chemistry or function of the body	Personal The patient's experience of something that is wrong is happening, a feeling of being disturbed by circumstances that are thought to be favorable to cause disease or causes due to cultural beliefs	Social reality Focuses on the consequences of a person's social response

Sources: (Winkelman, 2009), (Notoatmodjo, 2003)

Member of community in Karet Tengsin had accessibility to all important public services like health services, education, workplaces, transportation mode, and the economic’s access. For those reasons of accessibility to all important services, they were coping the hazard and consciously lived in density area at the flood plain area nearby

the river bank, and never willingly to be relocated. Living in the center of urban area that had access to all living supporting, will not see flood disaster as vulnerable event, but they had cultural coping mechanism to adapt as their normal everyday life.

B. Utility of Karet Bivak Cemetery Area during Flood Disaster

The Karet B They had accessibility to all important public services like health services, education, workplaces, transportation mode, and the economic's access. For those reasons of accessibility to all important services, they were coping the hazard and consciously lived in density area at the flood plain area nearby the river bank, and never willingly to be relocated. ivak Cemetery had a land area of 16.2 hectares, directly adjacent to the residents of Karet Tengsin. Some residents lived in semi-permanent houses in the cemetery area. Even though they lived in cemetery area, they were feel lucky when big flood disaster occurred. They never been impact by floods, because its location was higher than other areas in Karet Tengsin. Their houses were spared from drowning, while other residents whose position were below were flooded. When big floods occurred, member of community evacuated to Karet Bivak cemetery area. They built emergency tents and slept on the burial ground. In Karet Bivak Cemetery, there were two wells and a public bathroom that were not affected by the flood that inundated the area below.

The Karet Bivak Cemetery area was indeed used as a Water Infiltration Area. Water sources in the cemetery area were never dry. In terms of public policy where cemetery area was included in the scope of open green space (RTH/Ruang Terbuka Hijau) which was included in the Spatial Planning Law Number 31 article 1. RTH was an open space where various functions could take place according to planning. As well as the design, namely such as urban parks, land conservation (soil, water and other natural resources) such as urban forest parks, as well as the aim of maintaining aesthetics according to historical cultural values. This group includes the Public Cemetery (Hasni, 2009).

The Karet Bivak Cemetery area was included in the conservation of RTH as a water catchment area by the government of Jakarta Province. For this reason, the Government used a policy of plakatization of headstones on all graves, to replace all grave headstones into inscribed stones only, not allowing buildings on the tombs. Government has already replaced 2,000 headstones with the new one, plain not tiled and gray as the tomb. The program served to increase water resistance in Jakarta and eliminate the impression of horror that the community had regarding funerals (Dis, 2009). This policy also protected medicinal plants that grow wild or were deliberately planted by residents for the availability of free herbal medicines. As a water catchment area, the Karet Bivak cemetery area was a buffer for rainwater, even though the surrounding areas were flooded.

For member of community of Karet Tengsin, the Karet Bivak cemetery area was not just a burial ground. There were ties between member of community and the Karet Bivak cemetery. Some of the residents got income from the cemetery area. When big flood disaster occurred, Karet Bivak cemetery area become a temporary residence for member of community whose entire houses were submerged in water. Karet Bivak cemetery area also hold many plants for ingredients of traditional medicinal plants.

Flood disaster has been seen as normal occurrence, and so as with diseases aftermath. When flood disaster come frequently, members of community have many strategies infaced the disease aftermath. One of the strategies was using the herbal medicine to medicate their vulnerable disease. Herbal medicine plants were available free on 16.2 ha Karet Bivak cemetery area which were still on the same area where the community lived. There were nine items plants which were used by the members of community for medication the diseases tradisionally, like Jarak (*Jatropha curcas L.* & *Jatropha gossypipolia L.*), Saga (*Abrus precatorius L.*), Sente (*Alocasia macrorrhiza*), Kamboja (*Plumeria*), Sigsag (*Euphorbia tithymaloides*), Dadap (*Erythrina variegata*), Waru (*Hibiscus tiliaceus*), Jambu biji (*Psidium guajava*), and Lidah buaya (*Aloe vera*).

Table 4. Utility of Medicinal Plants in Karet Bivak Cemetary

Plants	Part of Plants	Utility by Member of Community's Experiences	Efficacy
Saga (<i>Abrus precatorius L.</i>)	leaf	for the treatment of heartburn, sore throat, and mouth sores. Raw Saga leaves chewed.	saga leaves were efficacious for treating mouth sores, anti-parasitic, anti-inflammatory, relieves coughs, heartburn, and useful for blood circulation (Hariana, 2009b).
Jarak (<i>Jatropha curcas L.</i> & <i>Jatropha gossypipolia L.</i>)	leaf	For treatment of diarrhea, bloating, colds to babies Jarak leaves were crushed and then rubbed on babies' belly	Jarak is useful as a blood circulation, anti-inflammatory, stops bleeding and relieves itching. Jarak Ulung is useful as a fever-reducing, anti-inflammatory, laxative (constipation) and eliminating appetite (Hariana, 2009a).
Guava/Jambu Biji (<i>Psidium guajava</i>)	Leaf and fruit	For treating adult's diarrhea and DHF. guava leaves were mashed, and squeezed and filtered up to one glass. Drink it twice a day, one glass each until the intensity of diarrhea or diarrhea decreases and stops. Guava fruit is known to treat dengue fever	Guava leaves treated for digestive problems (stomach and intestines), pain, and heal wounds. Guava fruit contains vitamin C, fiber and antioxidants (Yovita, 2020).
Frangipani/ Kamboja (<i>Plumeria</i>)	flower	To avoid mosquito bites and minimize susceptibility to dengue fever, residents use frangipani flowers as a mosquito repellent. Some flowers are squeezed and smeared on the body, the fragrance of frangipani flowers is not favored by mosquitoes	Antipiretic, antidiuretic and antitusive (Hariana, 2011).
Dadap (<i>Erythrina variegata</i>)	leaf	To treat fever in children "Acian" to treat fever, take plain dadap leaves (<i>dadap serep</i> = Java) mashed with a mixture of onions, then carve it	reduce fever (antipiretic) and efficacious to cure rheumatism (Sehat, 2016).

		all over the body, after that there is no need to take a shower. In addition, dadap leaves to treat colds, by being used as a <i>tapel</i> (rub) on the stomach.	
<i>Waru (Hibiscus tiliaceus)</i>	leaf	For fever mash it and then apply it to the child's body, as is the use of dadap leaves. To nourish hair, smooth it with water, then apply it on hair, let it sit for a while, then rinse and shampoo it.	In traditional medicine, hibiscus root is used as a coolant for fever, hibiscus leaves help hair growth, as a cough medicine, a medicine for diarrhea with blood / mucus, and tonsils. Flowers are used to treat trachoma and colds (Edison, 2001).
<i>Lidah Buaya (Aloe vera)</i>	leaf	For heartburn, sunburn, hair sprinkling and for cold drinks	Aloe vera can be used as an anti-inflammatory, laxative, parasitic, and repair the pancreas. To treat headaches, dizziness, constipation, seizures in children, malnutrition, whooping cough, vomiting blood, diabetes, hemorrhoids, shedding menstruation, and fertilizing hair (Hariana, 2011).
<i>Sente (Alocasia macrorrhiza)</i>	stems	for external medicine, namely for the spread of skin diseases. Lumbu (stem) is cut and then burned so that the water is released, lukewarm is applied to the wound or itching.	the Sente plant is useful as a fever, anti-inflammatory, swelling remover, overcoming influenza, fever, malaria fever, acute diarrhea, typhus, rheumatism, vaginal discharge, pulmonary tuberculosis, glandular tuberculosis, ulcers, ringworm, scabies, overcoming bite effects snakes, dogs and insects (Hariana, 2009b).
<i>Sigsag (Euphorbia tithymaloides)</i>	roots	for aching pain, rheumatism, rheumatism due to cold air. The roots that spread in the grave are made of jamu pegel-pegel, rheumatism, mixed with <i>suji</i> leaves, boiled and drunk, usually immediately subsided after drinking the concoction.	The sigsag plant was useful as an anti-inflammatory, eliminating swelling, stopping bleeding, reducing heat, cleaning toxins, boils, ulcers, ulcers, fractures, bleeding wounds, centipede bites, centipedes and for red or swollen eyes (Hariana, 2011).

Traditional medicinal plants' utilization had been known from generation to generation by member of community in Karet Tengsin. There were also introduced to women in Karet Tengsin as a Family Medicinal Plants' Program (TOGA/Tanaman Obat Keluarga).

Sorensen & White (1980) and Hoffman & Oliver-Smith (2002) stated community that frequently hit by floods, they would be considered that flood disaster as a part of their daily lives, as a normal occurrence. The community responded to changes, and had

a strategy to survive where they lived and faced the threat of disease aftermath. When a flood becomes a routine event, the disease aftermath becomes a routine event as well (Sorensen & White, 1980) (Hoffman & Oliver-Smith, 2002).

Regarding response and strategy, Bennett (1976) explained the coping mechanism for vulnerability at individual and group level. Humans were seen as organisms that acted actively in relation with environment. Behavioral adaptation had meant a coping mechanism that humans describe to get what they want or adapt their life to their surroundings, or the surrounding environment with human life and goals (Bennett, 1976).

Coping mechanism had been shown by the individual in their life span. The quality of coping differed from one individual to another, since it involved elements of cognition. Adaptation had different meanings depending on the level of the individual or group as the discussion. Adaptation at the individual level, emphasized reduction, reduction of anxiety, feelings of accomplishment, or feelings of achieving desires to the end. Meanwhile, adaptation at the group level emphasized the adaptation of choices made by standards in dealing with situations that exist in cultural groups. Adaptation was generally defined as the process of allowing survival as a satisfying term to reduce stress, similar to learning to deal with change as a result of adaptive responses.

In the social context explanation, adaptive behavior could be seen as innovation, seeking change, producing new ones, or being conservative and tolerant. Individuals and groups adapted by finding new solutions to new and old problems; or perhaps adapting by learning to live with the situation and reducing anxiety about it, or adapting other behaviors to the prevailing reality. To some extent, adaptation differs between societies. Humans would not be always the same voluntary or dynamic in their adaptive strategies, but these tendencies exist and tend to strike a balance.

Regarding to human responses and adaptation strategies to disease, Landy (1977) revealed that humans everywhere, always and places, and in all forms of social and cultural organization, were always associated with disease. Disease in humans has always challenged the ingenuity of humans both individually and in groups to find ways and forms of disease prevention, control, and treatment. Sigerist in Landy (1977) stated that disease was a part of life itself, a manifestation of life under changing conditions. There was a close relationship between disease, medicine, and human culture, where culture was the response made by human groups to deal with disease and trauma as a successful adaptation (Landy, 1977). In line with Landy, Winkleman (2009, p.264) states that culture and its resources are useful for mediating pressures and accessing resources to produce human health through adaptation to the environment (Winkelman, 2009).

There were many strategies used by humans to solve environmental problems based on the information and skills they had already learned. Children learnt from adults how to obtain food, avoid hazards, create safe protection against the weather, and use rough materials for tools. They did not inherit this information genetically, and if a child was abandoned from the group, it would be very unlikely for him to learn all of this through trial and error. Every human generation must learn the basic survival techniques of the previous generation through a process of cultural transmission. The content of cultural adaptation differs from population to population and from generation to generation. The cultural complexity of ideas, techniques, strategies, and

rules built across many generations encompasses more knowledge and ideas than an individual can learn or need to learn. Living in a cultural system, humans have a set of knowledge, skills, and innovative ideas in various solutions. Change also occurs through selective storage of new ideas and techniques that consider the effectiveness of groups or individuals in dealing with problems, including situations that threaten the integration of groups and themselves. These new ideas may be created in groups, but often they borrow them from outside. Adaptation in this context extends beyond ecology, involves adjustments, and changes that increase group competence and safety, regulate community stability, and protect the physical and emotional health of individuals (McElroy & Townsend, 1996).

Johnson and Sargent (1990) stated that cultural adaptation to disease includes behaviors and beliefs that serve to limit morbidity and mortality in two ways, namely: (1) Some behaviors and beliefs had a preventive function to reduce exposure to disease organisms for certain segments of society, (2) Involves existing therapies to treat disease, commonly known as ethnomedicine (Johnson & Sargent, 1990). When a threat come continuously, the incident would be considered as a normal experience, which according to Anderson in Bankoff (2001) had been called the normalization of threat, and by someone it would be transmitted to others as part of of cultural knowledge (Bankoff, 2001). Bankoff (2003) stated that the possibility behind the vulnerability of a society was a culture that had the ability to adapt (culture's adaptability) (Bankoff, 2003).

CONCLUSION

Members of community in Karet Tengsin Jakarta’s responses in dealing with diseases after flood disaster occurred, was to treat the symptoms by stages as treatment at home (remedy), bought medicines from store, or got medical treatment from healthcare. When heavy flood disaster occurred, the free medical treatment provided by health emergency’s volunteer. In facing flood disaster and diseases aftermath, they were not think about the unfavorable things, but the beneficial things from where they lived, and made availability of all the facilities around them to deal with floods and diseases aftermath. They mainly used the knowledge of medicinal plants as natural remedies, which various of medicinal plants available in Karet Bivak cemetery area nearby to where they lived. Utilization of medicinal plants at Karet Bivak cemetery area to medicate the disease aftermath traditionally, was the one of the strategies of coping mechanism by members of community to deal with vulnerability that the culture adjust to disaster which deal as normal occurrence.

The decision to live in a flood prone area was not due to compulsion because there is no other better place. It is more due to the accessibility to all facilities, like transportation, economic activities, health services, and educational facilities for children. Karet Tengsin, which is located in center of Jakarta, is more efficient, according to community who have lived in the area for a long time. So that people seen that flood disaster and the diseases aftermath were considered as occurrence in their everyday life.

REFERENCES

- Bankoff, G. (2001). Rendering the World Unsafe : ‘Vulnerability’ as Western Discourse. *Disasters*, 25(1), 19–35.
- Bankoff, G. (2003). *Cultures of Disaster: Society and Natural Hazard in the Philippines*. Routledge.
- Bennett, J. W. (1976). *The Ecological Transition : Cultural Anthropology and Human Adaptation*. Pergamon Press Inc.
- Caljouw, M., Nas, P. J. M., & Prawiro, P. (2004). Flooding in Jakarta. In *The 1st International Conference on Urban History*.
- Dis, D. (2009). Even After You Die, You Have Follow Rules. *The Jakarta Post*.
- Edison, C. (2001). *Waru (Hibiscus Tiliaceus)*.
http://www.ccrcc.farmasi.ugm.ac.id/?page_id=227.
- Goffman, E. (1971). *Relations in Public*. Harper & Row.
- Gunawan, R. (2010). *Gagalnya Sistem Kanal Pengendalian Banjir dari Masa ke Masa*. PT.Kompas Media Nusantara.
- Hariana, A. (2009a). *Tumbuhan Obat dan Khasiatnya Seri 1* (8th ed.). Penebar Swadaya.
- Hariana, A. (2009b). *Tumbuhan Obat dan Khasiatnya Seri 3* (5th ed.). Penebar Swadaya.
- Hariana, A. (2011). *Tumbuhan Obat dan Khasiatnya Seri 2* (8th ed.). Penebar Swadaya.
- Hasni, H. (2009). Ruang Terbuka Hijau Dalam Rangka Penataan Ruang. *Jurnal Hukum*, Vol. 4. *Jurnal Hukum*, 4(2), 39–65.
- Hoffman, S. M., & Oliver-Smith, A. (2002). *Catastrophe and Culture The Anthropology of Disaster*. (S. M. Hoffman & A. Oliver-Smith, Eds.). School of American Research Press.
- Johnson, T. M., & Sargent, C. F. (1990). *Medical Anthropology Contemporary Theory and Method*. Praeger Publishing.
- Kartodiharjo, H., & Jhamtani, H. (2006). *Politik Lingkungan dan Kekuasaan di Indonesia*. Equinox Publishing Indonesia.
- Landy, D. (1977). *Culture, Disease and Healing : Study in Medical Anthropology*. Mac Millan Publishing Co.Inc.
- McElroy, A., & Townsend, P. K. (1996). *Medical Anthropology in Ecological Perspective*. Westview Press.
- Notoatmodjo, S. (2003). *Pendidikan dan Perilaku Kesehatan*. PT.Rineka Cipta.
- Pemprov DKI Jakarta. (2020). *Dasbor Pantau Banjir Jakarta*.
<https://pantaubanjir.jakarta.go.id/data>
- Sehat, S. (2016). *Manfaat Daun Dadap Serep Untuk Menyembuhkan Rematik*.
<http://poltekkesbhaktimulia.ac.id/web/olah-raga-dan-kesehatan/manfaat-daun-dadap-serep-untuk-menyembuhkan-rematik/>
- Shady, A. M. (2006). Living and Dying on the Flood Plain. *4th World Water Forum, Legal Actions for Global Challenges*.
- Sorensen, J. H., & White, G. F. (1980). Natural Hazards A Cross-Cultural Perspective. Human Behavior and Environment Advances in Theory and Research. In I. Altman (Ed.), *Human Behavior and Environment Advances in Theory and Research, Vol.4 Environment and Culture* (Volume 4 E, pp. 279–317). New York : Plenum Press.
- Suprpto. (2020). *Tanah Longsor dan Banjir Bencana yang Mematikan di Indonesia (Data Tahun 2008-2017)*.

- WHO. (2020). *Flooding and Communicable Diseases Fact Sheet*. Technical Guidelines. https://www.who.int/hac/techguidance/ems/flood_cds/en/
- Winkelman, M. (2009). *Cultural and Health Applying Medical Anthropology*. Jossey-Bass.
- Yovita, N. V. (2020). *Kenali Manfaat Jambu Biji dan Daunnya*. Halodoc.Com. <https://www.klikdokter.com/info-sehat/read/3619973/kenali-manfaat-jambu-biji-dan-daunnya>