

## MITIGATION CLIMATE DISASTER BASED ON QS YUSUF 47-49

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**Abstract.** The objective of this research is to discover about mitigation climate disaster in QS Yusuf 47-49. The method used is a literature review or library research without collecting data in the field with a descriptive approach. The data research is gathered through reading, collecting, and processing data based on numerous sources comprises a book, journal, article, and hadith as well as Qs-Al-Quran. The result shows that Yusuf prophet releases climate adaptation through surmising climate such as drying and the rainy season before the season combat the society. It refers to avoid human from some adverse effect of climate. Society in Yusuf prophet era providing staple food for facing drying season. As result as a society avoid the shortage of fundamental need when they experience extreme weather. The other is Yusuf prophet forecast weather both drying and rainy period to prefer human for another further mitigation. The other is Yusuf prophet reminds the society through building disaster communication before disaster strike society, it can be categorized as non-physic mitigation of disaster where communication makes them literate about ecology disaster before eco-catastrophe harm human. The impact is to salvage community from the possible side effect of disaster. Lastly, society in Yusuf prophet has conducted physical mitigation like building storage for food because it impossible as food doesn't save in house or food storage.

**Keywords:** Al-Quran; climate; disaster; Islam; mitigation

### I. INTRODUCTION

Indonesia is one country which is prone to eco-disaster. The occurrences of disasters from 2005 to 2015 are dominated by 78% is a hydrometeorological disaster and 22% is a geological disaster. Hydrometeorology eco-catastrophe content flooding, drying, forest fire, extreme season, and wave. Conversely, geology disaster encompasses volcano eruption, earth quake and land sliding (Amry et al. [1]). The other great issues are climate variation where it results to jump the rate of temperature on the surface of the earth as well as flooding and drying can be exacerbated by climate dynamics. Then another clue is rainy season come unpredicted and the length of the rainy season can shorten rather than drying period. As Consequences as, it has an extreme impact to produce staple food for people because peasant confronts to burden typically for determining the stages for planting. Nationally, the shortage of food can be worsened due to agriculture rely fully on climate and season as well as eco-catastrophe. The issues globally and locally must be combated by mitigation base on religion value. While mitigation can be defined as an endeavour for coping risk through structural and non-structural.

Structural measures include physical measures such as buildings. It is different from structural mitigation starting from community empowerment, policies, and awareness (Sugiharyanto et al., in Dewi [2]). According to Law number 24 (2007) disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused by natural and non-natural as well as human factors resulting in casualties, damage, property loss and psychological

impact. Natural disasters are of many types including hydrological disasters/(water disasters), meteorological disasters, geophysical disasters and climatological disasters (Guha-Sapir [3]). Disaster harms human life including losing their property and life as well as intruding people able to cope without help (Harifuddin & Zainuddin [4]). Meanwhile, disaster mitigation is the concept which has been developed for coping after, during and before the disaster to decline the risk of disaster (Noviana, Kurniaman & Affendi [5]).

Government Regulation (PP) No. 64/2010 is an effort to reduce disaster risk, both structurally or physically through natural and/or artificial and non-structural or non-physical physical development through increasing the ability to face disaster threats in coastal areas and small islands. Non-structural / non-physical disaster mitigation activities include 7 (seven) aspects including preparation of laws and regulations, preparation of disaster-prone maps, preparation of disaster risk maps, preparation of environmental impact analysis (Amdal), spatial planning, zoning and education, outreach and public awareness. Disaster mitigation has heavy linkage to religion value like Islamic teaching for non-structure of mitigation for catastrophe. In religion perspective, disaster as warning from God that human must be closer and worship to god, positive thinking and test human must be patient because there is a pleasure as human steadfast (Hizbullah, Sulistyarini & Annataga [6]). remember god and test human Non-structure mitigation contain oral communication such as student receive disaster information from various sources including from mosque and jamaah Friday prying as well as from radio and Tv which were accepted from the religious leader (Adiyoso &

Kanegae [7]). The occurrences of a disaster have severe linkage to combination nature and human activity (Hakim, [8]).

The human temper which can be indicated for triggering eco-catastrophe including uncontrol for chopping down the trees, uncared for the environment around, and conduct terror as well as a vanity in human (Zainuddin, [9]). It can be supported by attitude, knowledge, awareness of the human impact on the behaviour of people to conserve the natural environment. Islam has reminded to person where people don't admit to releasing bad trait to nature which is the major aspect for triggering disaster and Allah rendering disaster to human because people neglect to pleasure which is provided (Hidayati [10]). However attempt to refer to the instructions of the Koran as a revelation in response to climate change was declared in 2009, in the Muslim Seven Year Action Plan on Climate Change M7YAP (Mangunjaya et al [11]) and Indonesia particularly sivil society organization has aware about this action plan (Mangunjaya et al [12]).

In an ecosystem, all of the environmental components have mutual supporting and mutual connecting each other, when one system is halted for function, it makes damaged in another component. For example forest. Forest have One example is in Islam advice for adopting organic behaviour in agriculture production, it impacts to reduce the rate of emission on earth.

It can be valuable for our atmosphere because the emission which comes from agriculture can be abolished. In Islam, there are some actions to mitigate disasters including reducing and avoiding the adverse impact of the disaster, to fasten assistance to victim and recovery human from disaster (Iskandar [13]). Another obstacle is to link between understanding of religion adherer to act ecology disaster because some fact shows that human who they convince about the meaning of religion but they can't follow mitigation properly. For example, in Lombok, when the earthquake struck Lombok, the leader of religion or cleric continues to complete their worship but the earthquake has been shaken, It is opposite to disaster handling (Arifin, [14]).

In general, religion has demanded to human to anticipate disaster before it combating environment both natural and social environment. Unlucky, some of the human regret about the warming system from religion. The impact is a disaster is pondered as main sources to create adverse impacts to human-like people lose their entire wealthy and losing loved family. Conversely, disaster refers to jump the level of awareness of human to close with Allah and reduce nature ravaged as well as another damaging on the surface of the earth. In this research, religion as basic to discover some of the mitigation which is conducted by Yusuf prophet in QS Yusuf 47-49.

There are several objectives in this research including How adaptation of climate dynamic in Yusuf prophet can salvage the society and what sorts of mitigation both structure and non-structure mitigation of eco-catastrophe.

## II. RESEARCH METHODS

Research with the topic of land conservation and pest management of agriculture perspective on Islamic Religion using library research and descriptive approach. Based on the foregoing, the data collection in the study done by studying and/or exploring several journals, books, and documents (good in printed or electronic form) as well as other sources of data and or information considered relevant to the research or study (Supriyadi [15]). The research literature is concerned with theoretical studies, references too other scientific literature relating to culture, values and growing norms the social situation under study (Sugiyono, [16]). Study literature also can be mentioned as gathering data in the library from numerous sources including book references, research result, article and some journal which is linked to research issues that researcher intent to achieve (Sari & Asmenderi [17]). Library research not only provides for making research design and harness library references to obtain research data (Zed [18]). This literature review aims to build and construct a stronger conception based on empirical studies that have been conducted (Tjahjono [19]).

By studying other people's studies, we can determine whether to imitate, repeat, or criticize a particular study. The data collection procedure in this literature review is by using keywords in searching for material to be used in the literature review, then reading, summarizing and compiling the material that has been obtained. This research is qualitative which prioritizes excavation, discovery, reading, explanation and delivery of meaning or symbol data explicit and stringent of the data collected. Data processing in library research is descriptive, Filosofia, and theorists (Yahya, [20]). In this research to investigate about mitigation climate based on QS Yusuf 47-49 exert collecting data from several sources including data from an article which is connected to climate as well as another source like research result. It must be supported by some data from article and book which is a strong linkage between religion and nature. The data which is gathered must be combined and connected to QS Yusuf 47-49 which refer to climate adaptation for ensuring food security. Then make a connection between the research findings and religious values. The result of processing data can produce descriptive about adaptation and mitigation of climate in religion point of view.

## III. RESULTS AND DISCUSSION

Climate disasters cause losses to humans ranging from hampered food production, disrupted food supply and fever, food prices can rise and fall as well. In the Qs Al-Quran Surah Yusuf [12]: 47, Yusuf says: "So that you can plant seven years (length) as usual; Then what you reap you let it roll except a little for you to eat. is described in the Koran Surah Yusuf [12]: 48-49, meaning: Then after that will come seven very difficult years which will consume what you save to face it (difficult years), except for a little of (wheat germ) that you save. Then after that will come the year in which people will be given rain (sufficiently) and in that time they will squeeze the wine. In the above paragraph,

disasters that can be categorized are ecological disasters or disasters resulting from climate change that have an impact on food scarcity. During the time of the prophet Yusuf, it was predicted that there would be a famine or a period where climatic conditions could impact or harm human life resulting from changes in climate and seasons. In this day and age where the harvest season is abundant, then one day a difficult situation arises where humans experience food scarcity. This condition makes humans adapt to environmental and climate change by arranging various strategies.

The above verse can be explained clearly how the prophet Joseph adapted to climate change and the alternating seasons. When climate change occurs, humans become vulnerable to climate change and disasters in general. The verse above is an early warming climate and season as well as disaster. Prophet Yusuf succeeded in providing early warning to humans about climate problems. This condition is related to the destruction of natural resources in both terrestrial and marine ecosystems. Climate change is not a problem at present, but in the past, climate change events have occurred so that these changes have an impact on human life. The impact of climate change starts from farmers having difficulty producing food due to the rainy season not knowing when it will come, the dry season which is confused with the rainy season. Even the rainy season can be longer in terms of time or the dry season is longer and shorter. Such climate change includes changes that are irregular even though the universe is running in an orderly manner. The verse above shows that the occurrence of seasons and climates is very regular where dry seasons such as dry seasons and disasters will come and go regularly with human life. One method that Nabi Yusuf conducted is to improve climate and season before combating human life. It makes the human avoid the adverse impact of climate, especially for food. It is mentioned as saving strategy (Bahagia, Nurrahmawati & Nurhayanti [21]). When human fail to forecast the climate, the misery hit human life. The fundamental principle to predict climate is to understand whether staple food stock adequate for people to face climate or it needs more to ensure human necessities along the season and climate perturbances. The other is to understand how long drying season and humidity periods which have severe strong for cultivating plan. As result, the farmer reaches triumph when they plant in proper time. It must be encouraged that farmer can combine or create a new strategy for coping climate when they recognize the pattern of season and climate. The current period of climate events has continued to change so that disasters worsen human life. Climate change is triggered by the increase of emission gases at atmosphere (Perdinan [22]).

Carbon dioxide (CO<sub>2</sub>) as emission which comes from burning fossil fuel and forest burning [23][24]. Climate change impact to some obstacle such as decreasing harvest yield in some region and jumping production in highland area, Increasing the number of storms, drying period, flooding, hot wave and forest fire (Lubis & Delinom [25]). The other clue of climate change such as unpredicted season

and climate including flooding, drying, sliding, hight wave, and emerging water surface level of sea (Mustangin [26]). Climate change also refers to the alteration of humidity, temperature, and rain pattern season (Raksanagara, Arisanti & Rinawan [27]). Second, study the impact of climate and disasters. In agriculture, climate change impact to alteration of cultivating pattern because of the movement of climate and season scheme (Sudarma & As-syakur [28]).

It is similar to climate circumstances in Nabi Yusuf era where drying season have been surmised by Nabi Yusuf and refer to adverse impact to the security of food for people. The alteration of climate in Nabi Yusuf shows that the disadvantage of climate can be detected before climate change. It creates societies ready for facing climate because they have provided sources for overcoming like saving wheat or food as preparedness before a disaster occurs. Meaning that action to reduce the impact of disasters like climate and season as well as natural catastrophe are conducted fully before disaster combat human life. Nabi Yusuf suggests to salving food and some from overall of yield must be cultivated. There are separating food for consumes and seed to cultivate again. In this clue, the seeds of wheat and seeds for planting must be split because after drying season (eco-catastrophe complete), the people have to allocate seed for cultivating. When the stock only distributes for eating, the human doesn't have seeds again for planting. Recently, the societies which have a habit to save food for life. The habit of storing foodstuffs is still being carried out, such as leuit-based storage such as the Cipatat Kolot indigenous people and the Urug indigenous people in Bogor (Bahagia et al., [29][30]).

It even includes disaster control methods because food storage is classified as a way to anticipate disasters (Bahagia [31][32]). When a disaster occurs, the main human problem is food shortages and the emergence of vulnerable people due to food shortages. Meanwhile, food needs such as rice are among the most basic needs. This need is classified as a physiological need. If the community is food insecure, it will become food insecure because the food is not sufficient in terms of quantity and quality. The concept of food resilience the prophet Yusuf taught to maintain the main food stock to deal with disaster problems so that it does not lead to hunger for people due to food shortages. The necessities based on the above verse are to solve the problem of hunger before hunger hits human life. The fundamental need must be ensured because it affects human behaviour. It has been bolstered that the human whom they experience starvation will neglect anything from their self (Muazaroh & Subaidi [33]). Also, there are environmental disaster mitigation values. Disaster mitigation includes structural and non-structural mitigation.

There are two things, in this case, namely physical disaster mitigation, where disaster management uses or builds a physical building. In this case, when the prophet Yusuf ordered his people at that time, it was impossible if the food was not stored in the house or the barn. Simultaneously, food storage can be done in the house, namely in the warehouse and in the food barn. Meanwhile,

physical disaster mitigation is an action to overcome disasters by constructing buildings. The building can be in the form of a wall built along the coast to cope with tidal flooding and tsunami. Or building a reservoir to collect rainwater so that floods do not occur. The building can also be in the form of a food barn to store rice and rice. Physical mitigation minimizes disasters by constructing various physical and technological infrastructure. Physical development such as food storage during the time of the prophet Yusuf was built long before the arrival of the dry season which is about 7 years away.

While disaster mitigation has some objectives including to reduce the impact of disasters, especially cultural heritage, as a basis (guidance) for the protection, development and utilization of cultural heritage, increasing public knowledge in dealing with and reducing the impact/risk of disasters, so that cultural heritage can be safe and remain sustainable (Pratikno, Rahmat, & Sumantri [34]). After that, there are values for the achievement of food independence and food sovereignty. Food self-sufficiency is related to preventing the community from food scarcity. Meanwhile, to realize food sovereignty, it is necessary to maintain the food production system, maintain supply and demand, implement food-saving behaviour, maintain upstream and downstream systems. The main problem at this time is the problem of food, the behaviour of the prophet Yusuf by maintaining the food production system, so that food on the market will still be available to residents and the price remains affordable because there is no decrease in production but an increase in consumption patterns. Food preparation means creating individual-in-group resilience against disasters.

In the end, social resilience grows in which people collectively and in groups meet their food needs. The main purpose of the prophet Yusuf's warning is to meet food needs in quantity and quality. Food fulfilment is carried out long before natural disasters strike human life. In this case, the prevention of food shortages is carried out before the climate and natural disasters occur. As a result, hunger is impossible because food as the most basic need has been fulfilled. The same thing when a climate change disaster occurs, people can starve due to failed food production at the farm level. Even though the prophet Yusuf's disaster mitigation model was implemented hundreds of years ago. Other disaster mitigation actions are non-physical disaster mitigation or disaster mitigation that does not use buildings but focuses more on social emphasis. One way to release the mitigation which is including in this scheme is to increase the capacity of societies for withstanding for disaster (Buchori [35]).

This mitigation is more of an action which is in the form of advice or words and exercises that are useful for making someone aware of disasters. Prophet Yusuf was proven to do this because the prophet Yusuf immediately advised and suggested verbally to all his people to understand or literate the climate. At that time, the prophet Yusuf predicted that one day a disaster or a food shortage would come where at that time there would be a change in

seasons. The Prophet Yusuf implemented early disaster communication to his citizens so that they were alert so they were prepared for disasters without causing social and economic losses. This communication arises because of the need to reduce uncertainty, act effectively to protect individuals and groups (Tamitiadini, Dewi & Adila [2]). Disaster communication is very important during and pre-disaster, disaster communication includes the best way to respond, prepare and recover disasters (Rudianto [36]). Communication is not just conveying a message but a response is expected from the recipient of the message (Lestari & Sembiring [37]).

To convey messages also requires who is the communicator, message, appropriate media, the condition of the village community, and analyzing obstacles (Prasanti & Fuady [38]). Meanwhile, errors in the delivery of information cause misinformation and worsen conditions and situations (Gelgel [39]). Besides, disaster communication is conveying disaster information so that the recipient of the information is prepared to face disasters. Even the final effect of disaster communication is that the recipient has a high literacy of disaster problems so that people are aware of the disaster. Mindfulness will foster disaster awareness behaviour. This is different from people who do not receive disaster information, so the community will be confused about what types of disasters will occur, how to handle them, and overcome them (Marlyono, Pasya, & Nandi [40]). At least someone is aware of the possibility of a disaster if they are literate about the disaster.

Disaster communication took place during the time of the prophet Yusuf, where the prophet Yusuf himself was an expert who delivered directly to the public about the information on environmental, climate and disaster situations. Prophet Yusuf served as the main information to share this information with all its citizens. Disaster communication where the information collected about the season and climate situation will change people's attitudes and behaviour towards disasters. Meaning that mitigation of climate in Yusuf prophet focuses on preparedness where the disaster has not combated human life. It produces some of the benefits including avoiding greaving news after the disaster, omitting victims like death body because disaster, reduce the risk of disaster like decline housing estate ravaged, and salvage human wealthy from the debacle. Unfortunately, the mitigation before disaster still needs to be improved despite the exemplary of disaster mitigation have been displayed in religion.

#### IV. CONCLUSION

Religion especially Islam as guidance for understanding all of environment component including the climate and season which are connected to human behavior. Nature environment can't be altered as human change the function and nature system. The alteration of nature role can trigger adverse effect to human like climate dynamic which impact to some environment variation such as drying and rainy season are difficulty for surmising as well as eco-

catastrophe combat social environment. Yusuf prophet through QS Yusuf 48-49 contain adaptation and mitigation of climate change. Yusuf prophet have determined drying season ready to strike human life. It show that season come properly both drying and rainy season. In order to facing this circumstances, staple food must be provided before disaster harm human. It also convey as prepreparedness before eco-catastrophe attend to human environment. The another is Yusuf prophet empower to people for creating disaster communication among society, government and expert, it include to mitigation non-physic where the society are encouraged by disaster literation. The society that recognize ecology disaster will come, they avoid it before disaster occuring, It decline the number of victim, decline house of damaged, and ellude vanishing entire of human wealthy. Conversely, as the society does'nt obtain information about disaster, the society can be perplexed to mitigate disaster. The other is physic mitigation is conducted by Yusuf prophet through food storage building. Human in Yusuf prophet save their food at home or in storage because it is imposible that human don't save food as fundamental stock for facing climate disaster. The objective is to guarantee food and abolishing scarcity of food.

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