

Natural Disasters and Society : Conceptual Meaning and Interrelation

Prashant H.

Asst. Professor of Sociology, SKHP Govt. First Grade College Hulkoti, Gadag, 582205, India
Email - prashant44h@gmail.com

Abstract: A natural disaster is the highly harmful impact on a group, society or community which is usually caused by a natural hazard event. Whereas Society is a group or aggregate of people living together in an organized way and sharing the work that needs to be done. Natural disasters are usually out of human control and they cause huge consequences on society just like a war or combat. Some examples of natural hazard events may include: volcanic activity, wildfire, flooding, drought, earthquake, tropical cyclone, lightning and tsunami. A natural disaster can cause loss of life or damage to the property. There will be human suffering caused by damage to life, family, personal property and infrastructure. The severity of the damage depends on the affected population's resilience and also on the infrastructure of the populations country.

Key Words: Disaster, Society, Community, Hazard, Cyclone, Flood, Drought, Infrastructure.

1. INTRODUCTION:

A natural disaster such as a flood, earthquake, volcano or hurricane causes great damage or loss of life. Natural disaster is a sudden and terrible event in nature (such as a flood, hurricane, tornado, or tsunami) that usually results in severe damage to life and loss of property. Natural disaster is a major event brought about by the natural processes of the Earth which can cause tremendous destruction to the human life and environment. Society can be thought of an organized group of people for religious, cultural, scientific or political purposes. A natural disaster is an event caused by a natural hazard. The natural hazard is defined by UNSDR as “a natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage” – e.g., an earthquake, hurricane, or drought (UNSDR,2009:p.20).(Abhaya S. Prasad, Louis Hugo Francescutti, International Encyclopedia of Public Health (Second Edition), 2017). Natural disasters cause the families to get displaced and many victims lose their shelter. Huge shortages of food and drinking water, several medical and psychological problems among the victims, disruption in the infrastructure are major offshoots of natural disasters.

2. Conceptual Meaning of Natural Disasters:

2.1 Definition of Natural Disasters

The US Federal Emergency Management Agency (FEMA) explains the natural disasters as “The most common disasters result from meteorological (weather-related) and geological events and can affect any area of the U.S. Their impact can be localized or widespread, predictable or unpredictable. Damage can range from minimal to major. Depending on the severity of the incident, they can have a long-term impact on the infrastructure (roads, bridges, and utilities) of any location. Threats involving natural forces include thunderstorm, flood, tornado, hurricane, winter storm, drought, wildfire, landslide, earthquake, tsunami (tidal wave), volcano, and dam failure. Technological (man-made) hazards include hazardous material releases and spills, acts of terrorism, and nuclear accidents. Natural hazards are usually, but not always, more predictable than any other type of hazard. Other threats include animal health emergencies, such as outbreaks of a Foreign Animal Disease.”

There are 18 natural hazards included in the National Risk Index of FEMA: riverine flooding, drought, avalanche, coastal flooding, cold wave, , earthquake, hail, heat wave, tropical cyclone, ice storm, landslide, lightning, , strong wind, tornado, tsunami, volcanic activity, wildfire, winter weather. In addition there are also tornados and dust storms.

unstats.un.org defines natural disasters as “a situation or event, which overwhelms local capacity, necessitating a request to the national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering.”

unstats.un.org defines Types of Natural Disasters: “– floods; – natural disasters of geological origin, (volcanic eruptions, earthquakes and landslides); – natural disasters of climatic or meteorological origin, (droughts, cold waves, heat waves, avalanches, wave surges including tsunamis and tidal waves, and wind storms including cyclones, hurricanes, storms, tornadoes, tropical storms, typhoons and winter storms); – wildfires, both forest and scrub; – insect infestations; and – epidemics of cholera, diarrhea, meningitis, dengue fever and malaria”.

United Nations Office for Disaster Risk Reduction defines “natural disasters as a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts”.

Department of Homeland Security says “Natural hazards are defined as environmental phenomena that have the potential to impact societies and the human environment. These should not be confused with other types of hazards, such as manmade hazards. For example, a flood resulting from changes in river flows is a natural hazard, whereas flooding due to a dam failure is considered a manmade hazard, and therefore excluded from the National Risk Index”.

2.2 Terms used in the study of Natural Disasters

Department of Homeland Security provides below information regarding natural disasters:-

“**Emergency** is sometimes used interchangeably with the term disaster, as, for example, in the context of biological and technological hazards or health emergencies, which, however, can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society”.

“**Disaster damage** occurs during and immediately after the disaster. This is usually measured in physical units (e.g., square meters of housing, kilometres of roads, etc.), and describes the total or partial destruction of physical assets, the disruption of basic services and damages to sources of livelihood in the affected area”.

“**Disaster impact** is the total effect, including negative effects (e.g., economic losses) and positive effects (e.g., economic gains), of a hazardous event or a disaster. The term includes economic, human and environmental impacts, and may include death, injuries, disease and other negative effects on human physical, mental and social well-being”.

As per Department of Homeland Security for the purpose of the scope of the Sendai Framework for Disaster Risk Reduction 2015-2030 the following terms are also considered-

“Small-scale disaster: a type of disaster only affecting local communities which require assistance beyond the affected community.

Large-scale disaster: a type of disaster affecting a society which requires national or international assistance.

Frequent and infrequent disasters: depend on the probability of occurrence and the return period of a given hazard and its impacts. The impact of frequent disasters could be cumulative, or become chronic for a community or a society.

A slow-onset disaster is defined as one that emerges gradually over time. Slow-onset disasters could be associated with, e.g., drought, desertification, sea-level rise, epidemic disease.

A sudden-onset disaster is one triggered by a hazardous event that emerges quickly or unexpectedly. Sudden-onset disasters could be associated with, e.g., earthquake, volcanic eruption, flash flood, chemical explosion, critical infrastructure failure, transport accident.”

According to the John A. Dutton e-Education Institute(The Pennsylvania State University) "Hazard always arises from the interplay of social and biological and physical systems; disasters are generated as much or more by human actions as by physical events.(Geographer Gilbert F. White, the “father of floodplain management”). A hazard is distinguished from an extreme event and a disaster. A *natural hazard* is an *extreme event* that occurs naturally and causes harm to humans – or to other things that we care about, though usually the focus is on humans (which, we might note, is anthropocentric). An extreme event is simply an unusual event; it does not necessarily cause harm. Note that many hazards have both natural and artificial components. Because hazards are threats of harm mainly to human systems, human activities play a large role in how severe a hazard is. For example, when large numbers of people crowd into floodplains and low-lying areas, they are putting themselves in harm’s way, increasing the severity of potential floods. In short, the severity of the impacts from a natural hazard depends on both the physical nature of the extreme event and on the details of human development decisions.”

2.3 Types of Natural Disasters

John A. Dutton e-Education Institute(Pennsylvania State University) categorises Common Types of Natural Hazards: “Natural hazards can be classified into several broad categories: geological hazards, hydrological hazards, meteorological hazards and biological hazards”.

“Geological hazards are hazards driven by geological (i.e., Earth) processes, in particular, plate tectonics. This includes earthquakes and volcanic eruptions. In general, geological extreme events are beyond human influence, though humans have a large influence on the impacts of the events”.

“Meteorological hazards are hazards driven by meteorological (i.e., weather) processes, in particular those related to temperature and wind. This includes heat waves, cold waves, cyclones, hurricanes, and freezing rain. Cyclones are commonly called hurricanes in the Atlantic and typhoons in the Pacific Ocean”.

“Hydrological hazards are hazards driven by hydrological (i.e., water) processes. This includes floods, droughts, mudslides, and tsunamis. Floods and droughts can cause extensive damage to agriculture and are among the main contributors to famine. The deadliest natural disaster in world history (not counting pandemics) was the 1931 Central China floods, killing three or four million people”.

“Biological hazards are hazards driven by biological processes. This includes various types of disease, including infectious diseases that spread from person to person, threatening to infect large portions of the human population. Many discussions of natural hazards exclude biological hazards, placing them instead within the realm of medicine and public health. If biological hazards are counted, then they include the deadliest disasters in world history, including the Black Death outbreak of bubonic plague in the 1300s, killing 75-100 million people, and the 1918 "Spanish" flu pandemic, a global affair (the name "Spanish" is due to historical coincidence) killing 50-100 million people. A more recent example is the COVID-19 pandemic.”.(John A. Dutton e-Education Institute, Pennsylvania State University)

2.4 Study of Natural Hazards

Both Natural scientists and Social scientists the Natural Hazards. According to John A. Dutton e-Education Institute, Pennsylvania State University “Contemporary research on natural hazard is interdisciplinary. Natural scientists study the nature of the extreme events involved in hazards. Social scientists study the human dimensions of the impacts and responses. Policy researchers, engineers, and ethicists study what can and should be done to prepare for hazards and to respond to them when they occur. Some specific fields active in natural hazards research include geography, medicine and public health, psychology, economics, engineering, and sociology. Cartography and geographic information science are increasingly important because these fields help analyze important spatial information about hazards. Later in the module, we will see some examples of how cutting-edge information technology is being used to revolutionize disaster response.”

World Meteorological Organization states that “Natural hazards occur across different time and area scales and each is in some way unique. Tornadoes and flash floods are short-lived, violent events, affecting a relatively small area. Others, such as droughts, develop slowly, but can affect most of a continent and entire countries for months or even years. An extreme weather event can involve multiple hazards at the same time or in quick succession. In addition to high winds and heavy rain, a tropical storm can result in flooding and mudslides. In temperate latitudes, severe thunderstorms can be accompanied by a combination of large, damaging hail stones, tornadoes, strong winds or heavy rain resulting in flash floods. Winter storms with high winds and heavy snow or freezing rain can also contribute to avalanches on some mountain slopes and to high runoff or flooding later on in the melt season.”

Abhaya S. Prasad and Louis Hugo Francescutti (Science Direct) state “In recent years, there have been a series of major natural disasters including earthquakes in Haiti (2010), earthquake followed by a tsunami in Japan (2011) and Nepal (2015), floods in Pakistan (2013 and 2010) and India (2013), hurricanes in the United States (2005 and 2012), and typhoons in Philippines (2011 and 2013). The impact of such large disasters is tremendous.”

2.5 Society

Society is a group or aggregate of people living together in an organized way and sharing the work that needs to be done. Society can be smaller as well as larger . Society as a integral concept encompasses all systems of human life like economic system, political system, legal system, geographical settlements etc.

L.T. Hobhouse (1908) defined society as “tissues of relationships”

Giddens (2000) states “A society is a group of people who live in a particular territory, are subject to a common system of political authority, and are aware of having a distinct identity from other groups around them.”

Talcott Parsons (1934) writes “Society may be regarded as the most general term referring to the whole complex of relations of man to his fellows.”

R.M. Maclver (1937) also defined society as “web of social relations which is always changing”

J.H. Fichter (1957) states “A society may be defined as a network of interconnected major groups viewed as a unit and sharing a common culture”.

Mike O'Donnell (1997) writes “A society consists of individuals belonging to groups which may vary in size.”

Ian Robertson (1977) says “A society is a group of interacting individuals sharing the same territory and participating in a culture.”

3. Natural Disasters and Society : Interrelation

Societies and Civilizations were evolved on the banks of the rivers and ever since people have close resemblance and dependence on the rivers and water sources for their survival. Due to increasing rate of population and ancestral sentiments people tend to live in hilly areas, mountains and other disaster prone areas and they are susceptible to natural disasters. Natural disasters are social, geographical, environmental and political phenomena. Social and Environmental structures such as huge population density, deforestation, rise in the temperature create vulnerability to natural hazards. But Governments are often seen as responsible for the effects of disasters. Both Government and public are equally responsible for the mitigation of natural Disasters. Society can not survive without the Nature and Nature has society as its integral part.

4. Summary:

Thus we can say that a natural disaster is the highly harmful impact on a group, society or community which is usually caused by a natural hazard event. Whereas Society is a group or aggregate of people living together in an organized way and sharing the work that needs to be done. Societies and Civilizations can create vulnerability to natural hazards. In turn natural a disaster can cause loss of life or damage to the property. There will be human suffering caused by damage to life, family, personal property and infrastructure.

REFERENCES:

1. Gupta H. “Disaster management”. University Press. 2003
2. Kotlyakov V M. “Natural disasters – Volume II”. EOLSS Publications.2010
3. Alexander D. “natural Disasters”.Taylor & Francis Publishers. 2018
4. Singh R B. “Vladimir M. Natural Hazards and Disaster Management”.Rawat Publications.2009
5. Steinberg T. “Theodore Acts of God The Unnatural History of Natural Disaster in America”. Oxford University Press.2006
6. Giddens A. “Sociology: Introductory Readings”. Polity Press. 2022
7. Scott J. “Sociology: The Key Concepts”. Taylor & Francis Publishers. 2006
8. FEMA, "Emergency Management in the United States"
https://training.fema.gov/emiweb/downloads/is111_unit%204.pdf [Nov. 13, 2023].
9. FEMA Department of Homeland Security, "Natural Hazards",<https://hazards.fema.gov/nri/natural-hazards#:~:text=Natural%20hazards%20are%20defined%20as,hazards%2C%20such%20as%20manmade%20hazards.> [Nov. 13, 2023].
10. The Pennsylvania State University "What is a Natural Hazard?" <https://www.e-education.psu.edu/geog30/node/378#:~:text=Geological%20hazards%20are%20hazards%20driven,the%20impacts%20of%20the%20events.> [Nov. 13, 2023].