

SECTION

13

ENVIRONMENTAL  
HAZARDS AND  
DISASTERS IN  
GHANA



# HUMAN AND ENVIRONMENT

## Environmental Hazards and their Management

### Introduction

In Ghana, environmental hazards like floods, droughts, earthquakes, and coastal erosion pose serious risks. This topic explores their causes, impacts, and preparation strategies. Understanding these issues highlights the need for safety measures and early warning systems. It also shows how governments, communities, and international partners respond to disasters. Learning about these topics helps you understand disaster management and the importance of proactive steps to protect yourself and your environment. This knowledge supports sustainable development and links to your JHS Social Studies curriculum.

### At the end of this section, you will be able to:

- Differentiate between hazards and disasters
- Sketch areas in Ghana prone to floods, drought, bush fires and earthquakes

### Key Ideas

- **A Hazard** is harmful event or activity that has the potential to cause injury, death, or damage.
- **A Disaster** is a big event that causes lots of harm and is too much for the community to handle alone.
- **The Difference:** A hazard is a possible danger; a disaster is when that danger actually happens.
- **Risk** is the chance of harm happening because of hazards and vulnerable conditions.
- **Vulnerability** is the factors that make a community more likely to be harmed by hazards.
- **Resilience** is the ability of a community to adapt and keep functioning despite hazards.
- **Hazards** can be categorised into natural (like earthquakes) or human-induced (like pollution).

# HAZARDS AND DISASTERS IN GHANA

## The Meaning of Hazard and Disaster

### Hazard

A hazard is a harmful physical event, phenomenon or human activity that **may** cause the loss of life or injury, property damage, and affect socio-economic activities as well as the environment.

### Disaster

A disaster is a sudden, catastrophic event that **causes** major disruption to a community or society, leading to widespread damage, destruction, and personal hardship. A hazard is something that might happen, a disaster is something that does. For example a flood or a bushfire could happen, when it does it causes significant damage to property and possible loss of life then it becomes a disaster.

### Risk

Risk refers to the possibility of experiencing harm, loss, or negative consequences as a result of a certain action or event. It involves the uncertainty about what might happen in the future and the potential for adverse outcomes

### Vulnerability

Vulnerability refers to the weakness or likelihood of being harmed, affected, or impacted by a hazard or disaster. It indicates how exposed a person, community, or system is to risks and how easily they can be harmed by those risks. It is also the conditions determined by physical, social, economic and environmental factors or processes, which increase the chances of a community to the impact of hazards.

### Resilience

Resilience is the ability to recover from challenges, setbacks, or difficult situations. It refers to how well individuals, communities, or systems can bounce back after experiencing stress, adversity, or disasters

## Types of environmental hazards

Environmental hazards are dangers that come from our surroundings and can harm people, property, or the environment. Here are the main types of environmental hazards:

## 1. Environmental or Natural Hazards

These are hazards that occur naturally and are often unpredictable. Some examples include:

- a. **Earthquakes:** Sudden shaking of the ground caused by movements in the Earth's crust. They can cause buildings to collapse and lead to injuries. Ghana has experienced some form of earth tremor (a moderate form of the earthquake) in Accra and its surroundings
- b. **Floods:** When water overflows onto land that is usually dry. Floods can happen due to heavy rain, melting snow, or storms. Ghanaians have been experiencing floods, especially during the wet season
- c. **Rainstorms or thunderstorms:** Powerful storms with strong winds and heavy rain. They can cause flooding, destruction of homes, and power outages.
- d. **Wildfires:** Uncontrolled fires that spread rapidly through forests and grasslands. They can destroy wildlife habitats and threaten communities. In Ghana wildfires are mostly caused by hunters, lightning strikes and some accidentally by farmers.
- e. **Sea erosion:** Sometimes the sea waves become strong and cause flooding and coastal erosion in some areas such as Keta, Ada, and Axim. Large ocean waves are caused by underwater earthquakes or volcanic eruptions that can lead to tsunamis. They can flood coastal areas, wash away large sections and properties.
- f. **Pests and Invasive Species:** Insects and pests such as armyworms and locusts can destroy food crops and vegetation. Crops destroyed when large numbers of insect pests gather together has a serious impact on livelihoods.

## 2. Human-induced Hazards

These hazards result from human activities and can often be prevented. Examples include:

- a. **Pollution:** Contamination of air, water, or soil with harmful substances. This can come from factories, cars, or waste disposal.
- b. **Chemical Spills:** Accidental release of toxic substances, such as oil or chemicals, into the environment. These spills can harm wildlife and people.
- c. **Nuclear Accidents:** Incidents at nuclear power plants that release harmful radiation. These can have serious health effects on people and the environment.
- d. **Infrastructure Failures:** When buildings, bridges, or dams fail due to poor construction or maintenance, leading to disasters like collapses or floods.
- e. **Technological Hazards:** These are risks associated with the use of technology. Examples include Cybersecurity Threats: Risks to computer systems and networks that can lead to data breaches or loss of sensitive information. Industrial Accidents: Events like explosions or fires in factories that can cause harm to workers and the surrounding community.
- f. **Disease Outbreaks:** The spread of infectious diseases, such as COVID-19 or influenza, can lead to widespread illness, Dengue Fever occurred in the Eastern region

## Why Understanding Hazards is Important

Learning about these types of hazards can help:

- a. **Recognize Risks:** Understand the dangers present in their environment and how to protect themselves.
- b. **Prepare:** Know what steps to take in an emergency, such as having an emergency kit or a family plan. For example, Ghana's strategies toward Covid 19.
- c. **Advocate for Change:** Get involved in local efforts to reduce hazards, such as participating in clean-up events or promoting environmental protection.

## Differences between Hazards and Disasters

Theme	Hazard	Disaster
Definition	A natural or human-made event that has the potential to cause damage or loss of life.	A hazard that has occurred and caused damage and/or loss of life.
Causes	Many potential causes for example melting ice or heavy rain can cause floods	Can be caused by a single hazard or a combination of hazards.
Effect	It is just a threat so no loss of life.	Causes damage or loss of life.
	Can be prevented or eased through planning and preparedness	Can only be responded to and recovered from once it has occurred.
Examples	Examples of hazards in Ghana include earthquakes and tremors, floods, wild and domestic fires, explosions, landslides, drought and tidal waves.	Examples of disasters that have happened in Ghana include: <b>Floods:</b> 1995, 1999 and 2015 Accra floods, 2018 Upper East Floods, the 2021 Keta Tidal waves, 2023 Akosombo Dam spillage <b>Drought:</b> 1983. <b>Earthquake:</b> 1939 Accra, 2008 Fufute-Adukrom. <b>Landslide:</b> 2017 Atomic Junction. <b>Gas Explosion:</b> 2022 Apeate. <b>Dynamite Explosion:</b> 2020, 2021, 2022, 2023. Kumasi Central Markets fire outbreak.

### Activity 13.1

1. Click on the links below to watch the videos on recent disasters in Ghana and answer the questions.
  - a. VIDEO: Flood In Ghana Renders 25,000 Persons Homeless (youtube.com)
  - b. Heavy rainfall in Southern Ghana causes flood, destruction in part of the country | The Pulse (youtube.com)

If you cannot access the video, check your school or local library or search on the internet for same topic.

- i. What type of hazard has caused the disaster in the two clips
  - ii. Describe the consequences of the disaster to infrastructure, property and people.
  - iii. Explain to your friend in class what needs to be done to clear up after the disaster.
2. Read the following statement about the difference between hazards and disasters
  - a. A Hazard is a potentially harmful physical event, phenomenon or human activity that may cause the loss of life or injury.
  - b. A disaster is a significant disruption to a community or society that leads to widespread human, material, economic, or environmental losses
    - Now, think about more examples of hazards and disasters from your community and write them on a manila card.
    - Then, categorize each example as either a hazard or disaster.
    - Share your information with a friend in class.
    - From your examples, how does a hazard become a disaster (e.g., an earthquake in a remote area might not be a disaster, but one in a city could be). e.g., a flood that displaced thousands of people).
3. Watch the pictures below and answer the following questions.





- i. Which of these hazards are more likely to happen in your community?
  - ii. Explain why your community might be more vulnerable to certain hazards and disasters. Share your information with a friend in class.
4. The table below is a puzzle that represents words used in environmental hazards and disasters. Use it to search for at least 12 words that represent hazards and disasters in Ghana. Share the results with your classmates.

#### Hazards and Disasters in Ghana

R	E	E	A	T	E	A	O	D	E	U	G	D	D
O	E	U	O	F	G	G	X	T	W	S	A	D	S
F	O	L	A	N	A	S	T	S	I	O	S	L	R
D	I	P	S	X	L	L	H	U	L	W	E	E	O
S	H	G	I	F	L	P	L	O	D	E	X	D	M
C	A	L	P	H	I	A	W	E	F	I	P	I	E
I	I	L	I	L	P	M	V	O	I	O	L	L	R
M	L	I	E	H	S	P	O	A	R	M	O	S	T
E	D	R	O	U	G	H	T	L	E	O	S	D	H
D	F	L	O	O	D	S	L	S	Q	L	I	N	T
I	M	U	V	R	W	N	S	A	O	D	O	A	R
P	E	A	R	T	H	Q	U	A	K	E	N	L	A
E	T	A	T	I	D	A	L	W	A	V	E	S	E
W	I	N	D	S	T	O	R	M	Q	O	N	N	R

- 5.
- a. Visit the link below to watch a video on environmental disasters. Make notes on the key points in the news reports. Write a short essay explaining the causes, effects, role of community resilience and solutions based on your findings and present them to your friends in class.  
Ghana: floods displace 26,000 people in the east of the country (youtube.com)
  - b. After you have watched the video, imagine you are an urban or community planner, with a classmate, discuss three practical measures that leaders in the community could take to avoid or reduce this disaster.

## Areas in Ghana Prone to Environmental Hazards and Disasters

In Ghana, there are several places that are prone to environmental hazards and disasters. The table below shows areas in Ghana where environmental hazards and disasters have occurred in the past and in recent times.

Hazards and Disasters	Area
Floods	Accra; Bolgatanga, Bawku, Pusiga (Upper East); Takoradi
Earthquake and Earth tremors	Accra
Landslides	Fufute-Adukrom, Aburi-Peduase
Tidal waves	Agavedzi, Salakope (Ketu South); Keta
Drought	Bawku, Navrongo (Upper East); Kete-Krachi; Savelugu; Ahafo-Tanosu
Wildfires	Bolgatanga, Bawku, Navrongo, Savelugu, Tamale, Kintampo and Techiman.
Fire outbreaks (Industrial and Domestic)	Nationwide

### Activity 13.2

Using the table above sketch an outline map of Ghana indicating areas or towns and their environmental hazards and disasters.

**What did I learn?**



# Review Questions

## REVIEW QUESTIONS: ENVIRONMENTAL HAZARDS AND DISASTERS IN GHANA

1. Match the following types of disasters with their causes: heavy rain, human error, lightning strikes, climate change, movement of Earth's crust

Disaster	Cause
A. Drought	
B. Bushfires	
C. Earthquake	
D. Road accidents	
E. Floods	

2. Explain the difference between natural hazards and human induced hazards. Give examples of each to illustrate your explanation.
3. Explain why it is important to understand the hazards Ghana faces.

# Answers to Review Questions

## ANSWERS TO REVIEW QUESTIONS : HAZARDS AND DISASTERS IN GHANA

1.

Disaster	Cause
A. Drought	Climate change
B. Bushfires	Lightning strikes
C. Earthquake	Movement of Earth's crust
D Road accidents	Human error
E Floods	Heavy rainfall

2.

**Natural hazards:** These are hazards caused by natural processes. Examples include earthquakes, tidal waves, floods, landslides, drought and hurricanes.

**Human-induced hazards:** These are hazards caused by human activities. Examples include fire, flooding, famine, gas explosion and oil spillage.

3. Understanding the hazards Ghana faces is important because:

- a. **Safety:** Helps protect lives by preparing for and responding to emergencies.
- b. **Preparedness:** Enables communities to develop effective disaster response plans.
- c. **Risk Reduction:** Identifies ways to minimise damage and reduce risks.
- d. **Resource Allocation:** Guides the efficient use of resources for disaster management.
- e. **Community Resilience:** Strengthens the ability of communities to recover from disasters.
- f. **Sustainable Development:** Supports long-term planning and sustainable growth.

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## Acknowledgements



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