CLIMATE CHANGE EDUCATION IN NIGERIA

TRAINING GUIDE FOR FACILITATORS AND TEACHERS

April 2026

FEDERAL MINISTRY OF EDUCATION

unicef
for every child

This Training Guide is intended for use in both formal schools and non-formal learning centers. It is designed to support the training of trainers, teachers in formal and non-formal education settings, and facilitators in community learning centers.

This guide is not intended for direct use in training learners in schools or learning centers. Instead, it provides guidance for teachers and facilitators on how to integrate climate change knowledge, actions and skills into their daily activities, both inside and outside the classroom.

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Foreword

It is with great pride that I present the *Climate Change Education in Nigeria: Training Guide for Facilitators and Teachers*. This guide represents an important step in strengthening the capacity of educators, trainers, and facilitators across formal and non-formal learning environments to respond effectively to the realities of Climate Change in our society

Nigeria, like many countries, is increasingly experiencing the effects of Climate Change, ranging from floods, droughts and heat stress, consequently impacting on education systems and community well-being. Teachers and facilitators occupy a strategic position in shaping knowledge, attitudes, and actions that can build climate-resilient communities. This guide is therefore designed as a practical resource to support those who teach, and facilitate learning in schools, community learning centres, and other non-formal education settings.

Developed in alignment with the Climate Change Act, 2021, the National Policy on Safety, Security, and Violence-Free Schools (NPSSVFS), and the Minimum Standards for Safe Schools, this Guide complements the *Handbook on Climate Change Education for Schools in Nigeria*. It adopts a flexible, context-responsive approach that recognizes Nigeria's diverse ecological zones and learning contexts.

I wish to express my sincere appreciation to our partners, particularly UNICEF, as well as the Ministries, Departments, Agencies, educators, and technical experts whose contributions made the development of this training guide possible. Their commitment to advancing Climate Change Education and safeguarding the future of Nigerian learners is deeply valued.

I encourage teachers, trainers, educators, facilitators, education managers, and all stakeholders in both formal and non-formal education to make full use of this guide. Through collective effort and informed action, we can strengthen the role of education in building safer and climate resilient communities for all.

Dr. Maruf Tunji Alausa

Honourable Minister of Education

Introduction

Climate Change is increasingly shaping the social, economic, and environmental realities of Nigeria with far-reaching consequences for education systems, community livelihoods, and sustainable development. Rising temperatures, flooding, drought, heat waves, and other climate-related hazards threaten safe learning environments and disrupt teaching and learning processes, particularly for vulnerable populations. Education remains one of the most powerful tools for awareness, resilience building, and sustainable responses to climate change.

The *Climate Change Education in Nigeria: Training Guide for Facilitators and Teachers* have been developed to strengthen the capacity of those who play a critical role in shaping learning experiences in formal and non-formal education settings. This guide serves as a professional resource that supports educators to systematically incorporate climate change concepts, competencies, values, and strategies into their daily practice, both within and beyond the classroom.

Building on existing national curricula where Climate Change Education (CCE) and Disaster Risk Reduction (DRR) were already embedded, this training guide provides practical guidance on pedagogical approaches, participatory methodologies, and context-responsive strategies suited to Nigeria's diverse context. It emphasizes experiential learning, critical thinking, and community engagement, enabling educators to link climate concepts to real-life challenges and locally relevant solutions.

This training guide is organized into thematic sessions covering key concepts such as weather, climate, climate change, global warming, greenhouse gases, and climate action. Each session includes clear learning objectives, suggested methodologies, practical activities, and exercises designed to enhance understanding and promote active participation.

Importantly, the guide adopts an inclusive and context-responsive approach and encourages facilitators to adapt the content and methods to suit local contexts while maintaining core principles and key messages.

Abel O. Enitan.
Permanent Secreatary,
Federal Ministry of Education

Acknowledgement

The development of this Climate Change Education in Nigeria Training Guide for Facilitators and Teachers would not have been possible without the dedication and contributions of various stakeholders. The guide is a product of collective commitment and collaboration aimed at strengthening the capacity of educators across formal and non-formal education settings to effectively respond to Climate Change challenges.

Our sincere appreciation goes to the Federal Ministry of Education Management, led by the Honourable Minister Dr. Tunji Alausa, CON, for the unwavering support and previous endorsement of the Handbook on Climate Change Education for Schools in Nigeria, advancing education and climate resilience in Nigeria.

We recognize the technical and financial support of the United Nations Children's Fund (UNICEF) and the expertise of the Climate Change Education National Technical Working Group (CCE-NTWG) members, including Federal Ministry of Education-(Education Support Services Department..:Multilateral Branch), Nigerian Educational Research Development Council (NERDC), Federal Ministry of Environment (FMEnv), Universal Basic Education Commission (UBEC), and National Commission for Mass Literacy, Adult and Non-Formal Education in Nigeria (NMEC), National Commission for Climate Change (NCCC), United Nations Educational, Scientific and Cultural Organization (UNESCO), Civil Society Action Coalition on Education For All (CSACEFA), Kayolayo Global Resources Nigeria Ltd. (KGRNL) among others.

Indeed, all members of the Climate Change Education National Technical Working Group (CCE-NTWG), led by the Federal Ministry of Education and co-led by UNICEF, are greatly appreciated for all their contributions that culminated in this Training Guide for Facilitators and Teachers.

This Guide stands as a testament to the power of partnership and shared responsibility in reaffirming education's role as a catalyst for climate resilience and securing a sustainable development for Nigeria's future.

The contributions of all stakeholders are deeply appreciated, and it is our expectation that this guide will serve as a valuable resource in advancing knowledge and practices towards a climate resilient society .

Amudipe Gabriel O.

Director Education support Services {DESS)

Acronyms

ABCD	Ask and Brainstorm, Coach, Discuss
CCE	Climate Change Education
CCE-NTWG	Climate Change Education National Technical Working Group
CH_4	Methane
CNG	Compressed Natural Gas
CO_2	Carbon Dioxide
DRR	Disaster Risk Reduction
DESS	Department of Education Support Services
ENSO	El Niño–Southern Oscillation
FME	Federal Ministry of Education
FMEnv	Federal Ministry of Environment
GHGs	Greenhouse Gases
IDP	Internally Displaced Persons
KGRNL	Kayolayo Global Resources Nigeria Limited
N_2O	Nitrous Oxide
NCCC	National Commission for Climate Change
NERDC	Nigerian Educational Research and Development Council
NMEC	National Commission for Mass Literacy, Adult and Non-Formal Education
NPSSVFS	National Policy on Safety, Security, and Violence-Free Schools
TLMs	Teaching and Learning Materials
UBEC	Universal Basic Education Commission
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund

Note to Trainers:

Dear Teachers and Facilitators,

This training guide has been developed to support you in leading engaging and action-oriented sessions with your trainees. It provides key concepts, suggested facilitation approaches and practical activities designed to help teachers and facilitators in formal and non-formal learning settings to understand and connect climate change issues to real-life contexts.

The guide aims to provide a clear pathway for teachers and facilitators to apply climate change knowledge and skills when teaching different subject areas, both inside and outside the classroom.

You are encouraged to adapt the examples, discussions and activities to reflect your local context and environment, while maintaining the core content and key messages of the training.

Please refer to the Definition of Terms section to guide your explanation of key terminologies throughout the session. Also research further where necessary.

As you facilitate, create an inclusive and respectful learning environment where participants can feel comfortable sharing their experiences and perspectives without fear of being judged negatively.

Your role is essential in helping learners feel empowered and motivated to contribute to climate-resilient actions within their communities.

Thank You.
CCE-TWG Nigeria

SESSION ONE:
WEATHER

TRAINING PLAN	
Session Time	**45 Minutes**
Focus Areas	1.Weather 2.Weather events 3.Elements of Weather 4.Instruments for measuring elements of weather

Learning Objectives:

By the end of this session, teachers/facilitators should be able to:

1. Define weather.
2. State weather events.
3. Identify the elements of weather.
4. Mention the instruments for measuring the elements of weather.
5. Illustrate what people do under different weather conditions (Rain, Sunny, Harmattan).

Weather

Weather is the temporary change in atmosphere from time to time in a particular place and in a particular time, which can be sunny, rainy or windy. This change can be within a short time or within a day.

Weather Events

a. Sunny

b. Rainy

c. Windy

d. Snowy

Elements of Weather

Elements of weather are components that influence the atmosphere of a place. These include:

i. Temperature: Refers to how hot or how cold it feels in the atmosphere.
ii. Humidity: This refers to how much moisture (water vapor) is in the air
iii. Sunshine: Sunlight
iv. Wind: This is air in motion, it has speed and direction..
v. Air pressure: This refers to the force exerted by the weight of air over a given point on the Earth's surface.
vi. Cloud Cover: Means the amount of sky covered by the cloud.
vii. Precipitation: This means any form of water that falls from the sky, such as dew, snow, rainfall and hail.

Instruments for Measuring Weather Elements

Below are some of the instruments for measuring weather elements:

a. Thermometer - instrument for measuring temperature.
b. Hygrometer - instrument for measuring humidity.
c. Barometer - Instrument for measuring atmospheric pressure.
d. Anemometer - instrument for measuring wind speed and direction.
e. Rain Gauge - Instrument that measures rain fall / precipitation over a period.
f. Wind Vane - Instrument that shows the direction of wind.

Thermometer

Hygrometer

Barometer

Anemometer

Rain Gauge

Wind Vane

Materials	• White / blackboard • Manual • Marker and Chalk • Projector • Laptop • Cardboard paper • Flip Chart • Videos • TLMs

Schedule of activities

Steps/subtopic/activity	Method	Time	Materials
	Ask and Brainstorm, Coach, Discuss (ABCD)	Facilitators/ Teachers are at liberty to adjust the time to suit the level of Learners	*Use materials relevant for the presentation methodology*
Activity 1: Definition of Weather.	• Presentation • Interactive session • Demonstration • Group discussion Call learners to answer questions	20 minutes	Flipchart, Markers, Projector, Laptop, Manual, environment
Activity 2: State weather events	• Presentation • Interactive session • Group discussion • Call learners to answer questions	5 minutes	Charts, Pictures, Markers, Video clips, Role play, environment
Activity 3: Identify the elements of weather	• Presentation • Interactive session • Group discussion • Call learners to answer questions	5 minutes	Pictorial, Charts, environment
Activity 4: Identify instruments for measuring weather elements	• Presentation • Interactive session. • Group discussions. • Call learners to answer questions	15 minutes	Pictorial, Chart, Video clip, Environment

Activity 5: illustrate what people do under different weather	• Presentation • Interactive session. • Group discussions. • Call learners to answer questions	5 minutes	Pictorial, Physical objects (Umbrella, blanket, rain boot, raincoat, sweater etc.)

Umbrella

Blanket

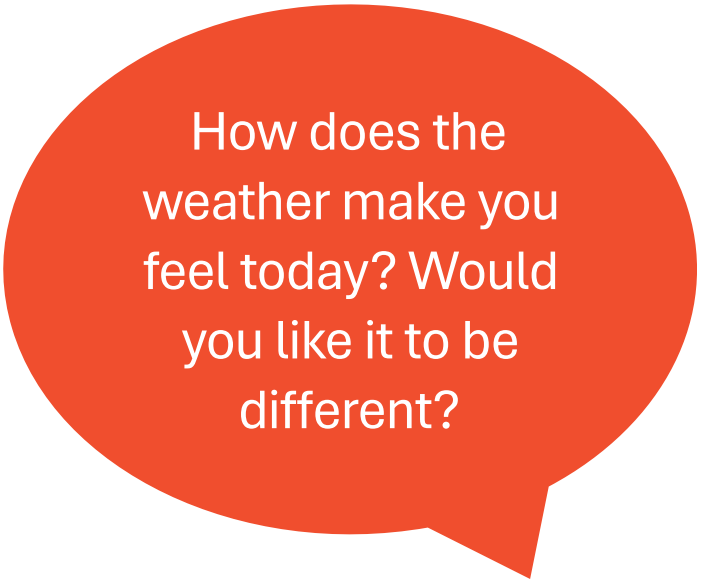
Rain boot

Rain coat

Sweater

Exercise for Session One

Let's brainstorm a bit!



Activity 1:
Go outside and take a moment to notice what the weather is like. Is it always like this? Can you define weather in your own words.

Activity 2:
Teacher groups learners to match the instrument for measuring the elements of weather and to demonstrate how to use the materials for each weather conditions.

Activity 3:
Can you share two weather events?

Activity 4:
Identify three elements of weather.

Wrap-Up
Facilitators can round up the session by summarizing the various learning objectives while linking it to the next session.

Quote:

If you live in a mud hut beware of rain
(African proverb)

SESSION TWO:
CLIMATE

TRAINING PLAN

Session Time	45 Minutes
Focus Areas	1. Climate 2. Climate Regions in Nigeria 3. Instruments for Measuring Elements of Climate 4. Impacts of Climate on Humans and the environment 5. Weather and Climate

Learning Objectives:

By the end of this session, teachers/facilitators should be able to:

1. Define Climate
2. Identify types of Climate Region in Nigeria.
3. Identify the instruments for measuring elements of Climate.
4. Describe the various impacts of Climate on humans and the environment.
5. Differentiate between Weather and Climate.

Climate

Climate is the average weather condition over a long period of time in a particular region. This determines whether a place is generally hot or cold, for example, Jos in Plateau state has a cool climate and Sokoto has a hot climate.

Climate Regions in Nigeria

Climate regions are determined by location and various geographical factors. Below are the major climatic regions in Nigeria:

a. **Sahel Savannah:**
Found in the extreme northern part of Nigeria, such as Borno, and Yobe State. It is characterized by hot, dry climate with desert-like features.

b. **Sudan Savannah:**
Located in the northern parts of Nigeria, including Sokoto, Kano, Katsina and parts of Kaduna states. The region experiences high temperatures and has sparse vegetation.

c. **Guinea Savannah:**
Characterized by distinct dry and wet seasons. States within this zone include Kwara, Kogi and parts of Kaduna.

d. **Montane:**
Found in the Jos Plateau, Adamawa and parts of Taraba. This region has cooler temperatures due to higher altitudes and receives moderate rainfall, supporting unique vegetation. Located in the Southern Parts of Nigeria, in states such as Lagos, Cross River and part of Edo. It is characterized by dense vegetation, heavy rainfall, high humidity and warm temperature.

e. **Rainforest:**
Located in the Southern Parts of Nigeria, in states such as Lagos, Cross River and part of Edo. It is characterized by dense vegetation, heavy rainfall, high humidity and warm temperature.

f. **Mangrove and Freshwater Swamps:**
Found in in the Niger Delta Region of Nigeria, such as Bayelsa, Rivers and Delta states. This region experiences high rainfall and has hot and humid climate.

Instruments for Measuring Elements of Climate

The instruments for measuring elements of climate are like those for measuring weather. They include:

a. Thermometer- instrument for measuring temperature
b. Hygrometer – instrument for measuring humidity
c. Barometer- Instrument for measuring atmospheric pressure
d. Anemometer- instrument for measuring windspeed and direction
e. Rain Gauge – Instrument that measures rain fall / precipitation over a period
f. Wind Vane – Instrument that shows the direction of wind.

Impacts of Climate on Humans and the Environment

Climate conditions influence human life as well as the environment in several ways. These impacts determine how we live, what we produce, and how our surroundings function. Understanding these relationships helps us make informed decisions and adapt to changes in our climate.

For example:

- **Houses we build:** When building our houses, the climate plays a big role in deciding what type of materials to use.
- **Crops we grow:** The temperature, soil condition and rainfall determine the type of crop we grow.
- **Way of life:** Our lifestyle often reflects the climate of where we live. For example, we tend to stay more indoor when the weather is so cold, or limit log walks when the weather is hot.
- **Way we dress:** People tend to change the type of dress they wear at different times. Hence, our clothing adapts to the climate.
- **Food we eat:** Food availability and pricing depend on the climate condition at any given time.

Differences between Weather and Climate

Weather:

a. Short time changes in atmospheric conditions.
b. Weather changes quickly.
c. Weather changes frequently.
d. Weather describes the atmospheric condition of a particular place and time.

Climate:

a. Average weather conditions over a long time.
b. Climate changes slowly over decades.
c. Climate does not change frequently.
d. Climate describes the average atmospheric condition of a larger region over a longer period.
e. Climate is the long-time average condition of sunshine, rain, cloud cover and wind etc.

Materials	a. Flipcharts and markers b. Sticky notes c. TLMs d. Handouts (Textbook or reference materials) e. Projector/laptop f. Blackboard and chalks g. Photographs and pictures h. Shorts videos/documentaries on climate change events in Nigeria.

Schedule of activities

Steps/subtopic/activity	Method	Time	Materials
	Ask and Brainstorm, Coach, Discuss (ABCD)	Facilitators/ Teachers are at liberty to adjust the time to suit the level of Learners	*Use materials relevant for the presentation methodology*
Activity 1: Definition of Climate	• Interactive session • Group discussion • Call learners to answer questions	5 minutes	Flipchart, Map, Video clip, Markers, Projector, Laptop, textbooks, teaching and learning materials
Activity 2: Types of Climate Region in Nigeria	• Interactive session • Group discussion • Call learners to answer questions	10 minutes	Flipchart, Map, Video clip, Markers, Projector, Laptop, textbooks, teaching and learning materials
Activity 3: Identify the instruments for Measuring Elements of Climate	• Interactive session • Group discussion • Call learners to answer questions	5 minutes	Flipchart, Map, Video clip, Markers, Projector, Laptop, textbooks, teaching and learning materials
Activity 4: Describe the various impacts of Climate on humans and the environment	• Interactive session • Group discussion • Engage learners to respond on weather.	5 minutes	Flipchart, Map, Video clip, Markers, Projector, Laptop, textbooks, teaching and learning materials

Activity 5: Differentiate between Weather and Climate	• Interactive session • Group discussion • Learners to answer questions on weather	5 minutes	Flipchart, Map, Video clip, Markers, Projector, Laptop, textbooks, teaching and learning materials

Exercise for Session Two

Activity 1:
Group learners into different climate regions, ask them to describe the different types of climate in such regions, learners should be able to make a presentation on the climate of their regions and to mention the type of food, house and what they wear that is applicable.

Activity 2:
Identify the climate condition in your State

Activity 4:
Using peer-to-peer discussions, or in groups, discuss how climate affects you?

Activity 5:
What are some of the differences between Climate and Weather?

Wrap-Up:
Facilitators can round up the session by summarizing the various learning objectives linking it to the next session.

Quote:

The choices we make today, determines the future!

SESSION THREE:

CLIMATE CHANGE

TRAINING PLAN

Session Time	1 Hour
Focus Areas	a. Climate Change. b. Human activities contributing to Climate Change. c. Natural processes that influence Climate. d. Impacts of Climate Change on humans and the environment. e. Issues of Climate Change in Nigeria

Learning Objectives

By the end of this session, teachers/facilitators should be able to:

1. Define Climate Change.
2. Identify the main human activities contributing to Climate Change.
3. Recognize natural processes that influence Climate Change.
4. Describe the various impacts of Climate Change on humans and the environment.
5. Issues of Climate Change in Nigeria.
6. Interpret Climate illustration in form of pictures, videos and practical examples on field activities

Meaning of Climate Change

Climate change refers to a shift in temperature and weather pattern over a long period of time. This can be attributed directly or indirectly to human activity that alters the composition of the global atmosphere.

In addition, Climate Change can be due to natural climate variability (changing climatic condition). Such natural shifts are due to changes in the sun's activity or large volcanic eruptions.

When too many gases like carbon dioxide (CO2), methane (CH4), Nitrous-Oxide (N2O), etc. enter the air, they trap heat in the atmosphere. This makes the earth warmer and causes many problems for humans, animals and the environment.
Climate change could be because of human induced activities such as bush burning, deforestation (cutting down trees without replacement), etc.

(Think about Climate variability to understand Climate Change. When the variation (in weather patterns) becomes consistent over a period of time, you can say it is climate change.

Causes of Climate Change

Climate Change is caused by various factors, some are natural and others are human made. They include the following:

a. **Burning of fossil fuel:** the release of gases(smoke) from industries, cars, generators, and open burning of wastes.
b. **Deforestation (cutting down trees):** trees help to absorb carbon dioxide and release oxygen that keeps the environment cool. When the trees are cut down for firewood, logging activities, etc. the result of this is that the environment is exposed to various impacts such as heat waves, less oxygen, and so on.
c. **Environmental Pollution:** such as improper waste disposal through open burning of refuse, dumping of refuse in waterways, gutters etc.
d. **Farming and Livestock Activities:** some farming activities like rice farming, cattle rearing, fertilizer usage, use of herbicides/ pesticides. Promote Agroecology practice.
e. **Industrial Activities:** these include the production of fertilizers.

In summary, Climate Change is mainly caused by burning of fossil fuel, cutting down of trees, gas flaring in industries, burning of gathered waste and some farming activities

Natural processes that influence Climate Change

Climate Change is influenced by several natural processes, including:

a. Volcanic eruptions (release aerosols, reflecting sunlight)
b. Changes in solar radiation (e.g., sunspot cycles)
c. Orbital variations (Milankovitch cycles affecting Earth's orbit)
d. El Niño-Southern Oscillation (ENSO, impacting global temp patterns)
e. Plate tectonics (long-term, altering ocean currents and atm composition)

Impacts of Climate Change on Humans and the Environment

These may include:

a. Health impact
b. Socio-economic impact
c. Psychological
d. Emotional and
e. Environment

Health Impact *(Climate Change can make people sick) for example:*

a. Malaria *(Flooding, resulting in stagnant water and breeding place for mosquitoes)*
b. Heat stroke
c. Cholera and diarrhea *(resulting from water-borne diseases and open defecation)*
d. Breathing problems *(Air pollution)*
e. Birth disorder *(Long term health effect from gases)*

Socio-Economic Impact *(Climate Change affects economy's development, food security and worsens social inequalities)*

a. Farmers lose crops due to flood or drought
b. Fishermen catch fewer fish due to water pollution
c. Food prices increase in markets
d. Families lose homes and become displaced during extreme climate and weather events like floods and drought.
e. Children may stop schooling when families relocate.
f. School environment may be affected as they may be used as Internally Displaced Persons (IDP) camps.

Psychological Impact *(Climate change can affect how people think and feel)*

a. Anxiety: Worry about floods or disasters and fear during heavy storms
b. Fear of losing property or farms
c. Children's difficulty concentrating in school due to heat, resulting in poor learning outcomes.

Emotional Impact *(Climate disasters can hurt people emotionally)*

Climate Change is having a profound emotional impact on many people, especially those directly affected by extreme weather events or environmental degradation. Some common emotional responses include:

a. Anxiety and stress about the future
b. Grief and loss for what's being destroyed
c. Eco-guilt for personal carbon footprint
d. Sadness after losing home or loved ones
e. Anger over loss of livelihood
f. Hopelessness about the future
g. Trauma after experiencing disaster

Issues of Climate Change in Nigeria

1. **Rising Temperature (Global Warming) (Teaching focus:** Causes, impacts, adaptation strategies)
    a. Increasing average temperatures across Nigeria.
    b. More frequent heat waves.
    c. Heat stress affects people's health and learning.
    d. Reduced crop yields due to excessive heat.

2. **Flooding (Teaching focus:** Poor drainage, heavy rainfall, deforestation, poor waste management, disaster preparedness).
    a. Urban flooding (e.g., Lagos, Port Harcourt, Abuja)
    b. Riverine flooding along the Niger and Benue rivers
    c. Flash floods destroying homes, schools, and farmlands

3. **Desertification and Drought (Teaching focus:** Sustainable land management, tree planting, water conservation).
    a. Expansion of desert areas in Northern Nigeria.
    b. Shrinking water sources.
    c. Loss of arable land.

4. **Coastal Erosion and Sea Level Rise (Teaching focus:** Sea level rise, mangrove protection, coastal resilience).
    a. Coastal communities in Lagos and the Niger Delta affected.
    b. Saltwater intrusion into freshwater sources.

5. **Irregular Rainfall Patterns (Teaching focus:** climate change, agricultural adaptation.)
    a. Late or early onset of rain
    b. Shorter or longer rainy seasons
    c. Impact on farming cycles

6. **Food Insecurity (Teaching focus:** Climate-smart agriculture, gardens, climate induced conflicts, forced migration).
    a. Reduced agricultural productivity
    b. Post-harvest losses from extreme weather
    c. Rising food prices

7. **Water Scarcity (Teaching focus:** Climate-smart agriculture, gardens, climate induced conflicts, forced migration)
    a. Drying streams and boreholes.
    b. Increased competition for water.

8. **Health Impacts (Teaching focus:** Climate and health connection, hygiene practices.)
    a. Increased malaria due to changing weather patterns.
    b. Heat-related illnesses.
    c. Water-borne diseases after floods.

9. **Loss of Biodiversity (Teaching focus:** Ecosystem services, conservation practices)
    a. Disappearance of plant and animal species.
    b. Deforestation and habitat destruction.

10. **Conflict and Migration (Teaching focus:** Environmental security and peaceful resource management.)
    a. Farmer–herder conflicts linked to shrinking and competition for resources.
    b. Internal displacement due to flooding.

11. **Energy and Emissions (Teaching focus:** Renewable energy (solar), energy efficiency, clean cooking.)
    a. Dependence on fossil fuels.
    b. Gas flaring in the Niger Delta.
    c. Deforestation for firewood.

Materials	i. Flipcharts and markers ii. Sticky notes iii. Participant workbook iv. Teaching and Learning Materials v. Handouts (**Climate Change**) vi. Projector/laptop vii. Blackboard and chalks viii. Photographs and pictures ix. Shorts videos/documentaries on Climate Change events in Nigeria

Schedule of activities

Steps/subtopic/activity	Method	Time	Materials
	Ask and Brainstorm, Coach, Discuss (ABCD)	Facilitators/ Teachers are at liberty to adjust the time to suit the level of Learners and the discussions.	Teaching and Learning Materials
Activity 1: Define Climate Change	Group Discussion	10 minutes	Flipchart, TLMs
Activity 2: Identify the main human activities contributing to Climate Change.	Group Discussion	15 minutes	Flipchart, TLMs

Activity 3: Recognize natural processes that influence Climate Change.	Discuss Show video clip of the impact of Climate Change. Cite examples from the local context or within Nigeria	15 minutes	Flipchart, Sticky Notes,TLMs
Activity 4: Describe the various impacts of Climate Change on humans and the environment.	Individuals Role play, Dramas	20 minutes	Personal Presentation

Exercises for Session Three

Activity 1:
Human Activity Effects on Climate

Release carbon dioxide into the atmosphere thereby causing flooding, heatwave, etc.

Reduces Earth's ability to absorb CO2

Releases methane into the atmosphere

Can produce various greenhouse gases e.g. Co2.

Activity 2:
Participants should be asked to group themselves into 3-5 per group and discuss the impact of Climate Change within their environment.

Activity 3:
Storytelling: Learners are to be encouraged to tell stories within their environment in relation to climate activities (Flooding, drought, fire, wind, oil spill, improper waste disposal etc.)

Activity 4:
Field trips/ Excursions: Taking Learners to dump sites, Recycling Facilities within their environment.

Classroom activities that facilitators and teachers can engage in.

Activity 5:
Debates/ competitions: In school settings, facilitators/teachers can ask learners to discuss climate related topics, its effect and mitigation strategies.

Activity 6:
Waste/Plastic upcycling: facilitators/teachers can engage learners via projects to transform waste plastic/can to decorative objects in the school or house

Activity 7:
Cause and Effect Matching Draw lines to connect the human activity on the left to its climate change effect on the right.

Wrap-Up:
Facilitators can round up the session by summarizing the various learning objectives linking it to the next session.

SESSION FOUR:

GLOBAL WARMING, GREENHOUSE GAS EMISSION EFFECT, CLIMATE CHANGE OPPORTUNITIES

TRAINING PLAN

Session Time	**1hr 30 Minutes**
Focus Areas	1.Global Warming i. Meaning ii. Causes iii. Effects 2.Greenhouse Gases (GHGs) i. What are GHGs? ii. Types of GHGs (Natural and Man-made) iii. Greenhouse Effects iv. Examples of each type of GHGs v. Sources of GHGs 3.Meaning of Carbon Footprint. 4.Climate Change Opportunities i. Green jobs and employment ii. Renewable energy opportunities iii. Climate Finance and Investment iv. Innovation and technology for Climate Resilience

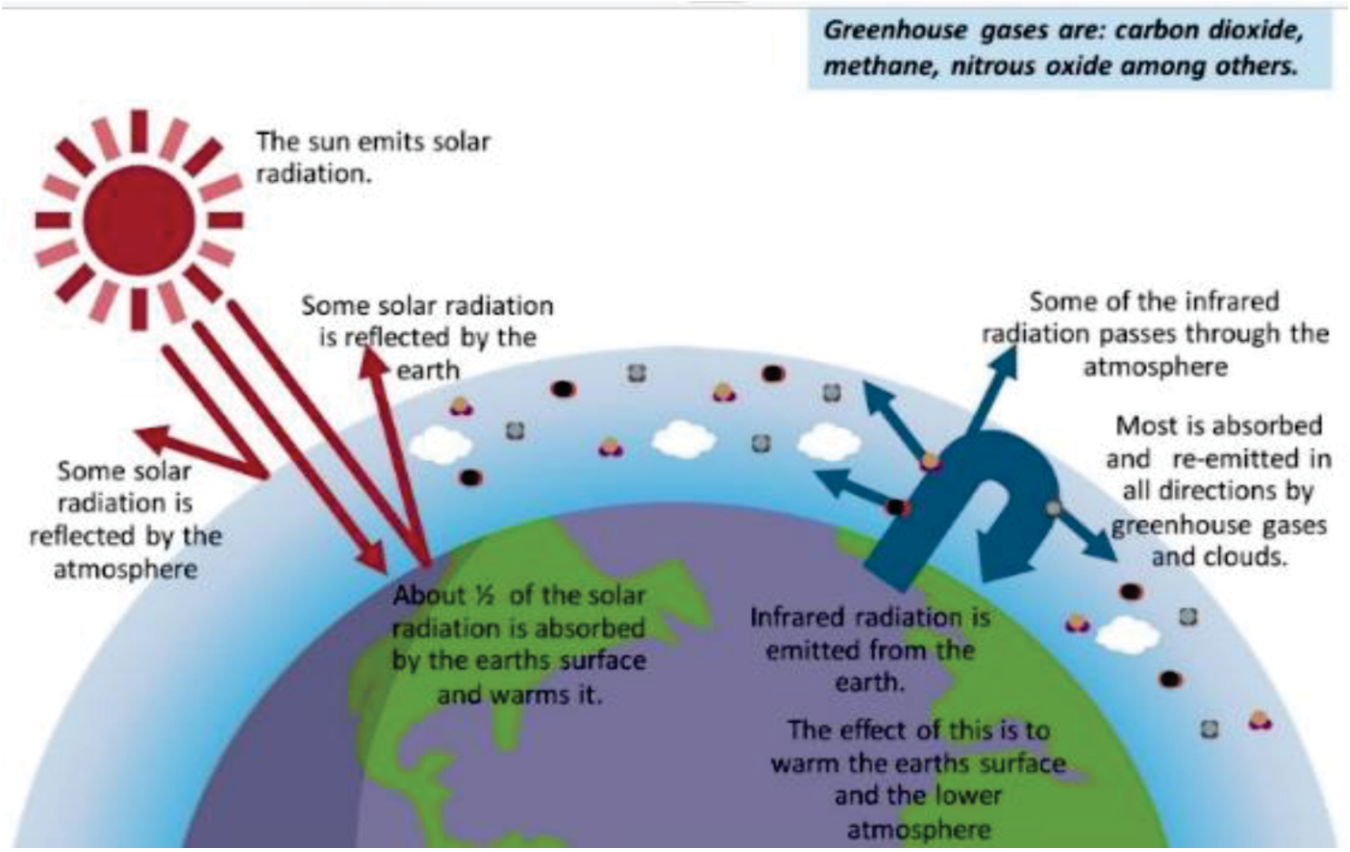
Learning Objectives:

By the end of this session, teachers/facilitators should be able to:

1. Describe global Warming, its causes, effects and provide practical examples.
2. Explain the meaning of Greenhouse Gases, identify the different types and their effects.
3. Discuss the examples of man-made and natural GHGs and identify the sources of GHGs.
4. Explain the meaning of Carbon Footprint.
5. Identify opportunities in Climate Change.

Global Warming

Global warming is the increase in the Earth's average temperature that occurs when the concentration of greenhouse gases in the atmosphere increases.



Causes of Global Warming

The activities below are some of the causes of global warming:

i. Burning fossil fuels (coal, oil, and gas)
ii. Deforestation (cutting down forest)
iii. Livestock farming (overgrazing)
iv. Urbanization



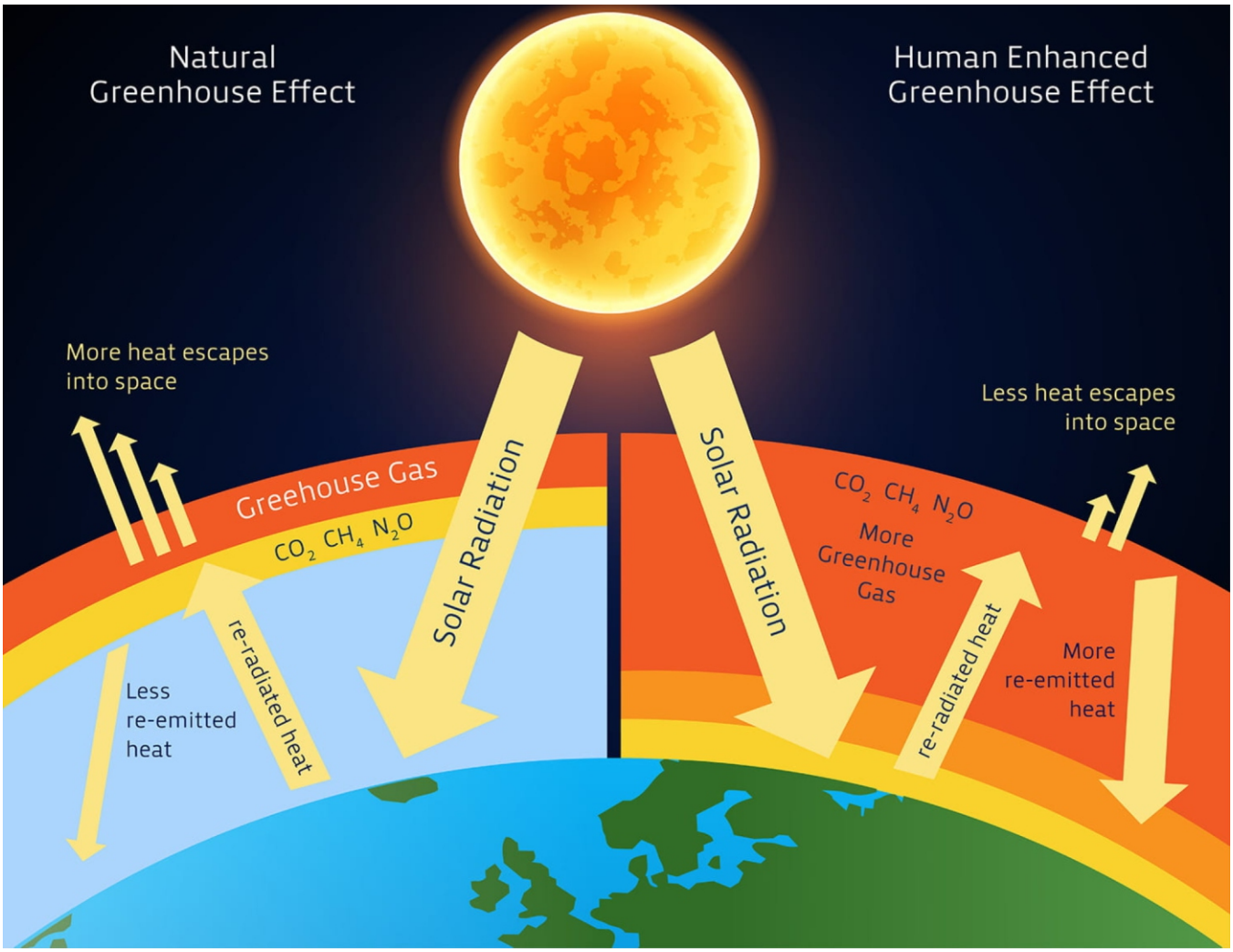

Effects of Global Warming

In the event of global warming in the community, below are some of the resulting effects:

a. Extreme heat condition
b. Desertification
c. Drought
d. Rise in sea level

Greenhouse Gases (GHGs)

Greenhouse Gases (GHGs) are gases that trap heat from the sun in the atmosphere. Greenhouse gases are a bit like the Earth's blanket, keeping it warm. However, with increased greenhouse gas emission, the Earth's blanket has become very thick. This means the average temperature across the planet has increased. This warming is creating climate change.



Greenhouse Effects on Climate Change

The greenhouse effect on Climate Change in Nigeria is far-reaching and devastating. Rising temperatures are causing increased heatwaves, droughts, and erratic rainfall patterns, which are severely impacting agriculture, the backbone of Nigeria's economy. As a result, this has led to food insecurity, loss of livelihoods, and increased poverty.

Some of the Greenhouse effects include:

a. **Flooding and Erosion:** Rising sea levels and heavy rainfall are causing floods, displacement, and erosion in coastal cities like Lagos and Port Harcourt.
b. **Agricultural Disruption:** Reduced rainfall and increased droughts are affecting crop yields, threatening food security and the livelihoods of millions.
c. **Water Scarcity:** Changes in precipitation patterns are affecting water resources, leading to scarcity and increased competition for this vital resource.
d. **Health Impacts:** Climate change is increasing the spread of diseases like malaria and heat-related illnesses.

Types of Greenhouse Gas (GHGs)

Greenhouse Gases (GHGs) can be man-made or natural. Below are some examples:

a. **Natural GHGs**
   - Carbon dioxide (CO_2)
   - Methane (CH_4)
   - Water vapor
b. **Man-made GHGs**
   - Carbon dioxide (CO_2)
   - Nitrous Oxide (N_2O)
   - Fluorinated gases (used for cooling and refrigeration)

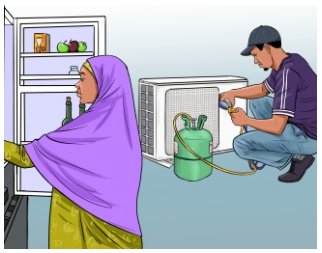
Sources of GHGs

Below are some of the sources of the natural and man-made GHGs:

i. Vehicular emissions
ii. Deforestation
iii. Waste Dump
iv. Manufacturing
v. Refrigerators and Air conditions
vi. Agricultural activities.








In some cases, these activities may be seen as normal practices carried out within our environment. However, when fossil fuels, for example, are used excessively, they disrupt the natural balance of carbon in the atmosphere. This imbalance increases the temperature through greenhouse effect.

Carbon Footprint

Carbon footprint is the total amount of greenhouse gas emission released into the atmosphere by a particular person, organization, product or activities. It takes account of your diet, travel, and domestic energy use to calculate your impact.

Please note that carbon footprint is calculated using a carbon calculator available online.

Opportunities in Climate Change

Climate Change Opportunities are the economic, social and environmental benefits we gain when we take actions to address Climate Change. A few examples are:

1. **Renewable Energy Development:** Transitioning from fossil fuels to solar, wind, and hydropower creates new industries, more electricity access, reduced pollution and energy security. This will help with clean air.
2. **Circular Economy (Recycling and Upcycling):** Finding creative ways to refuse, reduce, reuse, recycle and repurpose old things, instead of throwing them away, like turning plastic bottles into new products.
3. **Green Job Creation:** Climate action creates employment in renewable energy, waste recycling, sustainable transport and environmental conservation.
4. **Sustainable Urban Development:** Cities improve through better public transportation, green buildings, waste management systems, cleaner air and healthier communities. Such examples include building cities and roads that are better for the environment, with more trees, bike paths, and energy-saving buildings.
5. **Education and Workforce:** Learning green skills to work in jobs that help protect the environment, like installing solar energy or designing eco-friendly products.
6. **Green Finance and Investment:** Through mechanisms like the Green Climate Fund, countries can access funding for infrastructure, renewable energy projects, adaptation programs, and community resilience. Using money to support projects and businesses that help the environment instead of harming it.
7. **Innovation & Technology Advancement:** Climate Change drives innovation in electric vehicles and trains, Compressed Natural Gas (CNG), etc., clean technology, energy storage and Smart farming tools.
8. **Environmental Restoration & Biodiversity Protection:** Climate action encourages Tree planting, Forest conservation, and Wetland protection. Taking care of nature by protecting forests, oceans, and wildlife, so that they can help fight Climate Change naturally.

Materials	• Flipcharts, markers, • Pictures depicting Global Warming and Greenhouse Effects • TLM with information on Global Warming, Green House Gas Emission • Participant workbook • Projector/video clips

Schedule of activities

Steps/subtopic/activity	Method	Time	Materials
Presentation: Global Warming, Greenhouse Gas Emissions and Effects, Climate Change Opportunities	Ask and Brainstorm, Coach, Discuss (ABCD)	Facilitators/ Teachers are at liberty to adjust the time to suit the level of Learners	Teaching and Learning Materials
Activity 1: i. Explain the meaning of Global Warming ii. List the causes of Global Warming iii. State the effects of Global Warming iv. Give examples of Global Warming	Ask and brainstorm Show video clip of Global Warming to Learners	30 minutes	Flipchart, Diagrams, Projector, Laptop, Manual, Workbook, Sticky Notes
Activity 2: i. Explain the meaning of Greenhouse Gases ii. List the types of Greenhouse Gases (GHGs) iii. State the effects of Greenhouse iv. List examples of Man-made and Natural GHGs v. Mention sources of Greenhouse Gases (GHGs)	Listen, ask, brainstorm and write Illustration Demonstration Show video clip of Global Warming to Learners	30 minutes	Flipchart, Diagrams, Projector, Laptop, Manual, Workbook, Sticky Notes
Activity 3: Explain the meaning of Carbon Footprint	Listen, Show video clip of Global Warming to Learners Interactive Session	15 minutes	Flipchart, Projector, Laptop, Manual, Workbook, Sticky Notes
Activity 4: Mention opportunities in Climate Change	Explain Interactive Session Show video clip of Global Warming to Learners	15 minutes	Flipchart, Projector, Laptop, Manual, Workbook, Sticky Notes

Exercise for Session Four

Activity 1:

a. Explain the meaning of Global Warming (Demonstrate with the use of multiple blankets)
b. List two causes of Global Warming

Activity 2:

a. What do you understand by Greenhouse Gases (GHGs)
b. List two examples each of Man-made and Natural Greenhouse Gases (GHGs)
c. Brainstorming Greenhouse Gases in groups, list two sources as you can for each of the following greenhouse gases:
    i. Carbon Dioxide (CO_2)
    ii. Methane (CH_4)
    iii. Nitrous Oxide (N_2O)
    iv. Fluorinated Gases

Activity 3:

Think about your daily life: What actions contribute to Carbon Footprint? (allocate figures to different types of carbon footprint such as transportation by bike, motorcycle and car, cooking with kerosene stove, gas and electricity etc.)

a. List 5-7 activities you do regularly (e.g., charging your phone, walking to school, eating a meal, watching TV, buying a new item).
b. Calculate your Footprint in a day.
c. For each activity, think about how it might contribute to greenhouse gas emissions (e.g., electricity from burning fossil fuels, vehicular emissions, manufacturing of goods).
d. Share with a partner: What is one small change you could make to reduce your "personal carbon footprint"?

Activity 4:
Climate Opportunities Debate- Divide the class into small groups. Assign each group one of the "Climate Change Opportunities" (e.g., Renewable Energy, Circular Economy, Climate-Smart Agriculture). Each group should prepare a short presentation or argument explaining:

a. What their assigned opportunity is.
b. How it helps combat Climate Change.
c. What jobs or skills might be needed in this area in the future.
d. Why do they think their opportunity is the "most exciting" or "most important."
e. "Green Job" Vision Board- Imagine a future where Nigeria has fully embraced climate action. What kind of "green jobs" would exist in your community or Nigeria? Create a small vision board (using drawings, cut-outs from old magazines, or descriptions) showing different careers or industries that would help combat Climate Change.

Wrap-Up:
Facilitators can round up the session by summarizing the various learning objectives linking it to the next session.

SESSION FIVE:

CLIMATE CHANGE ACTION

TRAINING PLAN

Session Time	1 hour 30 mins
Focus Areas	a. Introduction to Climate Change Action. b. Climate Change Adaptation and Mitigation c. Climate Resilience d. Climate Justice

Learning Objectives

By the end of this session, teachers/facilitators should be able to:

1. Define Climate Change Action.
2. Explain Climate Change Adaptation and Mitigation.
3. Climate Change Responses for Mitigation and Adaptation.
4. Differentiate between Climate Change Adaptation and Mitigation.
5. Discuss or Explain Climate Change Resilience.

Climate Change Action

These are the actions taken by individuals, communities and nations to reduce and cope with the effects of Climate Change.

Climate Change Adaptation and Mitigation

a. Climate Change mitigation is the process of reducing greenhouse gas emissions that contribute to Climate Change in the atmosphere.
b. Climate Change Adaptation is the process of adjusting to the effect of Climate Change, such as extreme weather, water and food insecurity and rising sea levels.

Differentiate between Climate Change Adaptation and Mitigation

Climate Change Mitigation is the action to reduce Greenhouse Gases (GHGs) while Adaptation is the action to cope with the effects of Climate Change impacts.

Climate Change Responses

i. **Mitigation –** Reducing emissions that causes climate change (Stopping the actions from getting worse)

Simple Actions for Mitigation

a. Planting and caring for trees
b. Switching off lights and fans when not in use
c. Walking or using shared transport when possible
d. Use of sustainable transportation

e. Avoid burning waste
f. Using less plastics
g. Using locally sourced foods to reduce carbon emission due to long transportation.

ii. **Adaptation** (Coping with climate impacts)

Simple Actions for Adaptation

a. Keeping surroundings clean to prevent flooding
b. Proper drainage maintenance
c. Conserving water during dry seasons
d. Knowing about heat safety practices
e. Infrastructure upgrade.
f. School emergency response awareness
g. Proper waste handling

Climate Smart Habits at Home and School

a. Become climate champion both at home and in schools.
b. Join Environmental and Climate Clubs.
c. Encourage energy saving practices.
d. Grow plants, flowers and trees.
e. Turn of water points when not in use.

Climate Change Resilience

It is the ability to prepare for, recover from and adapt to the impacts of Climate Change. Climate resilience is the capacity of a community or an environment to anticipate and manage climate impacts, minimize their damage and recover/ transform after the initial shock.

Climate Justice

Climate justice is the principle that climate change is not only an environmental issue but also a social, economic, and human rights issue. It emphasizes fairness in how the causes and impacts of climate change are addressed, particularly for vulnerable populations. It seeks to address the unequal impacts of climate change on vulnerable populations, such as the poor, women, children, and indigenous communities, who often contribute the least to climate change but suffer its worst effects.

Climate justice recognizes that:

a. Those who contribute the least to climate change often suffer its worst impacts.
b. Poor and marginalized communities, women, children, persons with disabilities, rural populations, and indigenous groups are more vulnerable to climate risks.
c. Everyone has the right to a safe, healthy, and sustainable environment.

Key Principles of Climate Justice

- Equity: Recognizing that different countries and communities have contributed differently to greenhouse gas emissions and have different capacities (resources and technology) to adapt to and

deal with climate change. This means those who have contributed more should take more responsibility, and those with fewer resources need support.

- Human Rights: Ensuring that climate change policies and actions respect, protect, and promote human rights, including the right to life, health, a safe environment, food, and water. No one should lose their basic rights due to climate impacts or climate policies.
- Participation: Involving vulnerable populations and affected communities in decision-making processes related to climate change policies and actions. Their voices and traditional knowledge are crucial for effective and fair solutions.
- Sustainable Development: Promoting sustainable development and reducing poverty, while also addressing climate change. This means finding solutions that improve people's lives and protect the environment simultaneously.

Key Climate Justice Issues in Nigeria

a. Flooding disproportionately affects low-income communities living in flood-prone or informal settlements.
b. Farmers and pastoralists experience livelihood losses despite contributing very little to greenhouse gas emissions.
c. Children's education is disrupted when schools are damaged or used as shelters during climate disasters.
d. Women often bear a greater burden due to increased caregiving responsibilities and limited access to resources.
e. Rural communities may lack access to climate information, early warning systems, and adaptation support.

Climate justice calls for inclusive solutions that ensure:

a. Fair access to resources, information, and decision-making processes.
b. Protection of vulnerable groups from climate risks.
c. Shared responsibility between governments, institutions, industries, and individuals.
d. Climate actions that promote equity, dignity, and sustainable development.

Therefore, Climate justice refers to the fair distribution of the benefits and burdens of climate change policies and actions.

Educators and facilitators play a key role in helping learners understand these connections and empowering them to advocate for fair, inclusive, and locally appropriate climate solutions.

Key Messages for Facilitators

a. Climate change affects people differently; vulnerability is shaped by social and economic conditions.
b. Climate education should promote empathy, fairness, and shared responsibility.
c. Learners should be encouraged to think about local climate impacts and community-based solutions.
d. Climate action must include voices of women, youth, and marginalized groups.

Materials	a. Flipcharts, Cardboards and markers b. Projector c. Participant workbook d. Sticky notes e. Laptop f. Video clips g. TLMs

Schedule of activities

Steps/subtopic/activity	Method	Time	Materials
Presentation: **Climate Change Action**	Ask and Brainstorm, Coach, Discuss (ABCD)	Facilitators/ Teachersareat liberty to adjust the time to suit the level of Learners	Teaching and Learning Materials
Activity 1: Define Climate Change Action	Discuss	5 minutes	Flipcharts Sticky Notes Cardboards
Activity 2: Explain Climate Change Adaptation and Mitigation	• Listen, ask, brainstorm and write • Pictures • Show video clip of Climate Change Adaptation and Mitigation OR use simple examples from the local context.	25 minutes	Flipchart, Projector, Laptop, Manual, Workbook, Sticky Notes
Activity 3: Discuss or Explain Climate Change Resilience Personal Climate Action Pledge	Discuss Role-play and Reflection Show video clip of the impact of Climate Change OR use simple examples from the local context.	20 minutes	Flipchart, Projector, Laptop, Manual, Workbook, Sticky Notes Role-play
Activity 4: Differentiate between Climate Change Adaptation and Mitigation	Brainstorming Tabular representation	10 minutes	Flipcharts Sticky Notes Cardboards
Activity 5: Explain climate justice and some of the climate justice issues in Nigeria	Discussion, interactive sessions	30 minutes	Teaching and Learning materials

Exercises for Session Five

Activity 1:
Adaptation vs. Mitigation Sorting Create two columns: "Adaptation" and "Mitigation." Write the following actions under the correct heading:

a. Building a flood barrier
b. Using solar energy
c. Planting drought-resistant crops
d. Turning off lights when leaving a room
e. Developing an early warning system for heatwaves
f. Taking a public bus instead of a private car
g. Collecting rainwater for gardening
h. Restoring a mangrove forest

Activity 2:
Community Resilience Map
What can we do to make our Schools and Community safer?"
Learners add 2 simple actions on the map, such as:

a. Clear gutters
b. Plant trees
c. Avoid dumping waste
d. Know emergency numbers

Activity 3:

a. Role-Play: Children act as weather forecasters giving early warnings
b. Sorting Game: Cards with actions (e.g., "plant trees," "use solar," "build flood walls") – students sort into "Adaptation" or "Mitigation."

Activity 4:

a. Debate: "Which is more important for Nigeria: Adaptation or Mitigation?"
b. Case Study Analysis: Students examine a local climate event (e.g., flooding in Lagos) and suggest adaptation and mitigation strategies.

Activity 5:

a. Personal Climate Action Pledge Write a short personal pledge (3-5 sentences) committing to at least three actions you will take personally to either mitigate Climate Change or help your community adapt to its effects. Explain why you chose these actions.
b. A slogan promoting climate action and resilience.

Activity 6:

a. How does climate variation affect your community?
b. Who is most affected by climate-related problems in your area, and why?
c. What actions can individuals, schools, and communities take to promote climate justice?
d. How can young people contribute to fair climate solutions?

Wrap-Up:

Facilitators can round up the session by summarizing the various learning objectives linking it to the next session.

Climate Change Education (CCE) Contributors of Knowledge

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