# AFRICA CLIMATE ABASSADOR TOOLKIT





Kchini Gardeners Nature Connection through Gardening







African Youth Initiative on Climate Change Zimbabwe







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# USING THE AFRICA CLIMATE AMBASSADOR TOOLKIT

Welcome to the Africa Climate Ambassador Toolkit. These tools have been developed to enable academics, government officials, members of civil society and other actors to teach about and expose youth to climate change. Additionally, this toolkit explains how parents, caretakers and teachers can easily talk about climate action with children using science and stories to inspire activism in the next generation.

#### Why did we create the Africa Climate Ambassador Toolkit?

African youth are affected by climate change but are not yet on the frontline in the fight against it. Government, civil society, private sectors, parents, and children all have a role to play in defending the planet. Climate change is among the greatest challenges on our planet today, and we need to come together and fight the problem as one.

#### **Our Aims and Approaches**

This toolkit will advance your understanding of how climate change affects the youth of today and tomorrow. It will also groom new advocates for environmental literacy in both primary and secondary schools. Climate education will focus on conservation actions at the local level, with an emphasis on how climate change impacts our soils, oceans and the unique biodiversity in Africa. The goal here is to create a platform where anyone can teach, learn and share!

#### Who Can Use This Toolkit?

The Africa Climate Ambassador Toolkit can be used by anyone! It can be used in a classroom setting where teachers can interact with students and review the different sections or it can be adapted in any other settings like households, youth centers or formal locations. Anyone can be the teacher and ayone can be the student!

# USING THE AFRICA CLIMATE AMBASSADOR TOOLKIT

#### What Can You Find in the Africa Climate Ambassador Toolkit?

The Africa Climate Ambassador Toolkit consists of different sub-topics designed for children and teachers. The sub-topics include;



It is important that the toolkit continues to evolve as it is adapted and used in new countries around the world. Each research team should develop their own questions and include topics of interest to them. It is equally important that the toolkit remains constant to enable comparisons across countries and over time, so as to build global cooperation.

# UNDERSTANDING OUR CLIMATE

# **Background**:

- **Earth** is among the many planets in the universe which include Mercury, Venus, Mars, Jupiter, Saturn, Uranus and Neptune. Our planet is known as Earth.
  - Earth is the only planet with known life. Life on Earth occurs in the biosphere, or the space including the air we breathe and the sunlight we see, plus bodies of water, soil, plants and other living organisms
- Air is found in the atmosphere and is comprised of nitrogen, oxygen, carbon dioxide and water vapor, which are essential for plants.
  These compounds and the plants they grow all support human life.
  Air is also important because it determines our weather and climate patterns, which affect our food systems.
- Weather is a specific event at a given time and place. It can be hot or cold, dry or wet, clear or cloudy, and it happens over a few hours, day or weeks. Weather is only temporary and it's made up of rain, sunlight, temperature, pressure, wind and many other components.
- **Climate** is the average weather conditions in a place measured over 30 years.
- Water: the world cannot survive without water. All living things need water in order to live. Water is key in the production of food for humans, plants and animals.
- **Soils** are greatly important to things that grow, especially plants. Soils have minerals, nutrients, gases and much more that supports life.

# PAST AND PRESENT CLIMATE CHANGE SITUATIONS

Did you know that in the past, climate change didn't threaten our communities or food systems?

> So we can learn from past practices to grow in the future?

# Food Harvests

- In the past: People harvested a wider variety of food in one place.
- **Today:** Monoculture, the harvest and production of one crop, is practiced heavily.

# **Our Vegetation Cover**

- In the Past: We had many trees in our homes and natural forests. We had more indigenous trees. The forests helped in rainfall formation.
- **Today:** We have more exotic trees than our indigenous trees and what used to be forests are now industrial parks.

# Weather Changes

- In the past: We used to receive just enough rain for our plants, animals and people. The sun was just enough for ourselves, the plants and the animals. Rain and sunny seasons were predictable.
- **Today:** We rarely receive enough rain for our crops to grow. At times, it rains too much and hailstorms and floods damage our homes and crops. Our weather patterns are no longer predictable.

# **Soil Changes**

- In the past: Fertile soils provided us with high-yield harvests.
- **Today:** To grow food, we need to buy chemical fertilizers to artificially support our soils.



# Learning prompt



- Ask students where they get their food from and if their family buys fertilizer to support their soil
- Civic Action Challenge: Encourage students to use this advocacy packet to start a composting system at school to help improve school sustainability and soil quality

# **ORIGIN OF CLIMATE CHANGE**



### **Greenhouse Gasses**

• Greenhouse gases are found in the ozone layer, which is an invisible layer of the Earth's atmosphere that absorbs the sun's harmful rays. Carbon dioxide is one example. Greenhouse gases can be natural or man-made. They act like a protective blanket around the Earth. They trap heat in which warms the Earth in a process known as the greenhouse effect.

### **Greenhouse Effect**

 The greenhouses used by farmers help us to explain the greenhouse effect in the atmosphere. In some areas, farmers build a plastic house to plant crops in, and the clear walls allow the sun's rays to enter. This prevents the heat inside from going back into the atmosphere. In a way, the Earth is like this plastic house. When the sun's energy reaches the Earth's atmosphere, some of it is reflected back to space and the rest is absorbed and re-radiated by greenhouse gases. The absorbed energy warms the atmosphere and the surface of the Earth. With human activities like clearing land for agriculture and buildings, we increase these greenhouse gases which warm our Earth and can impact climate patterns.



# **Climate Change**

 Climate change refers to the increasing changes in the measures of climate over a long period of time. Climate change is related to Global warming. Global warming is the average increase in Earth's temperature. Global warming is caused by both natural causes and human activities. The natural activities include volcanic eruptions and natural fires which help to keep the earth warm. Human activities are the main cause of global warming. Climate change has been here throughout Earth's history, but this time it's different. Human activity is causing worldwide temperatures to rise higher and faster than any time we know of in the past





# Learning prompt



Ask your students to go home and talk with an older caretaker (parent, grandparent) about some changes they have seen in the climate, soil, trees, or food harvest in their lifetime. Have them write down the response and bring it to class the next day.

# **CAUSES OF CLIMATE CHANGE**

When greenhouse gases are released into the atmosphere, they add to the greenhouse effect and warm the earth.

### The following contribute to climate change:



# Human Activities that Contribute to Climate Change

- **Open burning/cooking with wood**: People in Africa cook on open fires. Burning wood on an open fire releases gas into the air as smoke.
- **Deforestation or cutting down trees:** When we cut down trees to clear land for agriculture and other activities, we reduce the carbon sink, or Earth's natural carbon reservoir. Trees help reduce the carbon we release by taking in carbon, and they release oxygen.
  - We cut down trees to clear land for construction, building roads, setup farms and settlements.
  - Trees are among the best carbon sinks, as they absorb in a lot of carbon dioxide that is being released into the atmosphere



• **Energy use:** Some machines used to generate electricity can release carbon monoxide in the atmosphere. Other forms of energy generation can release greenhouse gases.



# **Learning Prompt**



- Use this video to teach students about how plastics are created
- Civic Action Challenge: Encourage students to create art out of plastic waste materials. You can see examples of this <u>here</u>.

- Burning farm lands: When farms and wood are burned for energy it releases carbon dioxide and other greenhouse gases back into the air. Additionally, vegetation is destroyed and the greenhouse gases they release pollute the air. Birds, insects and animals die because their homes and food are destroyed. Soil can also lose its fertility and its cover which leads to soil erosion
- Industries: Smoke released from factories and fumes from cars that carry goods to and from factories contribute to Greenhouse gases. These are known to be greater causes of greenhouse gases into the atmosphere. Because fossil fuels such as gas and coal are burnt and released into the atmosphere during the production and processing of our foods, they increase greenhouse gases.
  - Means of Transport: We love cars, trains and motorcycles but all these are known to emit greenhouse gases into the atmosphere. We use cars to go to school and transport food to markets etc.
    - **Consumption of more meat products**: Rearing of animals and
    - Consumption of more meat products: Rearing of animals and meat production on a large scale is known to produce more animal methane and waste that increases greenhouse gases



# **Learning Prompt**



- Watch <u>this video</u> on the carbon cycle.
- Plant trees in your community or fundraise to plant trees with
  <u>EARTHDAY.ORG's Canopy Project.</u>

# IMPACTS OF CLIMATE CHANGE



"Every day we hear about climate change, but do we know its impacts?"

# Investigate the Issue:

These impacts extend well beyond an increase in temperature, affecting ecosystems and communities. Things that we depend upon and value – water, energy, transportation, wildlife, agriculture, ecosystems, and human health – are experiencing the effects of a changing climate.



### **Heavy Rains**

• Heavy rains which are occurring more frequently than usual can cause flooding that damages our food and water.



### **Pests and diseases**

• The prevalence of pests that can carry disease like locusts or damage crops like army worms is increasing, and these organisms are now found in areas they were not seen before, leading to disease outbreaks.



# **Prolonged droughts**

• With warm temperatures, most of the plants are not drought resistant and cannot survive the prolonged droughts caused by warming.



# Learning prompt



- Have students watch <u>this crash course</u> video on extreme weather.
- Civic Action Challenge: Have students go home and teach their families about what they learned in the video.

 Our food supply depends on climate and weather conditions. Although agricultural practices may be adaptable, changes like increased temperatures, water stress, diseases, and weather extremes create challenges for the farmers and ranchers who put food on our tables.

Food

#### Health

 Human health is vulnerable to climate change. The changing environment is expected to cause more heat stress, an increase in waterborne diseases, poor air quality, and diseases transmitted by insects and rodents. Extreme weather events can compound many of these health threats.



# **The Environment**

• Ecosystems are also affected by climate change. Habitats are being modified, the timing of events such as egg laying are shifting, and species are altering their home ranges.



### **Bushfires**

 The number of extreme fire risk days has grown over the past four decades, Future hotter and drier conditions are likely to cause further increases in the number of high fire-risk days and in the length of the fire season



### Infrastructure

 Climate change can have impacts on infrastructure such as electricity and transport networks. Electricity demand rises sharply during heat waves because of increased air conditioning. To avoid extensive blackouts there has been investment in generation and network capacity that is only used for a short time.



# Learning prompt



Use this <u>Web of Life</u> activity (Project Learning Tree) to teach students about food webs and ecosystems

# **MITIGATION**



I'm worried about not knowing what climate adaptation and mitigation is. Can it stop climate change?

Adaptation

Africa is already experiencing climate change effects. Adaptation is a way of coping or taking action to live with the changes it brings about.



Mitigation is any action taken to reduce or remove the causes of climate change.

Can I do something about climate change?

You can! Share what you have learned with family and friends and challenge them to limit waste. Our teacher says everyone can do something about climate change.

You can by becoming a Climate Ambassador!

# **Main Objective:**

To establish and improve on leadership skills among youth activists. The Earth steward will lead conservation and sustainable practices.



Did you know?

Children can influence fellow children and adults to be part of the conservation journey.

# **The Climate Ambassador**

#### **Climate Ambassador will cover:**

- Role of governments in conservation
- Children role models in conservation
- Our future

In the fight to defend the planet, the world is working together to fight climate change and defend biodiversity. The United Nations (UN) and different countries in the world are fighting for the environment.

#### 2030 Sustainable Development Goals (SDGs):

The UN set these 17 goals to help countries save our Earth. You can learn more about this <u>here</u>

#### 2015 Paris Agreement:

This agreement was signed by countries to reduce greenhouse gases in the atmosphere

# The Government

As part of the UN, African governments are fighting climate change and conserving biodiversity by:

- Use of energy-saving technologies
- Planting trees
- Engaging young people and teaching about climate change in schools

# **Children as Role Models**

- Did you know that you can be a role model in climate action?
- You can use your talent



# Learning Prompt



Ask students what they think they can do to help with climate change in their everyday lives.



#### THE ISSUE:

Deforestation in Nigeria is major issue due to urbanization and industrialization. Forests are being exploited and cleared for infrastructure, industry and to fuel cookstoves. According to Global Forest Watch (Globalforestwatch.org) In 2010, Nigeria had 10.9Mha of natural forest, extending over 12% of its land area. In 2020, it lost 97.8kha of natural forest, which has led to increase in CO2 emission into the environment causing global warming. This act had also led to adverse weather condition such as hotter climates and desertification.

### **BEST PRACTICES/ SOLUTIONS**

Paul conducts tree planting exercises in his community to promote afforesation. He encoruages students and youth to start tree planting clubs at their schools, to collect seeds and start tree nurseries. People can create their own gardens and green parks to combat the chopping down of trees.

- Paint a mural with a teacher and group of students to spread messages about the dangers of deforestation and importance of tree planting.
- Start a seed collection of indigenous tree's and work with environmental club to create a tree nursery and planting calendar.
- Contact a regional forestry representative and invite them to school to come up with a plan to engage and educate local government officials.

# **Sustainable Food Systems**



Food waste and food loss is one of the main challenges in Malawi including where I come from, Mponela. Even though a lot of food is harvested it is not enough to take us through the year. Additionally, a lot of food is just thrown out because it is not safe for consumption.

### **BEST PRACTICES/ SOLUTIONS**

Brenda believes that it is important to add value to the food products by processing them, which will also help reduce food waste. It can also be helpful to teach people about food processing practices. Additionally, composting can be a good step towards reducing food waste.

- Start a composting club at your school. Check out <u>this link</u> on composting to get started.
- Have students pick a food system problem and <u>create an action</u> plan to solve it (Foodspan).

# **Waste Management**



Poor waste management is a global pandemic here in Malawi and in most communities. People are suffering from diseases such as Cholera, and other diseases that come due to poor disposal of waste. Water management is also bringing in economic crisis.

# **BEST PRACTICES/ SOLUTIONS**

Malango aims to educate people on proper waste disposal in order to prevent poor waste management. Additionally, it is important to urge governent officials to support laws and policies that strengthen communities and help to prevent plastic littering.

- Learn to make briquettes from waste in order to repurpose waste and use it productively.
- Advocate for local markets to switch from plastic bags to reusable bags
- Spend a day picking up waste in your community then use that waste to create art and make statement about wastemanagement

# **Biodiversity and Eco-conservation**



# Name: Jean-betrand Mhandu Location: Zimbabwe Age: 26

### THE ISSUE:

There are many major issues that impact biodiversity. Some of these include wetlands degradation, deforestation, mining activities causing land degradation, inversive alien species (e.g water hyacinth, lantana ) over fishing (netting), pollution (plastics, bottles, cans, paper and food waste etc). All of these have their own adverse affects on biodiversity.

### **BEST PRACTICES/ SOLUTIONS**

Jean conducts clean-up campaigns, and awareness raising through education and capacity building of communities. He also engages his community in ongoing challenges and activities such as the Chivero Challenge to set up a litter transfer center. Additionally, Jean plants trees to assist with afforestation. Finally, the adoption of wetlands e.g. lake Chivero for conservation projects and protection of the lake is another solution Jean has been involved in.

- Set up a fundraiser to raise awareness on biodiversity issues and to help fund a clean-up campaign or a a litter transfer center.
- Partner with local biodiversity experts and local authorities to come up with a plan to conserve local wetlands.

# **Climate and Environmental Literacy**



Liberia has been a signatory to the Paris Climate Agreement since 2015. We have tried to implement our targets but have not done enough. Our lagging is based on the lack of both formal and informal climate and environmental literacy. This has led to citizens ignorantly destroying the environment and poorly participating in decision making processes. Youths have not fully taken in the climate change as a crisis because they have not understood the urgency of the issue. Therefore, informally and formally educating citizens about the science, solutions, and how citizens can participate is key to achieving the Paris Climate Agreement.

### **BEST PRACTICES/ SOLUTIONS**

Some solutions to the issue low climate literacy are to spread awareness on climate issues in communities and schools. Additionally it can be helpful to raise awareness about climate issues on social media. Another important solution is to advocate for Climate and Environmental Education to be taught in both primary and secondary schools respectively. Additionally, the Creation of educational toolkit is a way to spread climate literacy and awareness.

- Host workshops for communities and schools.
- Read stories on climate change to primary schools in order to spread climate literacy.
- Advocate and lobby with your government to make climate education mandatory in your country.

# **Civic Action**







Name: Folashade Molade Location: Nigeria Age: 29

# THE ISSUE:

Its rather sad to see that the youths in Nigeria have no regards for their immediate environment as they do not see the need for the urgent restoration of the Environment. Actions such as waste littering, deforestation, bush burning for sports have become regular practices this days.

# **BEST PRACTICES/ SOLUTIONS**

I believe that the youths of Nigeria must be brought to the awareness of restoring our environment for a sustainable future and some of the ways that we can achieve this are: efficiently and effectively using the power of the media to spread awareness around environmental issues, advocating for government involvement, international linkages, to mention a few.

- Organizing Environmental sensitization day in respective communities through seminars
- Hosting rallies to demand environmental action and raise awareness.
- Hosting sit-outs and social media campaigns to get the public engaged.

# EARTHDAY.ORG Education Resources

Explore these resources created by EARTHDAY.ORG's education team for more information on topics that interest you!

 Use this year's <u>Climate Education</u> <u>Week Toolkit</u> to learn about topics like ecosystem services and food sustainability.





- Our extensive <u>teach-in</u> resources are a great place to go for more information on environmental topics and to learn how to advocate for change!
- <u>Advocacy packets</u> focused on youth action in schools and the community are a great resource if you are looking to take action on what you've learned.





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