

Lesson Plan: Climate Change Impacts in Cameroon

As a **High School** or introductory **Undergraduate** teacher, you can use this lesson plan to **introduce climate change and its impacts in Cameroon**.

This lesson plan provides an introduction to climate change, causes and impacts of climate change globally, climate change risk profile for Cameroon that includes climate impacts on major sectors of the country such as agriculture, water resources, human health, ecosystems, urban areas and energy.

Thus, the use of this lesson plan allows you to teach Climate Science and Climate Change in your classrooms.

Use this Lesson Plan to help the students to understand and find answers to:

1. What is Climate Change? What are its causes?
2. What are the impacts of climate change on Cameroon?
3. What are the impacts of climate change on agriculture, water resources, human health, ecosystems, urban areas and the energy sector in Cameroon?
4. What mitigation practices can be adopted to control the impacts of climate change in Cameroon?

About the Lesson Plan

Grade Level	High School, Undergraduate
Climate Topic	Climate Change Impacts in Your Country
Location	Africa, Cameroon
Access	Online
Language(s)	English
Approximate Time Required	60 mins

Contents

1.	Reading (15 min) and Video (5-15 min)	<p>A reading from the NASA Global Climate Change website that includes information about what is the scientific evidence for climate change, causes, and impacts of climate change. This can be accessed here.</p> <p>Optional: A set of 7 short video micro-lectures (2-5 minutes in length) on climate change and global warming developed by the National Research Council, The National Academies of Sciences, Engineering, and Medicine. This can be accessed here</p>
2.	Reading 1 (World Bank)	<p>A reading by Climate Change Knowledge Portal of the World Bank that explains climate change and impacts in Cameroon.</p> <p>This can be accessed here.</p>
3	Reading 2 (USAID)	<p>This reading is the Climate Change Risk Profile fact sheet for West Africa by Climatelinks: A Global Knowledge Portal for Climate and Development Practitioners USAID.</p> <p>This can be accessed here.</p>
4	Classroom/Laboratory Activity (15 min)	<p>A classroom/laboratory activity based on a reading and video on Cameroon. This reading and video explains the causes and impacts of Cameroon on Cameroon and also states the possible solutions to counter the crisis.</p> <p>The reading can be accessed here. The video can be accessed here.</p>

Step-by-step User Guide

(Here is a step-by-step guide to using this lesson plan in the classroom/laboratory. We have suggested these steps as a possible plan of action. You may customize the lesson plan according to your preferences and requirements.)

1	Introduce Climate Change through the readings and videos	<p>This reading titled, “The Causes of Climate Change” from the NASA Global Climate Change website, provides introductory information on climate change and global warming. It contains information on the scientific evidence of climate change, its causes and impacts.</p> <p>This can be accessed here.</p> <p>Optional: This set of 7 short video micro-lectures (2-5 minutes in length) have been developed by the National Research Council, The National Academies of Sciences, Engineering, and Medicine. This can be used to provide additional information on climate change.</p> <p>They include:</p> <ol style="list-style-type: none"> 1. What is Climate? Climate Change, Lines of Evidence Chapter 1 2. Is Earth Warming? Climate Change, Lines of Evidence Chapter 2 3. Greenhouse Gasses. Climate Change, Lines of Evidence Chapter 3 4. Increased Emissions. Climate Change, Lines of Evidence Chapter 4 5. How Much Warming? Climate Change, Lines of Evidence Chapter 5 6. Solar Influence. Climate Change, Lines of Evidence Chapter 6 7. Natural Cycles. Climate Change, Lines of Evidence Chapter 7 <p>This video playlist can be accessed here.</p>
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2	Discuss causes and impacts of Climate Change in Cameroon	<p>Use this interactive website by the Climate Change Knowledge Portal of the World Bank to have your students understand the impacts of Climate Change in Cameroon. This resource includes the following:</p> <ol style="list-style-type: none"> I. Climate Change Overview of Cameroon II. Country Summary III. Current Climatology: Climate Trends and Variability in Temperatures and Precipitation IV. Climate Projections V. Vulnerability of Cameroon to Climate Change <p>Each section contains relevant climate change information including data, projections, and visualizations. The data is visualized through interactive graphs and users can select different indices, model projections, timescales, and sectors to better understand the impacts of climate change in Cameroon.</p> <p>This can be accessed here.</p>
3	Further understanding on impacts of Climate Change on key sectors in Cameroon	<p>You may wish to have your students explore climate change and its risks in West Africa in more detail through a resource from climatelinks: A Global Knowledge Portal for Climate and Development Practitioners of the USAID.</p> <p>This factsheet on climate risks in West Africa includes information on:</p> <ol style="list-style-type: none"> I. Current and future climate impacts and vulnerabilities in West Africa. II. Climate impacts on key sectors of: <ol style="list-style-type: none"> 1) Agriculture 2) Water Resources 3) Human Health 4) Ecosystems 5) Urban Areas 6) Energy <p>This can be accessed here.</p>
4	OPTIONAL Classroom/Laboratory Activity on the 'Lake Chad Crisis'	<p>Use this reading titled "The tale of a disappearing lake" by UN environment programme and video titled "Lake chad - How Africa plans to save the shrinking mega lake chad from climate change" by The New Africa Channel on Youtube to introduce the students to the 'Lake Chad Crisis', its causes, impacts and possible solutions.</p> <p>The reading can be accessed here. The video can be accessed here.</p> <p>After introducing the students to the topic, conduct the following activity:</p> <ol style="list-style-type: none"> 1. Divide the classroom into four teams. These teams will represent the following organizations: <ol style="list-style-type: none"> a. Government b. Environmentalists c. Farmers

d. Herders

2. Each team will then be given 5-10 minutes to discuss how the 'Lake Chad Crisis' impacts the organization they represent. Use the following questions to direct the flow of discussion within each team:
 - a. What is the importance of Lake Chad in the region? What other countries does it impact?
 - b. What is the impact of climate change on Lake Chad?
 - c. How do these impacts affect the team's livelihood?
 - d. Which of these impacts are causing disputes between the organizations and why?
 - e. Select a few of the most pressing issues to present to the other organizations.

(Note: The intention of this activity is to help students empathize and understand the problems faced by each of the organizations. This should enable them to think of possible solutions for the 'Lake Chad Crisis')

3. Then ask each team to select a representative that will state their concerns to the other organizations. (Note: It is advised to start with the representative of 'Farmer', followed by a representative of 'Herder', then a representative of 'Environmentalism' and end with a representative of 'Government')
4. After each team has laid out their concerns a discussion of possible solutions can ensue, where each group tries to solve the problem of the other groups through the resources available to them. Use the following questions to aid the discussion:
 - a. What are the short term and long term solutions to solve the crisis?
 - b. What can each organization do to help mitigate the crisis?
 - c. What are the most feasible and effective ways to recharge Lake Chad with water from neighbouring rivers and tributaries?

(Example: The 'Farmer' may raise the issue of inadequate resources for agriculture and the 'Herders' can raise the issue of inadequate pasture and water. The 'Farmers' and 'Herders' are in a dispute due to shortage of the same resource essential for both farming and herding. Then the 'Environmentalists' can analyze the situation and act as a middle ground between the 'Farmers & Herders' and 'Government'. The 'Government' can then suggest mitigation policies with the data from 'Environmentalists' and cooperation from the other two.)

5. Once the students have reached an agreement regarding some solutions to the crisis, the activity can be concluded with them sharing their experience and reflecting on the issue as a whole.

Learning Outcomes:

The tools in this lesson plan will enable students to:

- learn about climate change and global warming
- understand the impacts of climate change in Cameroon
- discuss how changing weather patterns due to climate change could affect future of Cameroon
- describe the current and future health risks and economic impacts on Cameroon due to climate change

Additional Resources

1	Reading	West Africa Greenhouse Gas Emissions Fact Sheet : This fact sheet by Climatelinks: A Global Knowledge Portal for Climate and Development Practitioners of the USAID, gives information about change in GHG Emissions in West Africa (1990-2014), GHG Emissions Relative to GDP and Mitigation Targets.
4	Reading	Intended Nationally Determined Contribution, Cameroon : This report provided by UNFCCC is a submission of commitment towards mitigating Climate Change by Cameroon.

Credits / Copyrights:

1	Reading “The Causes of Climate Change”	by the NASA Global Climate Change website
2	A set of videos; “Climate Change: Lines of Evidence”	Presented by National Research Council, The National Academies of Sciences, Engineering, and Medicine
3	Reading “Climate Change Risk Profile for Cameroon”	By Climate Change Knowledge Portal of the World Bank
4	Reading “Climate Change Risk Profile for Cameroon”	By Climatelinks : A Global Knowledge Portal for Climate and Development Practitioners, USAID
5	Reading “The tale of a disappearing lake”	By United Nations Environment Programme
6	Video “Lake chad - How Africa plans to save the shrinking mega lake chad from climate change”	By The New Africa Channel (Youtube)
	Additional Resources	West Africa Greenhouse Gas Emissions Fact Sheet Intended Nationally Determined Contribution, Cameroon