

The Human Impact of Climate Change

Teachers Notes

The pupil learning in these resources

Through these resources pupils should be able to identify some of the main ways in which climate change is impacting on people's lives either directly, for example through prohibiting the ability of people to sustain their livelihoods (e.g. crop failures through drought), or indirectly, through increasing the vulnerability of people to other risks, such as deforestation or HIV.

Also, pupils should be identifying other factors, alongside the change to the climate, which conspire together to impact on people's lives. Such ideas feed into the 'climate change and development' resources.

The Approach

There are two basic ways these resources may be used:

Linear approach - The idea of these resources is that pupils work through either individually or in pairs, summarising the impacts using the summary table as they read. The resources may be printed out or accessed directly on the computer. The summaries may be drawn together through a class discussion.

After completing the impacts, pupils may move onto exploring the adaptations of communities to the threats to their livelihoods.

Cross-group approach - Alternatively, you may split the class into two, and ask one half to use the resources on the impact, and the other half to use the resources on the adaptations, and then get groups who looked at impacts to summarise them to groups who looked at adaptations, and vice versa.

Ability level of pupils

Depending on the ability level of your pupils, you may ask them to access the report directly, rather than use the summary sheets presented here. The summary table or notes template may be given to assist pupils in directing their note taking.

The report may be accessed at:

http://www.oxfam.org.uk/resources/policy/climate_change/poverty-environment-malawi.html

The Human Impact of Climate Change in Malawi



Task: Summarise the impacts

After reading the summary, you will have the chance to look in more detail at some of the main ways climate change is impacting on people's lives in Malawi.

Before you begin, you can open and use the **summary sheet** to make notes on what you are reading about. Try and underline as you read the important things to include.

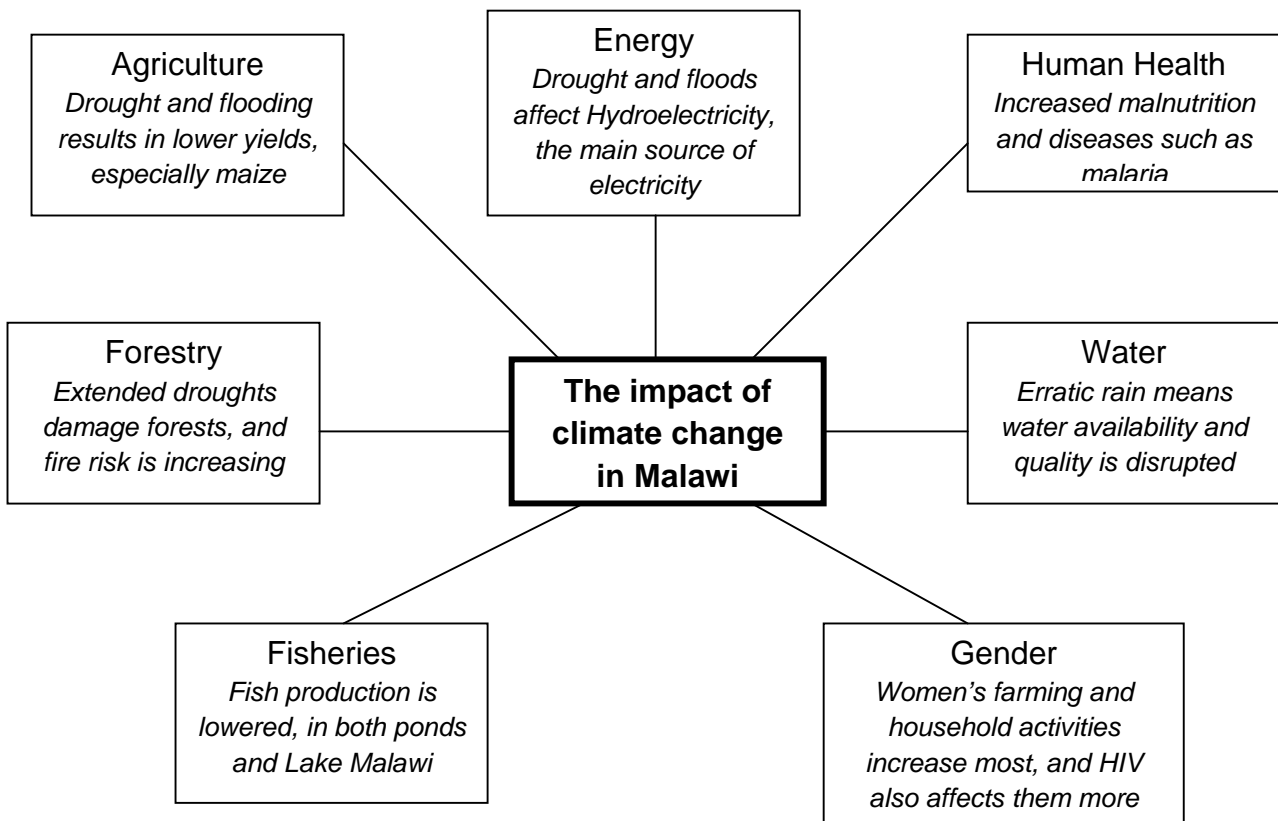
Extension activity

Alternatively, you can access the “Winds of Change” report directly, and then use the **make your own notes template sheet** to go through each area of impact and make your **own notes** on what the impacts are using this.

Pages 16 to 30 should help you.

Impact Summary

We can summarise the **impacts** of climate change on the **people in Malawi** as follows:



Now read more detail about the impact in certain areas.

The Impact on Agriculture



Mary Sande on a small plot of land she has started to prepare. She lives in Chikwawa, in the Lower Shire area of Southern Malawi, which is an area at risk from food insecurity.

Scientists who have looked at the impact of climatic trends on maize have found evidence that in Malawi dry spell lengths are increasing. Previously rainfall patterns were predictable, and 4 rainfall events could be used to *sequence* (a set of steps) activities. Now, as Esther Chanache, 69, from Tsite says: “Now, if you miss the first rains it means you are not going to get anything.”

Maize requires at least 3 months to mature, and farmers rely on rain at the right time. Small changes can make the difference between a good maize harvest and a poor one – and sometimes no harvest at all. This has meant that many farmers are only harvesting enough food to feed their families for 3 or 4 months.

Other factors make farmers more *vulnerable* (at risk) to poor rains, including poverty, not enough land, not enough money for seeds, fertiliser or labour, and the impact of HIV and AIDS on local communities.

The Impact on Fisheries



Martin Chiumia, from Msaka, stands next to racks of usipa laid out to dry. He fishes in Lake Malawi, which is so large it is almost an inland sea. Fish from the lake provide an important source of protein for people's diets, and vital income for the many fishermen who use traditional methods to catch fish on the lake.

The catch of fish from Lake Malawi has dropped by 20,000 tonnes annually since the 1990s. Fishermen say the winds, which are so important for their ability to catch the shoals of fish, are changing. Rainfall has also dropped, by perhaps 10-15% over the last decade.

Martin Chiumia says: "Previously the winds were predictable, we would know them. But these years, they are unpredictable... We catch much less fish now. We used to catch them close to the shore, now we have to go into deeper water and use a lot of fuel and what we get doesn't always pay for the cost"

According to Lincoln Singi, General Manager of Maldeco Fisheries, rise in temperature, deforestation, the destruction of reed beds for tourist lodges and the impact of over-fishing have also contributed to the decline in catches.

The Impact of Drought - Deforestation



Piles of 'sticks' of cotton that cannot be harvested in Chikwawa, Southern Malawi. Drought meant cotton, normally a reliable cash crop, failed to grow this year. Hasten Mbuzi explains:

“In other years we've had a reliable cash crop - cotton - in this area. But this year we didn't harvest it because of the lack of rain, so we have no cash to buy food. What we are doing now is cutting trees and selling wood, cutting grasses and selling to people who have money.”

The erratic rains and later rainy seasons caused by climate change have increased the risk of drought. During drought periods, a lack of crops and therefore income can cause people to turn to *deforestation* (cutting down trees), and without tree roots the soil *erodes* (breaks off) more quickly. This means the soil cannot hold water as well, which then causes greater drought problems, as when it does rain water is lost quickly and is not stored in the ground. Malawi now has a deforestation rate of 2.8% per year, one of the highest in Southern Africa.

Greater population pressure also means that traditional methods of coping with drought, such as finding berries and fruit in the forest, are made more difficult. The table shows how the *strategies* (planned actions) of the population of Kaliyati village have changed over the last few generations in response to drought.

Drought in Kaliyati village	Walking distance to Forest	Coping Strategy
c.1900	Few minutes	Wild fruit and berries
1922	Few minutes	Wild fruit and berries
1949	Few minutes	Wild fruit and berries
1981	Five to ten minutes	Wild fruit and berries
1992	One hour	Aloe Flowers
2002	Two Hours	Selling Charcoal
2006	Four Hours	Selling Charcoal
2008	Seven Hours	Selling Charcoal

The forest is further away as it has been cut for firewood and for people’s houses. Alice Kamowa explains:

“I cannot get wild fruits anymore because there are no trees so now I must wait for my children to give me food. Even the grass we could once eat in an emergency does not grow here anymore because there is not enough rain”

People resort to selling charcoal, as the only way of getting an income when crops fail. This deforestation is illegal, and makes the drought worse. However as charcoal sellers Manuel Grant and Joseph Kaufa (below) explain, “Its hard work, but there’s no other jobs. And I have a family to feed in Blantyre”. They walked 60km to buy the charcoal to sell at the market in Blantyre, in order to make a profit. There is so much deforestation in the area that traders are having to travel further to find wood



The Impact on the Livelihoods of Women



Droughts and floods worsened by climate change put more stress on families, and lowers their ability to *maintain* (keep) their livelihoods. Because women are traditionally responsible for both looking after the family, and a variety of tasks required for subsistence agriculture (such as collecting water or firewood), this additional stress affects them particularly.

For example collecting water is essential for the family. During droughts water is limited, which may affect women more. As Esther Chanache from Titse village says: “We women have largely been affected in terms of fetching water. Previously the rivers would run all year round but now when the rains stop the rivers dry up. We have to walk long distances”

This stress also increases the potential for women to take risks to secure the livelihood of their family. For example HIV and AIDS is a particular problem in Malawi, affecting nearly 1 million people. Smaller yields from erratic rainfall are limiting the income of many families, and may cause men to leave the house to look for work. This has caused some women to turn to prostitution to get income to feed their children, potentially exposing them to the risk of HIV. In some areas this is contributing to the spread of HIV, and further problems may result for women and their communities in coping with orphans and a reduced ability to farm.

The Impact of Floods



As well as drought, climate change is leading to increased flooding. Ebbie Mwakasungula, Village Headman in Karonga, discusses the problem:

“Previously water would flood mainly at the peak of the rainfall season from February onwards, and mainly along the river banks. These days floods affect even villages and occur anytime during the rainy season. Previously people would relocate to higher grounds during the rainy season to avoid floods but these days even people settled in areas considered higher ground are also affected by floods.”

Flooding destroys crops, and can ruin farmer’s livelihoods, as well as risking the lives of villagers and increasing water borne diseases, such as malaria and cholera. Between 2001 and 2003 the number of districts affected more than doubled. More erratic rainfall, which means rainfall becomes more intense, is one large part of the problem. Other factors include increased deforestation, allowing higher water *runoff* (water running straight over the soil), and removal of reed beds, so rivers fill more quickly with nothing slowing it down. Poverty caused by flooding leads to further increases in deforestation, worsening the problem.

Winds of Change in Malawi: Summarise the Impact (student sheet)

Area	How climate change is affecting this	Direct impact on peoples lives	Indirect impact on peoples lives	Other factors to consider
Agriculture				
Fisheries				
Drought and deforestation				

Winds of Change in Malawi: Summarise the Impact (student sheet)

Area	How climate change is affecting this	Direct impact on peoples lives	Indirect impact on peoples lives	Other factors to consider
Women				
Floods				

The Impact: Make your own notes

http://www.oxfam.org.uk/resources/policy/climate_change/poverty-environment-malawi.html

Use the link above to the report, then use pages 16 to 28 to make your **own** notes on each area of impact, with the following template:

What is the **area** of impact?

How is climate change **affecting** this area?

What **direct** effect is this having on people's lives? Why?

What **in-direct** effect is this having on people's lives? Why?

What **other factors** should be considered...?