

The impacts of global warming - Africa

There are two problems:

- As rainfall becomes more variable, competition for water is likely to arise between countries, particularly when Africa's largest rivers, such as the Nile, cross national borders.
- As scarcity increases, so does dependence on poor-quality sources. This leads to increased water-borne diseases, such as cholera, which puts pressure on health care systems, and therefore on government budgets.

Physical and human impacts

Many of the impacts on Africa are physical. Africa contains about 20% of all known species of plants, mammals, and birds, as well as 17% of amphibians and reptiles. As global warming increases, fragile habitats may not survive and between 20-50% of species in Africa could face extinction.

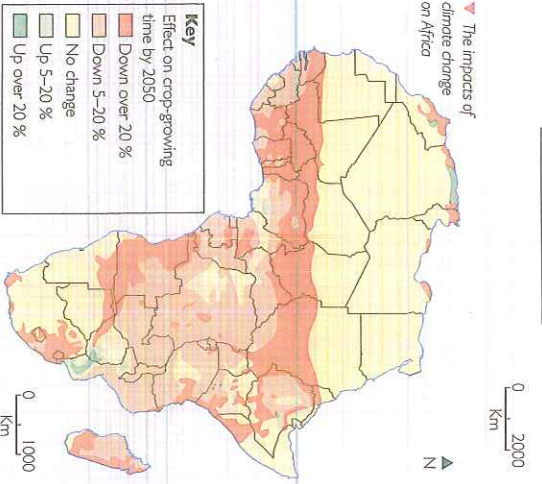
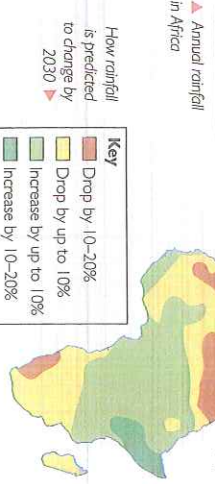
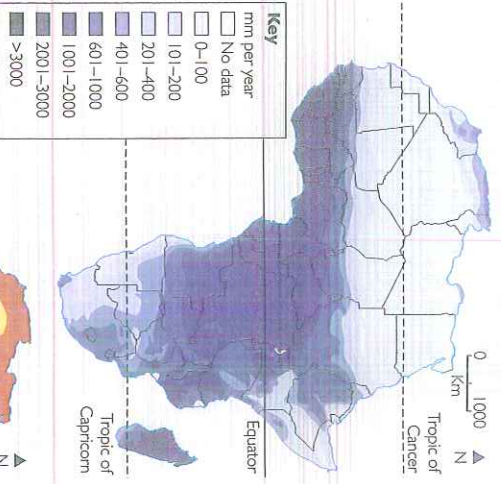
Many low-lying coastal countries in Africa are vulnerable to sea level rise - with cities, roads and infrastructure at risk from flooding and increased erosion. Already, the low-lying sandy coastlines of Ghana, Togo and Benin are suffering greater erosion from increased storminess and human interference, such as port development and coastal defences. Other parts of Africa are also affected.

However, the main impacts are human.

- The bottom map on the right shows that changes to rainfall - even increases - can reduce the period in which crops grow. In some parts of Africa, global warming may make rainfall more seasonal, with a dry season that is just as dry as now, but a wet season where rain may fall in heavier bursts. Only small areas show an increase in crops - the rest of Africa suffers a reduction in food supply.
- Malaria is also on the increase, as increased humidity and rainfall causes the mosquito (the cause of the disease) to spread over wider areas. In South Africa, it is estimated that the area affected by malaria will double, and that 7.2 million people will be at risk - an increase of 5.2 million. The health system will have to deal with many new cases every year. As the infection increases, so does the number of people unable to work.

What do you think?

Should the countries which cause the most global warming pay to reduce its impacts on Africa



Global warming and debt

One of the main reasons why Africa is vulnerable to global warming is because of its **debt crisis**. For many decades, the debt burden faced by African countries has been severe. Many countries have now had these debts written off - because the world's richest countries (the G8) decided to cancel them in 2005 (by mid-2007, 18 countries had had their debts written off). However, the burden of debt still affects the majority of African countries.

One of the few ways in which African countries can reduce their debt is to increase overseas trade, mainly through the production of **cash crops**. This has led to forest clearance for commercial farming.

Oxfam believes that global warming is likely to result in even greater forest clearance. They argue that harsher weather conditions, such as drought, will expose soils to erosion by wind. This will place more pressure on existing land to grow food. Such pressure (e.g. over-grazing) often leads to an increase in **desertification**. Famine and malnutrition will increase, placing Africa's **food security** under threat.

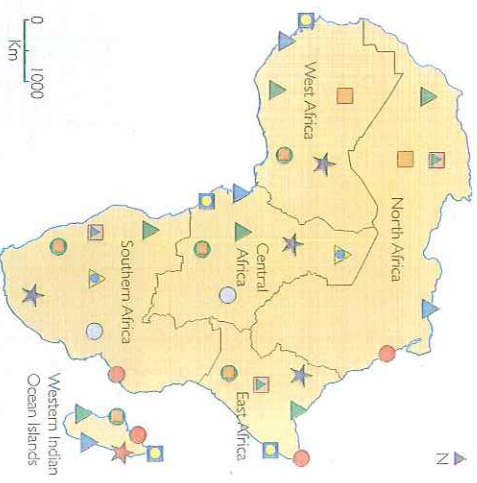


Over to you

- In pairs, draw a spider diagram to show the links between global warming, changing rainfall and impacts on the food supply.
 - Add to this diagram the influence that debt can have.
 - In what ways are African farmers trapped into poverty? b does global warming make this poverty trap worse?
 - How might the increased likelihood of malaria impact on this poverty trap, and why?
- On your own**
- Define the terms from the text: desertification, food security, debt crisis, cash crops.
 - Are the consequences of global warming worse for Africa than for the Arctic? Discuss this in 600 words.
- Exam question:** Why does climate change present potential problems for the African continent? (10 marks)

1.10: The impacts of global warming

- The **debt crisis** is where many African countries have become so heavily indebted that repayments sometimes exceed their entire GNP.
- Cash crops** are those crops sold for income, rather than one's own food supply.
- Desertification** is the way in which climate change and over-grazing turn previously fertile land into desert.
- Food security** is the extent to which a country can rely upon food supplies, e.g. upon the weather, or, if unable to grow all its food, the extent to which it can pay for imports to feed itself.



▼ Desertification in the Sahel, on the margins of the Sahara



The impacts of global warming - Africa

There are 55 countries in Africa. In 2007, two-thirds of them were among the world's fifty poorest countries. Their average per capita income was US\$0.72 a day. 34% of the population aged 15-24 was illiterate. Many African economies are on the edge of collapse through international debt. Now, on top of everything else, they face the impacts of global warming.

The evidence for global warming

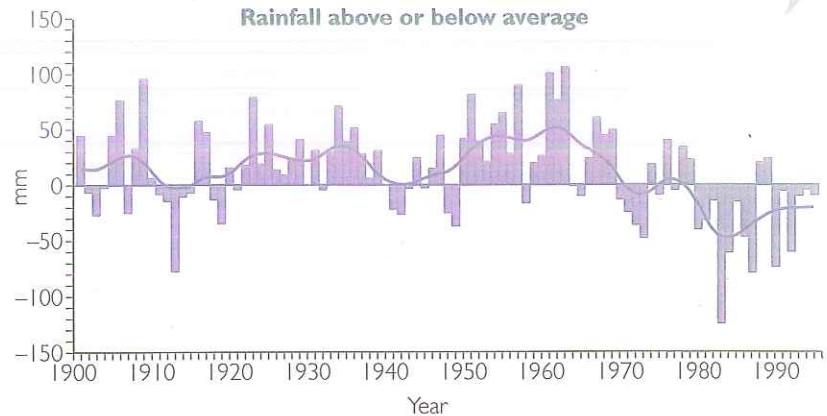
Africa is steadily warming. The continent as a whole is 0.5 °C warmer than it was in 1900. However, temperatures have increased more in the interior – some inland areas of Africa have experienced double the global increase. In Kericho, Kenya, maximum temperatures have increased by 3.5 °C since 1985. This has caused difficult conditions across Africa:

- Droughts have become more common, as areas which are already arid or semi-arid become even drier.
- Rainy seasons are now more unreliable, and overall rainfall is decreasing.
- Rains are more localised. The rains that ended East Africa's drought in 2005-6 were not widespread, and many areas had very little rainfall.

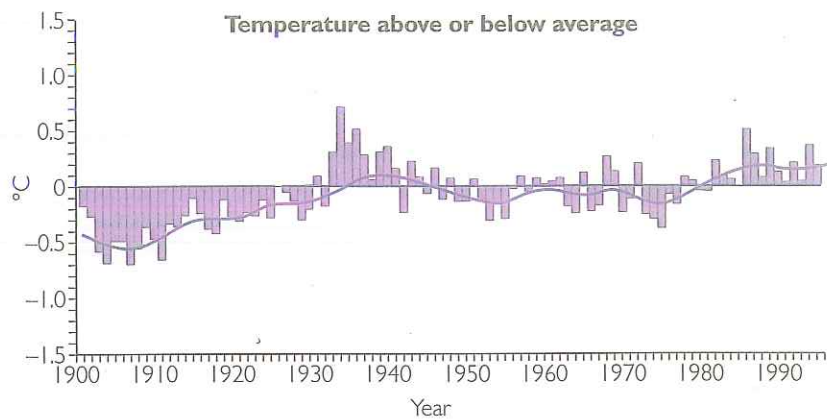
Why is Africa vulnerable?

The clue to Africa's vulnerability to global warming is its economy. Most African economies are heavily dependent on agriculture. Farming is rain-fed and vulnerable to rainfall shortages. Water is already scarce. The United Nations Environment Programme (UNEP) reported in 2007 that 14 countries in Africa were suffering from water scarcity, and that 11 more will join them by 2032. Rainfall is declining in the areas that need it most – areas with high annual totals are likely to maintain or increase them, but the edge of the Sahara (the Sahel region) is likely to see reductions.

▼ Trends in the African climate during the twentieth century



Too much or too little rain can be a matter of life or death in Africa.
Oxfam, 2006



▼ The northern Kenya drought of 2005-6: walking through a field of dead animals – the image of the future?

