6: Achieving sustainability

Video summary	Before watching	While watching
Chioma is in Cape Town, South Africa. This video explores strategies and solutions to issues associated with climate change such as the use of renewable energy sources and planting drought resistant crops. Chioma also explores how interactions between wildlife and humans can often pose a challenge. She describes two examples: 1) In Botswana and Zimbabwe the population of African elephants has grown because the species is protected; but local farmers now face the danger posed by the growing herds. 2) In Cape Town the baboon troops have also caused issues for local people, which need to be balanced with the needs of the wildlife. The solutions to this demonstrate how sustainability projects must meet social, economic and environmental needs. Finally, Chioma explores how non-native plants can cause environmental issues and that the removal of them is better for the environment in a variety of ways.	Discuss with students what the word sustainability means. Can they give examples of what it means to 'be sustainable'? Can students give examples of how they try to be more sustainable in their everyday life or how their school has taken action to be more sustainable? Discuss why we need to become more sustainable in order to protect our environment. Ask students to record their suggestions and to add to these as they watch the film. **Introduce key terms such as:** **Climate change**: the long-term shift in temperature and weather patterns. **Carbon emissions**: the release of carbon compounds such as Carbon Dioxide and Methane into the atmosphere. **Indigenous**: people, plants or animals native to a certain region or environment. **Endangered**: when the population of a species has declined by at least 70%. **Sustainable**: the practice of using natural resources responsibly so they can support the population of today and future generations.	You may wish to stop at relevant points during this short film to pose questions and check understanding, or wait until the end. Useful questions might include: • Which primary industry does 50% of the people living in Africa rely on? • Give examples of renewable energy sources. • How are farmers ensuring that their harvests will survive? • Why is managing elephant populations a challenge? • Why is managing the baboon troops a challenge? • How easy is it to manage the needs of the environment with the needs of people? • Why do the non-native trees need removing? • Why are the trees a problem for water security?

After watching

Introduce the concept of the three-legged sustainability stool. Each leg of the stool represents a 'leg' of sustainability: social, economic and environmental. What types of sustainability did the students see in the film. Discuss how challenging it is to balance the sustainability stool.

After watching (continued)

Split the class into groups to research a range of sustainable options - such as wind farms, the use of solar panels and animal conservation areas. What are the advantages and disadvantages of each of these methods? For example, many people are against wind farms due to the impact that they have on wildlife - especially birds. Examples of wind farms in South Africa include Cookhouse Wind Farm and Dorper Wind Farm. This could also lead to an exploration of the story of William Kamkwamba, a Malawian inventor and engineer who built a wind turbine in 2011 to power multiple electrical appliances in his family's house using scavenged parts. He then went on to build a solar powered water pump and multiple other wind turbines, including one in Lilongwe, the capital of Malawi.

Discuss how we can balance the needs of humans and animals. Is it possible to balance the needs of both? This could be turned into a debate between groups of students in the class.

Curriculum notes

This clip will be relevant for teaching Geography at KS3 in England and Northern Ireland, 3rd/4th Level in Scotland and Progression Step 4 in Wales.

In the English National Curriculum this video can be used to help teach the following:

- *Using maps of the world to focus on Africa, focusing on the environmental regions, hot deserts, key physical features, countries and major cities.*
- *Understand geographical similarities, differences and links between places through the study of human and physical geography of a region within Africa.*
- *Human geography related to population and urbanisation.*
- *Human geography related to economic activity and the use of natural resources.*
- *Understanding how human and physical processes interact to influence and change landscapes, environments and the climate, and how human activity relies on effective functioning of natural systems.*

Where next?

Research further the baboon troops in Cape Town. Why are they attempting to live in the more urbanised areas of the city?

Around the world, many animal species are leaving the wilderness and are making their way into areas of human habitation - for example, polar bears in Svalbard and Canada. Can students make the link between climate change and the movement of animals, but also how tourism may cause an issue for animal species?

Research the native and non-native species of plants in Cape Town. Why are the non-native species there? What impact are they having? Why might some people be against the removal of non-native species?

Links

The land as a resource:
https://www.bbc.co.uk/bitesize/topics/zjsc87h/articles/zq7jqfr

Food resources:
https://www.bbc.co.uk/bitesize/topics/zjsc87h/articles/zrrx2v4

Sustainable food resources:
https://www.bbc.co.uk/bitesize/topics/zjsc87h/articles/z88nhcw

Energy resources:
https://www.bbc.co.uk/bitesize/topics/zjsc87h/articles/z3bgvwx

Increasing energy resources:
https://www.bbc.co.uk/bitesize/topics/zjsc87h/articles/zjp3vwx