

Importing water, exporting drought?

Fact Sheet & Teacher's Notes

Lesson 2: Water futures - what can be done?

Starter

What is meant by water stewardship?

Specification advice

Students of all A-level boards ought to be familiar with the concept of stewardship. This applies especially to **WJEC candidates** – who have an entire paper at A2 level devoted to **sustainability** and the **management of natural environments**. It is a key concept for those **Edexcel candidates sitting the option 'consuming rural landscapes'** option

World Wildlife Fund strongly advocates a new **environmental stewardship** ethic be adopted at the heart of our global community's approach to water management. Environmental stewardship is a worldview wherein humans become 'caretakers' of rural landscapes. This idea is linked with the concept of **sustainable development** because both suggest that the natural world is only temporarily entrusted to our current care - before being passed onto successive generations, thereby delivering 'inter-generational equity'.

In order to provide lasting stewardship of water resources, societies urgently need to:

- Protect the way rivers function, safeguarding biodiversity
- Limit agricultural abstraction and overuse of blue water supplies
- Encourage corporate stewardship (especially for powerful TNCs)
- Work towards making more equitable transboundary agreements
- Establish better standards for where dams are sited in the future
- Put in place governance structures to oversee all of the above

Main activity

The PowerPoint Presentation: 'Managing Water Sustainably' is to be used here.

(1) Managing water supplies – the key players

Our understanding of what makes good water management is improving all the time. However, threats to water supplies are growing even faster: the United Nations Educational Scientific and Cultural Organization (UNESCO) note that for the last century water use has been growing at more than twice the rate of population increases. Irrigation of agriculture continues to be the largest user of water, making up 80% of water use in developing countries.

The role of government

It has long been recognised that different land and water user groups (such as farmers, house-builders and industrialists, amongst others) modify water flows in ways that can sometimes adversely impact upon other users in a basin. Any single action by one user group is likely to have consequences both up and downstream and on other functional uses. It is the widespread lack of 'joined-up thinking' by land and water users along European rivers, including Britain, which has given rise to the call for integrated water resource management (IWRM).

In Europe now, key players must work together to carefully manage water supplies under law. The European Water Framework Directive (WFD) makes it a requirement for drainage basins in the UK and elsewhere to be managed in a unified and coherent way. As part of this process, a total of 11 river basin districts have been designated as covering England and Wales (a 'district' may include more than one actual catchment area: for instance, the Mersey basin and River Lee basins comprise a single district). The Directive requires that all districts establish prepare river basin plans with the aim of achieving good ecological quality of waters.

The role of business

There are often economic incentives for firms to do more about the environment that the business community is waking up to (irrespective of any political pressures). For instance, in Bogota the brewer SAB Miller has funded a reforestation project in the upper catchment of a river valley where they are downstream users. The reason? This reduces their own costs in having to filter river water to remove sediments produced by soil erosion on deforested slopes. Management of river processes is an important part of the overall water usage equation.

Teaching tip

Find out more about the WFD – perhaps the most significant water management strategy to date for the UK and EU – at: http://ec.europa.eu/environment/water/water-framework/index_en.html

Main activity

(2) The wider sustainability challenge

Many people believe market solutions can be found for many of the world's most pressing problems – thus allowing economic development and growth to continue largely unhindered, but in ways that begin to reward good environmental governance. Thus **carbon pricing** schemes are viewed by many politicians as a key climate change mitigation measure because they may financially encourage low carbon-emitting economic activities.

Specification advice

Many of the issues outlined in this section can be linked to the **'impacts of globalisation'** for most AS/A2 courses. All of the concerns outlined – from carbon emissions to animal welfare – are amplified by global trade patterns and increasing levels of global consumption of foods, goods and services in an interconnected world.

Another way to achieve positive environmental change is through consumer pressure on the corporate decision-making behaviour of supermarkets and the TNCs that supply them. For instance, many people buy **organic** products, believing the lack of chemicals used in their production to be especially 'environmentally-friendly'. But if in the future organic accreditation were to be removed from highly water-intensive organic products (such as wine and coffee), then perhaps consumption would fall – which would doubtless lead to more organic producers taking action to reduce their own water footprint.

Yet the adoption of certain types of ethical consumer strategy creates other moral dilemmas for consumers.

For instance, many people currently living in rural poverty are highly dependent on agricultural work in water-hungry industries, such as the flower growers around Kenya's Lake Naivasha. Consumer boycotting of these flowers might help conserve lake water, but if workers lose their jobs through falling demand for flowers, then some Kenyans could fall back into absolute poverty.

Many different environmental, ethical and moral issues tie in to the world economy and consumer lifestyles today. It is sometimes difficult to work out which issues should be highlighted as being *truly fundamental to the quest for sustainable development*. For instance, choose from:

- **Carbon concerns** (do the products we buy come from far-away places with excessive 'food miles' attached to them, contributing to global warming and climate change?)
- **Organic farming** (do the non-organic products we buy contribute to losses in biodiversity, threatening ecosystems?)
- **GM (genetically modified) food** (is this a way of solving the planet-wide food crisis that has recently seen the numbers of hungry people rise for the first time in many years?)
- **Treatment of workers** (should we avoid goods made in 'sweat shops' or would it harm exploited workers even more if they lost their jobs due to falling demand for the products they make?)
- **Treatment of animals** (should we avoid meat products from animals reared under inhumane 'battery farm conditions?')
- **Virtual water** (should we try and avoid food and goods with an excessive 'water footprint' for fear that we may be contributing to overseas water shortages?)

The big 21st Century Challenges are so numerous and varied that it is increasingly hard for consumers who care about people and the environment to try and address all of them. But it is certainly increasingly clear that responsible and equitable water use (and ownership) is a vital ingredient for sustainable development.

Key terms

Sustainable development

The Brundtland Commission describes SD as 'Development which fulfils the needs of the present generation without jeopardising the possibilities of future generations to fulfil their needs.' The Countryside Commission (UK) has four SD objectives. These are:

- social progress which recognises the needs of everyone
- effective protection of the environment
- prudent use of natural resources
- maintenance of high and stable levels of economic growth and employment

Plenary

Which is the key challenge?

If we imagine that 21st Century Challenges like virtual water and carbon footprinting add 'ethical calories' to the goods we buy, then there is little left for sale in the world that truly appears to be fat-free.

Which is the *greatest* challenge facing humanity – and why? Ask students to vote for issues included in the following list.

- Climate change
- Food security
- Energy security
- Water security
- Biodiversity losses
- Poverty
- HIV infection
- Swine Flu

- Terrorism
 - Armed conflict
 - Unethical treatment of workers
 - Unethical treatment of animals
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