

the environment, society and the economy

5 Environmental conflicts and challenges



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Aim: To explore the nature of environmental conflicts and challenges at local, national and global levels.



SYLLABUS STATEMENT

Elective Unit 4.5 – Environmental Impact

Students should study:

- › conflicts that may develop between local and global economic interests and environmental interests
- › students should be familiar with the issues relating to at least two examples.

OUTCOMES

Having completed this unit students should be able to:

- › have a greater understanding of the nature of environmental conflict
- › identify the core issues in the three case studies: Sellafield nuclear reprocessing plant, genetically modified organisms and water pollution
- › evaluate these conflicts with reference to the concept of sustainable development.

the video clips

1 SELLAFIELD: THE BRITISH NUCLEAR INDUSTRY

From ECOEYE, series 2, programme 1

2 GENETICALLY MODIFIED ORGANISMS

From ECOEYE, series 2, programme 5

3 RURAL WASTEWATER

From ECOEYE, series 1, programme 3

4 EUTROPHICATION: LOUGH CONN, CO. MAYO

From ECOEYE, series 2, programme 4



Sellafield: the British nuclear industry

- 1 Irish anti-nuclear campaigners protested against a proposed nuclear plant in Ireland in the 1970s. Where was the proposed site of the plant?

- 2 John Bowler of An Taisce claims that the nuclear industry is in decline in Europe. What evidence does he give to support this view?

- 3 How many nuclear plants are there in Britain?

- 4 Why is the Sellafield plant seen as such a danger for Ireland?

- 5 How does low-grade waste from the Sellafield plant get into the Irish Sea?

- 6 How much plutonium is stored at the Sellafield plant?

- 7 According to Adi Roach of the Chernobyl Children's Trust, what kind of effects did the accident at Chernobyl in 1986 have on Belarus?

- 8 Why according to David Pollard of the Radiological Protection Institute of Ireland (RPII) is the institute 'particularly concerned about the Sellafield site'?

- 9 Why have British Nuclear Fuels Ltd's plans to extend the Sellafield site been postponed?

- 10 Who was the anti-nuclear campaigner delivering protest postcards to No. 10 Downing Street?



Rural wastewater

1 What is meant by rural sprawl?

2 According to the narrator, what percentage of new houses are detached rural dwellings ?

3 In 2000, 18,000 new houses were built in rural areas of Ireland. How many houses were built in the United Kingdom over the same period?

4 Name two environmental concerns about the increased numbers of new rural houses.

5 How many septic tanks are there in rural Ireland?

6 How do septic tanks work?

7 Name two problems that can occur with septic tanks.

(i)

(ii)

8 About 150,000 homes get water from group water schemes. How many of these schemes are contaminated?

9 What are 'constructed wetlands'?

10 What is the Department of the Environment doing about the problem of rural wastewater?



Eutrophication: Lough Conn, Co. Mayo

1 What species of fish can no longer be caught in Lough Conn, Co. Mayo?

2 What other changes did local people notice in Lough Conn?

3 What is meant by eutrophication?

4 How has the decline in water quality in Lough Conn affected tourism?

5 Who was involved in the Lough Conn Task Force?

6 Which pollution sources contributed to the greening of Lough Conn?

7 What was found to be the main cause of eutrophication in Lough Conn?

8 What do the initials REPS stand for?

9 How bad is the water quality situation in Lough Conn now?



THE NATURE OF ENVIRONMENTAL CONFLICTS

—
information and groupwork



BACKGROUND INFORMATION

In this unit the students have looked at video clips on three areas of environmental controversy:

- > the Sellafield reprocessing plant and the British nuclear industry
- > genetically modified organisms (GMOs)
- > pollution of Ireland's ground and surface waters.

A number of other environmental controversies are evident in the materials examined elsewhere in this pack: conflicts over the location of landfill sites, over incineration and over the burning of fossil fuels for energy production and transport.

The students' background information sheet offers some insights into the nature of environmental controversies that should be helpful in investigating the conflicts listed above.

A FRAMEWORK FOR THE STUDY OF ENVIRONMENTAL CONFLICTS

Explain to students that the study of environmental conflicts should include the following:

- 1 research into all alternative viewpoints and explanations about the environmental conflict
- 2 evaluation of the conflict/controversy with reference to the concept of sustainable development, i.e. the extent to which approaches to the environmental conflicts and proposed solutions 'meet the needs of the present without compromising the ability of the future generations to meet their own needs.'

IMAGES & SLOGANS

an overview of three conflicts

GROUPWORK

Divide the students into six groups and randomly assign each group opposing view points on the three controversies, i.e. in favour of the Sellafield reprocessing plant / the nuclear industry or against the Sellafield reprocessing plant / the nuclear industry.

Ask each group to:

- 1 list arguments for their assigned position on the conflict in question
- 2 design a poster that includes slogans based on the strongest arguments
- 3 present their poster and slogans to the rest of the class.



THE NATURE OF ENVIRONMENTAL CONFLICTS

—
background information



CONVERGENT AND DIVERGENT PROBLEMS

—
E.F. Schumacher, in his book, *A Guide for the Perplexed*, described a distinction that is useful when dealing with controversial issues in general. This distinction is between convergent and divergent problems.

Convergent problems

Here there is an agreement about the nature of the problems and about the goals to be reached and an acceptance that issues can be discussed and resolved rationally.

Divergent problems

Here there are different perceptions of the problems, and people hold different values and beliefs in relation to them. There is no agreement on goals, and therefore rational discussion and agreement on solutions is difficult.

Environmental conflicts involve both convergent and divergent problems. In our three case studies the protection of clean water was a convergent problem, but it was still a very difficult problem to solve. The other case studies, nuclear power and genetic modification, could be described as divergent problems.

WHAT IS RIGHT AND WHAT IS BEAUTIFUL

—
J. Lichatowich, a fisheries biologist and conservation writer, wrote the following on environmental conflicts:

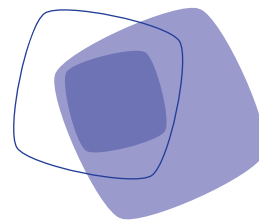
I believe most of the important environmental debates boil down to these two questions, to what is right – our moral obligations to manage resources for productive use today and for persistence for the benefit of future generations; and to what is beautiful – maintaining the beauty of ecological diversity, including man's ability to earn a living from that diversityEnvironmental conflicts with roots in conflicting values are difficult to deal with because there is often no satisfying nor easily achieved compromise.

J. Lichatowich, *Sherkin Comment*, 1990



SELLAFIELD AND THE BRITISH NUCLEAR INDUSTRY

—
background information



BACKGROUND

Open a discussion on the video clip about the Sellafield reprocessing plant by asking the students the following questions.

- 1 Are you happy that this was a balanced presentation of the conflict?
- 2 What viewpoints should be included in this programme to get a better understanding of the conflict?

In the context of the discussion the following points should be made:

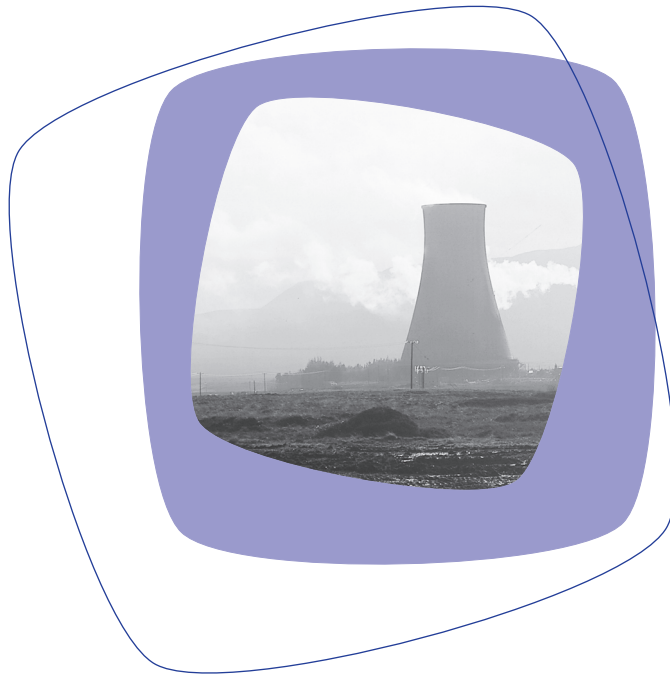
- › there are different levels to the conflict
- › there is conflict between British Nuclear Fuels Ltd (BNFL) and citizens in Ireland and Britain, and various environmental organizations (e.g. Greenpeace, An Taisce, CND)
- › there is also conflict at international level between Ireland and Britain as the closure of the Sellafield reprocessing plant has been Irish Government Policy since 1986

- › at EU level the importance of issues relating to nuclear safety is clear from the following statement from the EU Irish Presidency (January–June 2004) as part of its Environment Programme:

NUCLEAR SAFETY

The Irish Presidency will continue through dialogue to seek and develop consensus on the nuclear package which comprises of proposals for the establishment of common safety standards for nuclear power plants and for ensuring the safe transport, treatment and disposal of nuclear waste. While the need for flexibility to accommodate the different views of member states on the nuclear package is recognized, the Irish presidency will be guided by the need to ensure that Nuclear Safety is not compromised.

Taken from Environment Bulletin No. 58,
Department of Environment, Heritage and Local Government



MAP WORK

Ask students to find the location of Sellafield in Cumbria on the west coast of England using their atlases. The location explains the importance of the plant for Ireland.

RESEARCH

An understanding of the issues around radiation is an important starting point, so all students should read ENFO's Briefing sheet No.7, Ionising radiation, on the ENFO website (www.enfo.ie).

INTERNET / LIBRARY SEARCH

On the 'for' side of the debate (i.e. for the closure of Sellafield) the websites of Irish CND and Greenpeace and that of the Department of Foreign Affairs would be good starting points. On the 'against' side the websites of BNFL and the British Department of Energy should provide useful information.

Both sides should consult materials from independent bodies, such as the Radiological Protection Institute of Ireland (RPII), which has responsibility for monitoring radiation in the Irish environment.

DEBATING

Introduce the motion:

- › **The British Nuclear Plant at Sellafield should be closed in line with Irish Government policy**

EVALUATING THE CONFLICT

Individual assignments

Following the debate, each student should write an evaluation of the conflict based on the video, the group discussion and information gained from their research and from both sides of the debate. Conclusions should be drawn and judgements should be made with reference to the concept of sustainable development.



GENETICALLY MODIFIED ORGANISMS IN FOOD

—
group discussion



Distribute the students' background information sheet to the class.

IDENTIFYING GMOs

—
Ask students to identify GMOs in food or products derived from GMOs in their own home.

GROUP DISCUSSION

—
In the video clip there is a very clear division of opinions on GMOs.

- 1 Begin the discussion by reading out the statements 'for' and 'against', asking students to list the arguments as you do so.
- 2 In the discussion that follows ask students to prioritise the main concerns about and potential benefits of GMOs.

INTERNET SEARCH

—
Using the lists of potential benefits and concerns given in the statements, ask students to carry out an internet search for websites on GMOs. The pages on the EPA website on GMO regulations and Frequently Asked Questions (FAQ) are a good starting point. For researching concerns about GMOs, the Greenpeace website would be useful, while websites of companies such as Monsanto will give the industry perspective.

EVALUATING THE CONFLICT

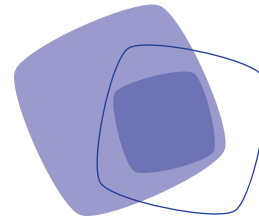
Individual Assignment

—
Ask each student to write an evaluation of the conflict with reference to the concept of sustainable development and to make conclusions based on their evaluation.



GENETICALLY MODIFIED ORGANISMS IN FOOD

background information



'doctors differ'

FOR This is a technology which has now got a 30-year record. There is not a single case of any damage ever having been done to any person, or to the environment. It is a brilliant technology. It has already yielded enormous benefits and yet the public, especially in Europe, is anxious about this technology.

Prof. David McConnell,
The Smurfit Institute of Genetics, Trinity College Dublin

AGAINST We are interbreeding with species that were never meant to interbreed. We are by-passing evolution and the world should say how dare we.

Dr Elizabeth Cullen, Irish Doctors Environmental Association

FOR We have been interfering with nature since man came on this earth.

Dr Jimmy Burke, Teagasc

AGAINST We don't know what adverse effects may arise from eating GM foods. There have been no tests carried out on humans. Testing on rats and mice has shown that there has been a thickening of the lining of the gut after eating these foods for only fourteen days. We are also concerned about the possibility of the development of allergies. We are concerned about the possibility of antibiotic resistance being passed to bacteria in the gut.

Dr Elizabeth Cullen

FOR Biotechnology or genetic engineering like any new science does offer a lot of potential to do things better than we did in the past. Particularly in relation to more sustainable farming systems, less use of plant protection products, more inherent disease resistance for pests and diseases and of course, for the consumer much better quality produce that would be more nutritious, will last longer. So there are quite a lot of benefits there!

Dr Jimmy Burke

AGAINST GM Foods are an example of where the interests of corporations are overriding the interest of public health.

Dr Elizabeth Cullen



GENETICALLY MODIFIED ORGANISMS IN FOOD

—
background information



A CONTEXT FOR DISCUSSION OF THE CONFLICT

A definition of GMOs:

At its simplest...[genetic modification]... is the programming of living organisms to do new things. Genetically modified organisms are defined as organisms (bacteria, viruses, fungi, plant and animal cells, plants and animals) capable of replication or of transferring genetic material in which the genetic material has been altered in a way that does not occur naturally by mating or natural recombination.

EPA website (www.epa.ie)

Are GMOs a new development?

Food products derived from GMOs, such as bacteria and yeast, are receiving wide press coverage but GMOs have been used to make commodities including yoghurt, cheese, and certain vaccines from as early as 1982. In addition, this relatively new technology (biotechnology), based on the properties of micro-organisms, is revolutionising the pharmaceutical industry, e.g. by the production of insulin and the anti-cancer drug interferon.

Report of the chairing panel of the national consultation debate on GMOs and the environment, p 3

Are GM crops being grown elsewhere?

At present there are 70,000,000 acres of genetically modified crops growing in the US, Canada and Argentina, and 56,000 acres in Europe.

Report of the chairing panel of the national consultation debate on GMOs and the environment, p 3

Who is responsible for regulating GMOs in Ireland?

The EPA, under the guidance of EU directives and the EU Framework on Modern Biotechnology.



POLLUTION OF GROUND AND SURFACE WATER AND THE CHALLENGE OF MAINTAINING PRISTINE WATERS

group discussion

GROUP DISCUSSION

Begin a group discussion on issues arising from the video clip and on the following statements.

An examination of Irish river quality over the last 20–25 years shows that we are already losing our highest quality rivers.

Martin McGarrigle
Senior Scientific Officer, EPA,
Sherkin Comment, 2003

...as more and more phosphate enters our water bodies, the number of rivers and lakes of pristine quality gets smaller every year. But we, of course, have to wait until there is nothing left but rat-tailed maggots and bloodworms everywhere before we take action.

Éanna Ní Lamhna
Talking wild, 2002, p. 148

Ask students to:

- 1 list sources of water pollution in their area
- 2 consider how wastewater is being treated in their area.

MAP WORK

Ask students to examine the 1:50,000 OS Discovery Series map for the local area. Ask them to list rivers and lakes in the area and note the settlement patterns around them, giving grid references and describing the situation of each settlement. They should also note patterns of rural settlement and the extent of rural settlement.

INTERNET / LIBRARY SEARCH

Ask students to study the EPA report Ireland's Environment 2004, which gives a good overview of water quality issues. This report and other up-to-date information is available on the EPA website (www.epa.ie).

GROUP WORK

Divide the class into groups and ask each group to examine the list of interests and groups below.

- > Rural dwellers
- > Urban dwellers
- > Tourism interests
- > Fishing interests
- > Farming interests
- > Local industry interests

Students should answer the following questions:

- 1 how do the practices of each interest/group contribute to water pollution?
- 2 what might be done to lessen the negative impact of the interest/group in its use of water?

Each group should report back its findings and views to the class.

GUEST SPEAKER

The local authority has the responsibility for protecting and managing water quality in its area. You may be able to invite a spokesperson from the local authority to the class in order to discuss issues, questions and information that have arisen from the research and discussion of the class.

EVALUATION

Individual assignment

Each student should write:

- 1 a list of the main issues and conflicts arising from their research
- 2 a description of the information gained from the meeting with the local authority spokesperson
- 3 an evaluation of the challenges posed by water pollution in the local area in terms of the concept of sustainable development
- 4 recommendations for the future.

