Media as partners in education for sustainable development:
A Training and Resource Kit

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Foreword

The United Nations Decade of Education for Sustainable Development (2005-2014) aims to integrate the principles, values and practices that can fulfill the world’s present needs without compromising the future of humankind, into all aspects of education and learning.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) is the lead co-ordinating agency designated to ensure the implementation of this far-reaching, complex undertaking. It has been entrusted by the United Nations General Assembly with the responsibility of promoting awareness and understanding on sustainable development. Media influence and shape public opinion, and UNESCO therefore invites all electronic and print media organisations, media professionals, training institutions and students to participate in the Decade of Education for Sustainable Development. This can be done by learning, understanding and imparting knowledge that is essential for the survival, growth, protection and development of planet Earth.

Why is media engagement vital in raising awareness on sustainable development? How can the media ensure systematic coverage and disclosure of accountability issues everywhere? Where can the media find accurate and reliable information? What will make the media consider covering sustainable development issues?

Media managers from developed and developing countries broached some of these questions at the World Summit on Sustainable Development in Johannesburg, South Africa, in 2002. They arrived at the conclusion that the greatest problem with sustainable development is that it has not entered the public conscience. They felt that the term ‘sustainable development’ is United Nations (UN) terminology, and that media audiences cannot relate to the issues and challenges unless these are profiled through people to whom they can relate. In countries where the struggle for sustainable development is part of daily life, media managers wanted to see more engagement that contributes to a growing, creative, information-sharing platform that is open to constructive discussion and debate.

The media community is urged to use this tool to inquire, investigate and report further so that issues can be disclosed, discussed and debated publicly and democratically.

We believe that this media training and resource kit will assist media professionals in their efforts to report on sustainable development issues, help provide relevant information resources and establish a model for media training on this important topic.

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Introduction

Sustainable development: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."


The concept of "sustainable development" dates back a long time, but it was at the United Nations (UN) Conference on Human Environment (Stockholm, 1972) that the international community met for the first time to consider global environment and development needs, to define principles for the preservation and enhancement of the natural environment and to highlight the need to support people in this process. Later, in 1992, at the UN Conference on Environment and Development, 178 heads of state adopted three important documents: a comprehensive plan of action entitled Agenda 21, the Rio Declaration on Environment and Development, and the Statement of Principles for the Sustainable Management of Forests.

These plans and principles were reaffirmed at the 2002 World Summit on Sustainable Development in Johannesburg, where tens of thousands of participants gathered to focus the world's attention and direct action toward improving people's lives and conserving natural resources. Countries were then asked to re-examine their consumption and production patterns, commit to responsible, environmentally sound economic growth, and work together to greatly expand cross-border cooperation to share expertise, technology and resources.

The UN three years later launched the Decade of Education for Sustainable Development (2005-2014). The Decade aims to integrate the principles, values and practices of sustainable development into all aspects of education and learning, so that sustainable development can be understood by everyone and participation in its attainment can take place at every level of society.

"Sustainable development" is a difficult phrase, because it can mean many different things. Sustainability is about water and food, shelter and energy. It is about how people hope to become rich and secure prospects for good health. It is also about the decisions of world leaders and their agreement and actions on what needs to be done. The UN's 15 perspectives on sustainability show just how wide and critical the issues are (see Table 1: Strategic Perspectives on Sustainable Development)."
Throughout this kit, you will find boxes with information about Education for Sustainable Development (ESD) and some of the subjects covered by each chapter. By reading these, you will discover more about why ESD matters and how the idea came into being.

Be sure of your sources and your facts

When you ask the key questions - how serious is environmental damage already? How bad could it be? - will we know? What can people do? - the answers will depend upon who you ask. It is important to decide who you can trust as a source of information, and to check every fact.

Follow closely what your chosen sources report, because what they say is likely to change very quickly, as the science is updating itself all the time. To make sure you are not missing anything essential, keep a regular eye on sources that may offer a different perspective or extra information.

A few words of warning. It is particularly important to treat what you read on the Internet carefully and to make an effort to verify your information. You can find almost anything on the Internet, and some of it will be incomplete, misleading or simply wrong. If you search long enough, you will probably find a scientist who says what you need to back up your story, but is their point of view really credible? Remember to check what you find on the web just as rigorously as you check any other source.

Sustainable development is a fiercely-argued subject. Always keep in mind that there are people involved in the debate who would be delighted if you accepted their arguments and opinions without challenge or scrutiny and presented them uncritically as facts.

Be aware also that the information in this document presents the opinions of an array of different scientists, commentators and economists around the world. Its authors encourage you to verify and test these opinions and information in your own country and context.

This Media Training and Resource Kit

Section One, Our Damaged World, reports on some of the main areas where humanity is pressing very close against the limits of what is sustainable. It examines the impact of several key problems caused (or at least worsened) by people. There is so much to cover that we can only give you a glimpse of some of the problems - but the information and ideas should be enough to set you thinking about what is happening in your nation.

Section One's separate but linked chapters 1-5 cover climate change, some aspects of the depletion of world resources (forests and fisheries, fresh water, biodiversity), and the impact of pollution.

Section Two of the kit puts the idea of sustainable development in a wider context for the reporter: it sets out some of the questions that any sceptical journalist would ask. Chapter 6 gives a flavour of some of the arguments around the subject - is sustainable development a fantasy?

Chapter 7 looks at whether we are asking the right questions of the right people about our current problems. Chapter 8 reminds us of eminent scientists’ warnings: many of them say the world is approaching what they call “tipping points”, crises beyond which change will be irreversible.

However good you are as a reporter, there is no point in creating your report if you cannot persuade your editors to run your stories. So Chapter 9 is about salesmanship, offering hints on making the subject matter attractive to editors and to your readers.

Finally, in Section Three, we move towards the future. Chapter 10 details a number of case studies, glimpses of places and situations where people are putting projects in place that will help develop a sustainable way of life. Chapter 11 tries to imagine what the sustainability revolution might look like. What would a sustainable future mean for each of us, what would we have to give up to get there, and what might we gain?

At the end of most chapters, there is a list of resources and ideas to pursue for stories or further thinking (a further full list of reading material appears in the Appendices). Each chapter is followed by a training section with exercises related to each chapter’s subject matter. These training modules can be adapted by trainers to the needs of individual classes by choosing a chapter or chapters with particular local relevance, or by using a different ‘story’ as the basis for the training activities. The questions given in the training sections should be updated regularly within the relevant context, place and time.

Resources and Ideas

The UN Decade of Education for Sustainable Development

Information

- The DESD website: http://www.unesco.org/education/desd/
- EOLSS: http://www.eolss.net
- The Strategic Perspectives are adapted from Section 3, Perspectives, (pp18-20) in the document Framework for the UN DESD International Implementation Scheme: http://unesdoc.unesco.org/images/0014/001486/148650E.pdf

Table 1: Strategic Perspectives on Sustainable Development

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Description</th>
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<tbody>
<tr>
<td>Society</td>
<td>Human rights: respect for human rights is at the heart of sustainable development. Education about sustainable development must enable people to assert their right to live in a sustainable environment.</td>
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<tr>
<td></td>
<td>Peace and human security: the fragile processes of sustainable development are undermined by insecurity and conflicts which cause suffering, pressure health systems, destroy homes, schools and whole communities, and lead to the large-scale displacement of people.</td>
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<td></td>
<td>Gender equality: each member of society must respect others and be able to fulfil their potential. Men and women must see each other as equals, recognising their shared responsibilities and individual roles as caretakers of the environment in which they live and, more broadly, the world around them.</td>
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<td></td>
<td>Cultural diversity and intercultural understanding: opportunities for education and development are damaged by a lack of tolerance. Peace is founded on intercultural understanding.</td>
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<td></td>
<td>Health: health is closely bound with environment and development issues. Poor health hampers economic and social development, triggering a vicious cycle that contributes to unsustainable resource use and environmental degradation.</td>
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<td></td>
<td>HIV/AIDS: the ravages of this pandemic in Africa and rising incidence in Asia and Europe are capable of reversing sustainable development and educational processes.</td>
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<td></td>
<td>Governance: sustainable development is best promoted where governance structures enable transparency, full expression of opinion, free debate and input into policy formulation.</td>
</tr>
<tr>
<td>Environment</td>
<td>Natural resources (water, energy, agriculture, biodiversity): we must protect the world’s natural resources, which are essential for human development and survival – humanity depends upon goods and services provided by ecosystems.</td>
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<tr>
<td></td>
<td>Climate change: climate change involves the entire world, and is bound up with issues of poverty, economic development and population growth. Evaluate international agreements on the basis of how they impact the environment, the atmosphere and check harmful effects towards the climate.</td>
</tr>
<tr>
<td></td>
<td>Rural development: three billion people live in rural areas, and 60% of them are in the developing world. Sustainable urbanisation: cities have moved to the forefront of global socio-economic change, with half the world’s population living in them, and the other half increasingly dependent upon them for their economic, social and political progress. Cities pose threats to sustainable development, but also hold opportunities for economic and social advancement and environmental improvements.</td>
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<tr>
<td></td>
<td>Disaster prevention and mitigation: sustainable development is undermined where communities suffer or are threatened by disasters. Education for disaster risk reduction can reduce vulnerability and improve self-help strategies.</td>
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<tr>
<td>Economy</td>
<td>Poverty reduction: this is the central issue of the economic element of sustainable development, and the overarching concept guiding internationally agreed-upon goals and commitment to world development.</td>
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<td></td>
<td>Corporate responsibility and accountability: the economic power and political influence of large multi-lateral corporations indicates a huge potential contribution to, and effect on, sustainable development.</td>
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<tr>
<td>Market economy: the current global market economy poses challenges to the environment that can promote exploitive activities, placing populations in precarious economic conditions.</td>
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<td></td>
<td>The confluence of market influences and environmental protection to the advantage of local communities is a hallmark of good governance and also beneficial to overall economic stability and health.</td>
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CHAPTER 1

Climate Change

Education for Sustainable Development - Climate Change

The UN Decade of Education for Sustainable Development (DESD) provides an opportunity to promote active learning and suggests ways to make sense of climate change issues in the context of people’s daily lives. It seeks to translate passive awareness into active concern and to sustain behaviour change through daily habits.

Education for Sustainable Development intends to raise awareness about the crucial and urgent need to limit damage to the atmosphere and to check harmful climate change. It also informs people about conventions and international agreements using education as a means to build a global lobby for effective action, showing people that they can contribute to lasting solutions.

Climate change

“A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”.

The UN Framework Convention on Change (UNFCCC), Article 1.

The UNFCCC makes a distinction between “climate change”, where human activities are altering the atmospheric composition, and “climate variability”, which is attributable to natural causes.

Natural climatic variations have occurred throughout the Earth’s history, and the marks on the Earth left by these changes in the atmosphere’s composition have been observed by geologists and other scientists. However, human activities are now interacting with natural systems to create change.

This human-induced climate change is strictly known as “anthropogenic climate change”, but is often referred to simply as “climate change”. It is now widely accepted that global average temperature is rising as a result of the emission of greenhouse gases produced by human activities, which is creating changes not beneficial to the Earth’s atmosphere or to the environment.

The Intergovernmental Panel on Climate Change (IPCC) said in its 2007 environmental assessment: “Warming of the climate system is unequivocal.”

“Climate change” is a more accurate term than “global warming”, because although the average global temperature is rising, some parts of the world may in fact become colder. The “greenhouse effect” is an entirely natural process (without it the Earth would be too cold to support life), but humans have enhanced this effect to the point where it is creating climate change.

Greenhouse gases, some produced naturally but the majority increasingly produced by human activities, are forming a blanket round the Earth. This traps more heat from the Sun near the Earth’s surface, instead of letting it escape back into space.

Chief among the greenhouse gases are carbon dioxide (CO₂) and methane (CH₄). Global atmospheric concentrations of the greenhouse gases i.e. carbon dioxide, methane and nitrous oxide (N₂O) have increased markedly as a result of human activities since 1750 – when industrialisation began in Western countries - and now far exceed pre-industrial values determined from ice cores spanning many thousands of years.

Carbon dioxide is the main contributor. It is produced largely by the burning of fossil fuels - oil, gas and coal. These fuels are used in industry, to run transport from aircraft to private cars, and for heating and cooling buildings. The Keeling Curve shows how CO₂ has increased in the atmosphere of the island of Hawaii in the Pacific Ocean, far from the industrial pollutants of big cities.

Global average concentration of carbon dioxide in the atmosphere has increased from 280 parts per million (ppm) in the year 1750 to 368 ppm in 2000. Although these may still seem only minute concentrations, the presence of additional greenhouse gases has been enough to warm the Earth’s surface by 0.74°C in the last hundred years. Population expansion contributes to the use of fossil fuels, and thus the increase in CO₂ in our atmosphere.

Methane, or natural gas, also contributes to greenhouse gases, although not on the same scale as CO₂. Even though it occurs in lower concentrations than carbon dioxide, it produces 21 times as much warming as CO₂. Methane accounts for 20% of the enhanced greenhouse effect. A major source of methane is created by anaerobic micro-organisms in the intestines of livestock, mostly cattle. The world’s diet for meat means that two-thirds of agricultural land is now used to farm animals, contributing considerably to methane concentrations. Other factors of human activity which contribute to greenhouse gases are deforestation, agricultural activities such as rice farming and using fertilizers, and chlorofluorocarbons used in refrigeration. New studies also show that large quantities of methane are produced in the sediments of permafrost lakes, and warming in permafrost areas of Siberia and Canada might significantly increase methane emissions to the atmosphere.

The effects of climate change

Changes in temperature have an effect on the whole of the Earth’s system – for example, by altering weather patterns, and thus rainfall, and therefore what we can grow. A warmer atmosphere can hold more water before it condenses to fall as rain.

Table 3: Observed changes in (a) global average surface temperature, (b) global average sea level from tide gauge (blue) and satellite (red) data, and (c) Northern Hemisphere winter snow cover for March-April.

All differences relative to corresponding periods for the period 1961-1990. Smoothed curves represent decadal average values while boxes show yearly values. The shaded areas are the uncertainty intervals estimated from a combined analysis of least-squares regression and error propagation.

Table 2: Observed changes in (a) global average surface temperature, (b) global average sea level from tide gauge (blue) and satellite (red) data, and (c) Northern Hemisphere winter snow cover for March-April.

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Table 1: Keeling Curve of Atmospheric Carbon Dioxide from Mauna Loa, Hawaii.

© Truchet/UNEP/Still Pictures
The world’s oceans and their atmosphere are one linked system and also interact with the biosphere beyond that. The biosphere takes up and produces greenhouse gases (acting as both a source and a sink) and it can change the amount the Earth’s surface reflects sunlight. Results of climate change can take many years to show, and they can last for a very long time. Many of the greenhouse gases which are causing the warming will stay in the atmosphere for years: it will take centuries for the excess carbon dioxide to be taken up by natural sinks. So, even if the world stopped emitting CO₂ tomorrow, the atmosphere would go on warming for some time. The oceans, meanwhile, warming up more slowly than the atmosphere, but once they have warmed, they will take many centuries to cool again – they have great capacity to carry heat than the atmosphere and they overturn from top to bottom very slowly.

Therefore, decisions we take today will have effects far into the future. Some scientists believe the climate is very close to what they call a ‘tipping point’, a moment when actions (or failure to act) will force the Earth’s system so that it cannot return to its conditions before that point.

For example, if we let the global average temperature rise enough to start melting the Greenland ice cap, this melting, once started, would not stop. Jim Hansen, the director of NASA’s Goddard Institute for Space Studies, thinks that could happen within the next ten years, unless we make radical changes to the way we live. 1

There is also growing evidence that change is happening much faster than anyone thought possible a few years ago. This is partly because of what scientists call ‘positive feedbacks’—a process where the warming fuels itself, so the more warming increases, the more likely it is that they will increase still more. When ice melts, for instance, earth, rock, and water is exposed— and these dark surfaces absorb the Sun’s heat instead of radiating it back out into space. If these positive feedbacks are not held in check by natural negative feedbacks, it can create a runaway situation where a relatively small change can sometimes have big consequences. The very cycle each year is explained by the differences in the natural release of CO₂ in winter and summer.

Climate change does not mean a gradual warming that happens evenly all round the planet. Some parts of the world will get hotter much faster than others, and other regions may get colder. The Earth will also get wetter. Australian environmental scientist Professor Tim Flannery says that the difference between today’s temperatures and those of the last Ice Age is around 4-5°C.

This rainfall is not uniform, causing intense droughts in some areas and flooding in others. Shifs in rainfall patterns will have consequences for agriculture, hydro-electric power generation, flood planning and more.

Some commentators, including the UN Under Secretary for Humanitarian Affairs John Holmes, attribute the increasing frequency of disasters such as the terrible 2007 floods in India, Bangladesh and Nepal to climate change. 2 Although these regions have heavy rains and some flooding each year during the Asian monsoon, the 2007 floods affected 28 million people, and killed more than 400. The resulting stagnant water was a lethal breeding ground for disease, water sources were permanently damaged, and millions of hectares of farmland were under water, destroying crops.

No one extreme weather event can strictly be blamed on climate change, as weather has a random element that creates extreme conditions, with or without climate change. However, scientists can predict trends in the overall intensity of weather and climate, and the world is warming up.

The story
Climate change is a news story that has come into its own. Ten years ago, perhaps even five, it was very hard to interest editors in the subject. Now, increasingly, journalists no longer have to push for space to cover the story, the problem now, certainly in the developed world, is satisfying readers’ and editors’ demand for climate change material.

There are several reasons for this. One is that scientific opinion has become much more certain that the Earth’s climate is warming, as more research is undertaken. Another is that this is a story with clear political implications — are governments around the world doing enough about climate change? There are many reasons for inaction, not least the challenge of getting our current economies out of the economic recession and the level of scientific uncertainty which provides rhetoric for the opponents of action which confuses the issue and leads to delay. Where is the balance between economic development and protecting the environment? How will local custom and tradition contribute to, or hinder, sustainability?

A third reason is that many people and organisations now see climate change as something which is going to affect everyone on Earth in one way or another. In some countries, this has led to growing public pressure for action to limit the impact of climate change. Although people may not always have a very clear idea of what that action could mean in terms of changes to their lifestyle. Some countries feel a responsibility to others; the poorest countries have the least ability to adapt and will be the most vulnerable to climate change, yet it is the developed countries that have emitted the most greenhouse gases in the past (though some developing countries are now catching up). Who pays for adaptation of lower income countries?

Not only is much of the science getting clearer and surer, it’s also changing very fast. Every week sees a new discovery announced in the pages of scientific journals like Science and Nature, or in popular magazines, or on the television news. Radio and television sometimes break climate news, and almost always report scoops that their print colleagues have made. And there is a huge range of websites covering climate change from one angle or another.

For the latest overview of environmental and climate change, look at the UN Environment Programme’s (UNEP) GEO4 report, Global Environment Outlook: environment for development, published in October 2007. 3

The sceptics’ view
On the other side of scientific opinion, there are some sceptical voices saying that climate change is not a story at all, or not in need of any urgency. Some argue that the atmosphere is not warming enough for us to be concerned. Others agree that the changes are occurring, but say the causes are entirely natural. For example, they say that changes such as the amount of heat reaching the Earth from the Sun – are within the limits of natural variation. They believe nothing humans are doing makes any difference to these changes. Another argument is that says nothing that humans can do will have any effect in slowing the warming of the atmosphere in the future. And there are some who say the whole idea of climate change is hugely exaggerated by scientists who simply want to keep funding for their research flowing in.

The sceptics’ views deserve reporting. Firstly, because they are held by some fairly influential stakeholders, such as sections of big business and some national governments. Secondly, because although they are a scientific minority, they have a case that deserves to be heard. Science makes progress through consensus, but by testing ideas until they are proven right.

However, the sceptics’ view is sometimes given as much space as, or even more space than, the majority view, to provide “balanced” coverage. In fact, because there are fewer sceptics and much less evidence compared with the majority of scientific opinion, this kind of reporting is injecting an artificial “balance” into an unbalanced reality. Journalists should try to cover both opinions, but reflect the true weight of evidence in their coverage.

Learning about climate change
To help you to report climate change as comprehensively as possible, there are several guides through the mass of detail. Start with the IPCC, which speaks for the governments of the world on climate. Every few years it brings out a report: the Panel’s most recent assessment, in 2007, says global average temperatures are likely to rise by between 1.8 and 4.5 degrees Celsius by 2100. 4 This sounds a small change – but note that the difference between today’s temperatures and those of the last Ice Age is around 4-5°C.

The IPCC’s 2007 report says more clearly than its earlier reports that humans are at least partly responsible for climate change – that we are intensifying the climate’s natural variability. “Most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations. It is likely there has been significant anthropogenic warming over the past 50 years averaged over each continent (except Antarctica).” 5

But journalists also need to be aware of, and report, the scientists who think the IPCC may be understating the real scale of the problem. The IPCC is a cautious, judicious group – one of scientific consensus which says only what the governments who belong to it will accept. Few scientists think it overstates the problem, others think it is too weak. IPCC reports nevertheless provide a useful benchmark for climate science, and should be your starting point if you want to learn more.

Move on to further sources of information about climate change, including UNEP and, if you can access them in print or online, respected publications such as New Scientist and Nature magazines.

Action against climate change
What can anyone do to prevent climate change? A key part of your job is to tell your audience what is possible, scientifically and politically, and what is actually being done - sometimes there are big differences between the two. There are two strands of action: mitigation and adaptation.

The attempt to limit the effects of the build-up of greenhouse gases is called mitigation. Preventing, or at least reducing, the impact of a warmer world is a strategy governments are pursuing. The world’s first attempt at global mitigation is the Kyoto Protocol, which sets out to limit emissions; if it is fully implemented, it will reduce greenhouse gases by about 5% by 2012. In December 2007, world leaders met in Bali for the UN Climate Change Conference to set about creating a further framework for a low-carbon world.

Governments are also pursuing adaptation - accepting that climate change is happening and will gather pace, and trying to prepare their economies and societies and to influence the behaviour of individuals. If they are vulnerable to climate change, their countries may also be vulnerable to environmental extremes of every kind.

Most governments accept that both mitigation and adaptation are vital. Both strategies could mean radical changes to our societies, or quite small changes that everyone can make in their daily lives. Informing your audience about what may lie ahead will help them to come to terms with a certain fact.
Training materials

“The consequences of global climate change on agriculture and ecosystems are highly uncertain. Based on simulation models, the most likely impacts are net favourable effects for the cooler margins of the temperate zone, and adverse consequences for the sub-tropical semi-arid zone.”

(UNEP)

Group exercise

SCENARIO
You work for a newspaper that is in a landlocked African state called Luz. Government statistics now indicate that projected grain yields will decrease because of climate changes in the next decade. The projection is based on a joint analysis from the UN and the Intergovernmental Panel on Climate Change (IPCC).

Group exercise

The sceptics’ view

Information

- The Scientific Alliance: http://www.scientific-alliance.com
- Tech Central Station: http://www.techcentralstation.com/
- Some stories positively invite everyone to be sceptical about climate change: see for a taster http://environment.newscientist.com/article/mg19225724.000.html

Points to explore

- Your news editor says the paper’s climate coverage is too one-sided, and so you must reflect the sceptics fairly. What do you reply?
- Do you tell your readers to beware of some of the sceptics’ arguments, or just leave it to them to make up their own minds?
- How would you write the story of the ocean cooling? Would you write it at all?

Action on climate change

Information

- The Kyoto Protocol text: http://unfccc.int/resource/docs/convkp/kpeng.html. For a Q&A, see http://www.guardian.co.uk/environment/2005/feb/16/sciencenews.environment
- The US Environmental Protection Agency (EPA) on how individuals in the developed world can reduce their global warming impact: http://yosemite.epa.gov/oaar/globalwarming.nsf/content/ResourceCenter/TipsCalculators.html
- The University of Oxford’s Environmental Change Unit explains how a personal carbon allowance scheme might work: http://www.eei.co.za/research/energy/downloads/40house/background_doc_1.pdf
- CarboSchools initiative: http://www.carboschools.org

Sub Editor

Write a two deck broadsheet headline, a tabloid splash headline and a bill poster for the streets

Features Editor

Outline how you would amplify the issue on a feature page without crossing over into news territory

Web Editor

Explain what you would make this a lively interactive issue, ensuring readers of all ages, cultures and socio-economic classes would contribute.

GROUP SESSIONS

30mins

The tutor will oversee how each group meets its challenges, works as a team and prepares for a summary of its ideas. The group will work as a team and be open to constructive comments. The news editor will chair any group session.

GROUP FEEDBACK

20mins

Each group will be assessed by workshop colleagues in an open session and will be able to justify their decision-making or be able to change their decisions based on constructive comments.

Individual exercises

- Write a brief, reader-friendly guide to climate change: what it is, what it will mean nationally, what people can do to prepare for it.
- Write a leader addressed to your government on the climate policies it needs to adopt.
- Find out if any of your country’s scientists were involved in writing the IPCC’s 2007 report, and ask them whether they think it is cautious or frank.
- Use the IPCC’s 2007 report to write a series of pieces alerting your readers to the probable impact of climate change for your country.

Your paper is producing a supplement on the world in 2020 for secondary schools. Write a 500-word piece for it on climate change.

Based on a workshop of 24, divide into four groups. Each group will have

Your paper is producing a supplement on the world in 2020 for secondary schools. Write a 500-word piece for it on climate change.

Write a readers’ guide to the inadequacies of the Kyoto Protocol and the need for a much more far-reaching agreement to replace it. What is your country doing to meet the demands of the Protocol? And what is the world community doing to progress matters?

Tell your readers what they can do to reduce their own emissions of greenhouse gases.

LECTURE NOTES

KEY MESSAGES

- Demand grows for climate change stories
  - Science is more certain
  - Political ramifications
  - Everyone is affected

- Reporting the story
  - Find resources you understand and trust
  - Follow that resource
  - Watch for changes in the story

- The sceptics
  - Some say the atmosphere is not changing that drastically
  - Some say the story is fanned by scientists who want to keep their research alive
  - The sceptics deserve coverage but only in context with the overwhelming evidence that climate change is happening

- Your job
  - Make sense of the subject
  - Communicate to your audience in a highly understandable way
  - Explain what is possible
  - Explain what is being done
  - Filter out exaggerated claims
  - Keep sceptics’ comments in context

KEY LEARNING POINTS

- Keep up to date on the subject of climate change
- Teams work best when they have a common understanding in order to present facts on climate change
- Teamwork helps sharpen the focus of an individual
- Working together and being open to change is vital
- Case studies will reflect problems and solutions
- Knowledge about climate change is still contested. Group exercise

- The sceptics deserve coverage but only in context with the overwhelming evidence that climate change is happening

- Your job
  - Make sense of the subject
  - Communicate to your audience in a highly understandable way
  - Explain what is possible
  - Explain what is being done
  - Filter out exaggerated claims
  - Keep sceptics’ comments in context

- The sceptics deserve coverage but only in context with the overwhelming evidence that climate change is happening
ADDITIONAL NOTES FOR TRAINERS

SUGGESTED LESSON PLAN

Class size: 24
Time: 90mins
(These are estimates. Timings can change according to class size and duration)

AIM
To teach the workshop the ability to work as a team in reporting a fictional scenario based on climate change

OBJECTIVES
By the end of the session, members will
• Identify key points in the scenario
• Delegate responsibility to individual group members
• Offer and receive constructive comments to improve work
• Publicly state their proposals and change their material if improvements are valid

LESSON PLAN

<table>
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<th>Detail</th>
<th>Method</th>
<th>Resources</th>
<th>Time</th>
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<td>Intro/trainer</td>
<td>Lecture</td>
<td>Power Point</td>
<td>5mins</td>
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<tr>
<td>Aims &amp; Objectives</td>
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Fisheries

Overfishing

Fish is one of the most conspicuous demands on the world’s natural resources and provides certification of projects on which work sustainably. For example, in Costa Rica, the Foundation for the Development of the Costa Rican Volcanic Mountain Range (FUNDECOR) has blended the needs of conservation with those of local people. It has introduced forest management plans which contain new ways to make better use of local activities, demonstrating new ways to make better use of the forests for the benefit of everyone. At the same time, it has used FSC certification of products from small wood producers to connect them to local and international markets, generating large volumes of trade.

However, sustainable forest management does not always appeal to those who want to exploit the forests. Big companies want to use forest land to grow crops – and at a local level, some farmers make better money from crops of soya beans while other communities generate funds from illegal logging.

More people in the West are becoming aware of the harm caused through the destruction of forests and they are campaigning actively to change this. For example, people refuse to buy forest products that are not branded by sustainable managers such as the FSC.

In Kenya, Nobel Peace Prize Laureate Professor Wangari Maathai founded the Green Belt Movement which involves nearly 900,000 rural women who have established nurseries and planted trees to reverse deforestation. Now international, the Movement has planted more than 30 million trees throughout Africa.

The need for action

UNESCO’s Man and the Biosphere (MAB) programme emphasises the need for human resource training to ensure integrated management of tropical forests, effective collaboration with local communities, and improved conditions for local populations. Studies indicate that poverty leads to more extraction from forests to meet the demand not only for fuel but also for healing and other medicinal purposes. Although logging procedures and management guidelines exist for timber exploitation, these are lacking for a wide range of localised problems – from traditional medicine to new farming community settlements. A well-informed public can help to create better understanding of local issues and can influence the decisions of policy makers and the actions of the public.

In the words of UNEP Executive Director, Achim Steiner, “Sustainably managing ancient and old-growth forests and avoiding deforestation must be our watchwords. It is also in our wider interests to restore, reforest and recapture the lost and diminished forest and woodland ecosystems that have, all too often, fallen to short-term and narrow economic interests.”

Resources and ideas

Forest depletion

Information

• Convention on Biological Diversity: http://www.cbd.int/default.html
• The UN’s special Forum on Forests: http://www.un.org/esa/forests/
• The UN’s Earthwatch: http://earthwatch.unep.net/forests/index.php
• The World Heritage Centre’s programmes on forests: http://whc.unesco.org/en/activities/
• Try the UN Food and Agriculture Organisation (FAO) forestry site: http://www.fao.org/forestry/en/
• The FAO’s Global Forest Resources Assessment: http://www.fao.org/forestry/forestry-est/1191/en
• WWF forest section: http://www.amazon.com/about_wwf/what_we_do/forests/index.cfm
• 2007 WWF report: The Amazon’s vicious cycle: drought and fire – http://www.earthwatch.unep.net/forests/extension_of_marine_parks_are_promising. In Kenya, catches at the Bamburi Marine Park have more than doubled since the park was created. However, new policies could hold hope. According to UNEP, community management of fisheries, certification of fish and the extension of marine parks are promising. In Kenya, catches at the Bamburi Marine Park have more than doubled since the park was created. However, new policies could hold hope. According to UNEP, community management of fisheries, certification of fish and the extension of marine parks are promising.
Points to explore
- Are your forests healthy, or dying? Who is responsible for them, and who profits from them?
- Do you have an efficient forest conservation law, and is it enforced effectively? If illegal logging is a problem, spend time with a forestry patrol and report on what they find.
- Does your country have a forest certification programme? Are your forests certified by the FSC?
- What rare or endangered species live in your forests? How long can they survive?

Fishing
- UNESCO’s LINKS programme on coastal management and knowledge of oceans: www.unesco.org/links
- The Global Information Waters Assessment for an extensive and area-specific picture of fisheries, pollution and usage: http://www.giwa.net
- The World Heritage Centre’s Man and Biosphere Programme looks at the relationship between people and their environment: http://www.unesco.org/mab/mabProg.shtml
- Traffic International: http://www.traffic.org/InFocus.action
- The Sea Around Us Project at the University of British Columbia researches policies to reverse harmful trends in fishing – see your country’s fishing footprint: http://www.seaaroundus.org/project.htm
- The International Coral Reef Action Network: http://www.icran.org
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- Read The End of the Line: How Overfishing Is Changing the World and What We Eat, by Charles Clover
- For more on fishing, see the UN Environment Programme’s Ten Stories the World Should Hear More About.

Points to explore
- Are your country’s fishing methods good for the environment? Are they sustainable?
- What can you learn from the people who catch the fish? Can they find new ways to earn a living?
- What will people for whom fish is a staple diet eat when the fish become too scarce or too expensive?

Training materials
“Overfishing cannot continue,” warned Nitin Desai, Secretary General of the 2002 World Summit on Sustainable Development, which took place in Johannesburg. “The depletion of fisheries poses a major threat to the food supply of millions of people.” (UNEP website)

Group exercise
Press Conference 15mins
In this imaginary scenario, the United Nations Environment Programme calls a sudden press conference in Maka, a small South Pacific independent island nation. It is releasing the results of an analysis of the local fishing industry. Those present are:
- Dr Jasawinder Patel
- Ian Jones
- Professor Zhang Chen
- Mrs Naveen Haq

This is the essence of the conference: UNEP is calling for an immediate ban on fishing within 750 miles of Maka to stop international fleets from trawling for tuna. It says if the current level of fishing continues, there will be no more tuna of a certain breed called Blue Tip. Dr Jasawinder Patel, a specialist in the species, says at least 16 countries, including North Korea and Japan, are to blame as they value the fin of the fish as a rare delicacy. Ian Jones from the WWF says the fishing industry has blatantly ignored any serious discussion of the ban to stop the eradication of the tuna. He says that local fishermen, who sell their catch to big ships, should also be banned. Professor Zhang Chen, from UNEP, says it is extremely delicate because Japan is one of Maka’s most powerful business partners as it supplies microchips for the island’s infant industrial base.

Island President Mrs Naveen Haq says the world just wants to turn its back on the worldwide problem of vanishing fish stocks and warns that 58 percent of Maka’s fragile economy is based on the sea.

GROUP SESSION 25mins
Separate into three groups:

Print
Using Professor Chen’s and Mrs Haq’s comments, assess the story and use research sources to widen the foundation of the issue. Then create an outline for a large scale feature story. How would you approach this? How would you entice the reader to take the time and effort to read the story? What’s the opening peg? How would you illustrate it? How much space would you give to the other side of the issue?

Broadcast
Create a treatment for a 30 minute documentary. Budget does not allow for international travel.

Online
Deliver a plan to make this an interactive story. What would be the links or sidebar? How do you create balance? Include podcast, live webcast, blog, vlog.

GROUP FEEDBACK 20mins
Each group will summarise its tasks in an open discussion and be assessed by workshop colleagues. They will justify decision making or be able to change their decisions based on constructive comments.

Individual exercises
- Write a story about which countries in the developed world are buying your timber and other forest products (like nuts and fruit). Then ask Non-Governmental Organisations (NGOs) in those countries how much of the imports came from sustainable sources.
- Tell your readers what the loss of your forests could mean: landslides, erosion, floods, changes in the climate, loss of species, a habit to exports. Raise questions about how loggers can find alternative incomes.
- What should the politicians do? Write an op-ed exploring ways of conserving the fish and the fishing industry.

LESSON PLAN

KEY MESSAGES
- Present trends
  - They will not stay the same
  - Population will increase causing more demand
  - Higher living standards will cause more demand
  - Rich use resources more than poor: creating more poverty problems
- Crisis point: Forestry
  - One in five people worldwide depends on forests for a living
  - An area the size of 36 football pitches disappears each minute
  - Human need for fuel and income leads to deforestation
  - Corporate pressure for profits leads to deforestation
- Crisis point: Fishing
  - Difficult for nations to control fish stocks because of movement patterns
  - Some fishing methods such as dynamite are dangerous
  - Real threat to commercially worthwhile fish left in international waters.
- Your job
  - Explain that the present use of resources is changing
  - Explain that this will create more demand
  - Communicate to the audience in an easily understandable manner

LESSON PLAN

KEY LEARNING POINTS
- Keep up to date on resource depletion
- A press conference can deliver key points of information
- There can be on the record and off the record ways of communication
- Different disciplines - print, broadcast and online - will approach the press conference in different ways
- Different media will use the same material but in different formats

ADDITIONAL NOTES FOR TRAINERS

SUGGESTED LESSON PLAN
Class size: 24
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AIM
1. To teach participants how to approach a press conference and extract the best material from the event when there is little time to prepare
2. To approach the writing of a print, broadcast or online idea on the issue

OBJECTIVES
By the end of the session, the workshop will:
- Know how to ask the correct questions
- Identify key players
- Identify off the record and on the record comments
- Use the material to achieve aims for different media

- Water education projects can help engage priority sectors in the community in saving and protecting water resources.
- The key messages:
  - Education in Delft, the Netherlands, the water-related programmes producing useful ESD materials for formal and informal educators include: the World Water Assessment Programme. These capabilities are partly put in place to try and address shortages, have damaged the environment.
  - Over the next 20 years, the use people make of this limited amount of water will not be enough to meet everyone’s basic needs – if it is managed properly.
  - Water for people
    - The UN estimates that everyone needs 20 to 50 litres a day for drinking, washing, cooking and sanitation. (A running tap uses 7-12 litres a minute, garden sprinklers and hoses about 20 litres, and flushing a toilet uses between six and 20 litres.)
    - To provide everyone in the world with the basic supply of 50 litres a day by 2015 would take less than 1% of the amount of water we use today. It would not be tremendously expensive, in terms of world spending. The United Nations Children’s Fund (UNICEF) says meeting the Millennium Development Goals (MDGs) on water and sanitation would cost approximately an additional US$1.3 billion each year. To put that in context, people now spend around US$ 50 billion on bottled water each year.
    - Small changes, which mostly come through education, can help improve supplies in water-poor areas: for example, helping communities find ways of harvesting rainfall during the wet season and storing it, training farmers in water management and irrigation, and improving local distribution.
- Resource depletion: fresh water

### Water resources

**Very little of the water on Earth is available for us to use.** Approximately 98% is salty seawater, and most of the rest is locked up in ice caps and glaciers. Of what remains, much is in remote and inaccessible regions, and much arrives in sudden violent downpours as monsoons and floods, vanishing before it can be used. Freshwater lakes and rivers make up less than 0.01% of water on earth, and groundwater 0.28%.

### Water for people

- Water education projects can help engage priority sectors in the community in saving and protecting water resources.
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    - Small changes, which mostly come through education, can help improve supplies in water-poor areas: for example, helping communities find ways of harvesting rainfall during the wet season and storing it, training farmers in water management and irrigation, and improving local distribution.
The world's great rivers, upon which whole agricultural communities depend, are also facing problems due to changes in temperature and rainfall (and sometimes also land use). The UN's second World Water Development Report, Water: A Shared Responsibility (UNESCO, 2006), says that if current trends continue, the flow of one of China's great watercourses, the Yellow River, is now too slight for it to reach the sea. The river has run dry for part of each year since 1985, and in 1997 it failed to reach the sea on 226 days. The lower reaches of the Nile, which used to carry one-fifth of all the water of a metre a year, now carry just two billion. The Indus in Pakistan has lost 90% of its water since 1945.

Australia's Murray River now reaches the sea only one year in two. Australia, the driest inhabited continent, has faced drought since 1998. The UN PCC predicts that by 2050, the annual water flow in Australia's huge flood-growing region, the basin of the Murray-Darling rivers, will fall by 10-25%.

The Horn of Africa faces continuing desertification of its land, as lack of rain kills plants and leaves a landscape devoid of sustenance for wildlife. In 2002, the UN's Food and Agriculture Organisation (FAO) reported that 11 million people needed food aid in Ethiopia, Kenya and Djibouti because of drought. Ways of living which depend on herding animals to find the best sources of food are collapsing.

Desertification

Desertification is degradation of land in arid, semi-arid and dry sub-humid areas. It is a gradual process where soil productivity declines and vegetation cover thins, because of human activities and climatic variations. It already affects a quarter of the total land surface of the earth, and roughly one third of the world's land surface is threatened by the process. Over 250 million people are affected by desertification. Twenty four billion tons of fertile soil disappears annually. Estimates are that the decline will affect two-thirds of arable land in Africa by 2025, one-third of arable land in Asia and one-fifth in South America.

High temperatures cause droughts that prevent vegetation from growing, but human activities make the situation worse. Overgrazing and deforestation remove the vegetation and trees that stop erosion, and over-cultivation exhausts the soil. Poor irrigation methods cause the amount of salt in the soil (salinity) to rise and can dry out rivers and lakes. For example, the once-fertile Kassala and Kassala areas in Sudan, and Lake Chad in Africa have shrunk dramatically in this way.

Desertification affects individuals - as with other water issues, it is usually the poorest people who are hit hardest. People are forced to migrate to find food and water, leaving the land behind them. It is estimated that some 800 million people, or around one fifth of the world's population are uprooted by desertification. Twenty four billion tons of fertile soil disappears annually. Estimates are that the decline will affect two-thirds of arable land in Africa by 2025, one-third of arable land in Asia and one-fifth in South America. If too little rain is falling to feed the river, is there another source beneath our feet? Some regions have huge amounts of water in underground reservoirs (or 'aquifers') where it has accumulated, sometimes over millions of years.

Two billion people depend on this groundwater, including the populations of some of the world's biggest cities - including Bangalore, Cairo, Calcutta, London, Mexico City and Jakarta. Groundwater systems provide between 25% and 40% of the world's drinking water. The reservoirs are often being emptied faster than they can refill themselves. UNEP in 2003 said excessive irrigation and groundwater extraction had led to the depletion of 46% of the world's aquifers. Jakarta, Karachi and Manda has had to balance irrigation and ground water use. Water supplies of groundwater were being exploited so fast that water tables were falling by about three metres a year across much of the developing world. In the Bangladesh delta, Dhaka, heavy abstraction from urban aquifers has led to the water table falling by as much as 40 metres.

Water management

The GWA 2006 Report pointed out that management of water in developing countries is particularly difficult because governments do not know the size of the resource, especially of underground aquifers, or the precise patterns of use and demand.

One longer term solution may be factoring in the environment in the value put on water. Ecosystem services would provide the goods and services provided by natural water features like freshwater rivers and lakes, coral reefs and wetlands. Landowners of wetlands in Mexico, the GWA says, could be paid for the waste water treatment provided by these natural pollution filters. Payment schemes for watershed services have been tried successfully around the world, where good upstream practices such as organic farming, sustainable forestry or soil conservation, have been rewarded, reports the IED. Projects range in size from a few families to a Chinese programme that aims to reach 15 million farmers.

Recycling of water will also need to improve. At the moment, says the GWA, freshwater withdrawals in agriculture only return 30% of the water to the environment – compared with the recycling of 90% of household water.

There are ways of improving things, if concerted efforts are made. For example, a November 2006 report by UNEP and the World Agroforestry Centre highlighted the massive potential of rainwater harvesting in Africa. By implementing NRM1 collection into small, community-based storage systems – rather than vast dams which lose huge amounts of water to evaporation – lives of households, communities and even wildlife could be improved. Not all rainwater can or should be harvested (a third is needed for the wider environment), but better implementation of these simple technologies would provide more than adequate supplies for many people in Africa.

The report says that in Ethiopia, for instance, where only around a fifth of the population are connected to domestic water supplies and almost half the population suffer hunger, there is the potential to harvest water for a population of 260 million people. Rainwater harvesting in containers and mini-reservoirs in a Maasai community in Kenya has led to improved food production, and women are gaining four hours a day to devote to education, child care and cultivation which they had previously spent finding and fetching water.

Water conflicts and cooperation

There are 263 trans-boundary basins in the world. They cover around 45% of the globe's surface and they represent a necessary resource for about 40% of the world's population, the competition is clear. Needs are also growing: during the twentieth century the world's population increased three-fold while water withdrawal increased six-fold. In addition, climate variability is worsening an already complicated situation.

The story

You can write about water from a variety of angles: how much there is, and why that may be changing; inequality of supply; what the politicians are doing about shortages; what farmers and industry are doing to improve their record of water use; how individuals can change their habits; how tourism could be made more sustainable; what is the impact of tourism; how people are coping. If you live in a country with ample water supplies, your readers will be interested in what you can do to reduce waste – lives of households, communities and even wildlife could be improved. Not all rainwater can or should be harvested (a third is needed for the wider environment), but better implementation of these simple technologies would provide more than adequate supplies for many people in Africa.

If water depletion continues, whole cities and agricultural communities could fall under threat. What are we doing about it?
Action on water

Information
- UN-Water, a multi-agency initiative: http://www.unwater.org/

Points to explore
- Find out what potential there is for improved irrigation, and for other agricultural methods which use less water
- How likely is your country to achieve all or any of the Millennium Development Goals?

Climate change and water supply

Information
- The Earth Policy Institute: http://www.earth-policy.org/

Points to explore
- What will the likely impact of climate change be in your region?
- What preparations is your government making to prepare for it?
- Does anyone depend on glacier-fed rivers? Are they at risk of catastrophic flooding as the temperature warms?
- How healthy are your rivers? Are they flowing as strongly as they did 20 years ago? What does this mean for shipping and for the people who live along the banks?
- Does your country rely on groundwater? How fast is it being depleted? Is the water table falling? If so, how are people managing to get their water?
- How much water is left for the natural world after human needs have been satisfied? Find an expert who can tell you what water scarcity means for wildlife and wild places – and the associated tourist spend.

Depletion of the world’s wider resources

Information
- Limits to Growth: The 30 Year Update, written by three authors from the Club of Rome: Donella Meadows, Jorgen Randers and Dennis Meadows, is helpful on resource depletion, particularly Chapter 2 on ‘exponential growth’. It is available from the publisher Earthscan: http://www.earthscan.co.uk/
- The Club of Rome, a global think tank: http://www.clubofrome.org/
- The IED works for ‘more sustainable and equitable global development’, including resources: http://www.ied.org/NR/index.html
- Bullet points on resource depletion on the UK newspaper, The Guardian: http://education.guardian.co.uk/higher/research/story/0,1447996,00.html
- To check your country’s footprint, whether ecologically it is in the red or the black on the Global Footprint Network: http://www.footprintnetwork.org/
- UNESCO pages on energy and renewable energies: http://portal.unesco.org/sc_nat/

Training materials

Most countries in the Middle East and North Africa can be classified as having absolute water scarcity today. By 2025, these countries will be joined by Pakistan, South Africa, and large parts of China and India. This means that they will not have sufficient water resources to maintain their current level of per capita food production from irrigated agriculture. (International Water Management Institute.)

Group exercise

GROUP SESSION 30mins
Split into four groups.
Using website resources, explain the water issues visually. Use statistics and graphics to simply depict what the world faces when it comes to lack of water, overuse of water and recent depletion of water. Each group will use a flip chart to explain to the workshop what it will do.

The goal is to understand the power of the visual graphic, whether in print, online or to augment the moving image for TV. A subsidiary goal is to understand how overuse of graphics can harm the impact of a story.

CLASS FEEDBACK 20mins.
Each group will summarise its tasks in an open discussion and be assessed by workshop colleagues. They will justify use of specific visuals or be able to change their decisions based on constructive comments.

Individual exercises
- Write an op-ed explaining what you think your country’s priority should be when water runs short: agriculture, industry or households?
- Write a letter to your local MP, explaining what he/she could do to help mitigate the effects of climate change and how the world could share water fairly
- Write a constructive comments and Key learning points

KEY MESSAGES
- Supply
  - 98% of water is too salty
  - Much of remaining water is locked in ice
  - Only a fraction can be used for cooking, washing, drinking, sanitation
- Problems
  - Water related diseases are the leading worldwide cause of illness and death
  - These diseases kill 4.4 million people per year
  - Most who die are children
  - Growing water scarcity will affect countries including Pakistan, South Africa, and parts of India and China
- Climate change
  - It will increase water problems but it is unsure which parts of the world will be hit hardest
  - Rising temperatures may mean less snow, earlier rains
  - Smaller glaciers means less water for those dependent on them
- Your job
  - Understand present issues over water
  - Explain how climate change may affect water supply
  - Communicate issues in a highly understandable manner

KEY LEARNING POINTS
- Keep up to date on water issues
- Teams work best when they have a common understanding in order to present issues about water
- Be open to change and alter ideas if change is for the good
- Use of visual graphics is important when facts are crucial
- Overuse of visual graphics can impede understanding
- Different media will use the same material but in different formats
- Different media will use graphics and visuals in a different manner

ADDITIONAL NOTES FOR TRAINERS

LESSON PLAN

| OBJECTIVES | By the end of the session, the workshop will:
| Identify websites to extract facts for illustrations | Identify key elements |
| Identify which key elements can be used for visuals | Identify and outline which kinds of visuals are relevant for different media |

| CLASS FEEDBACK | Q/A |
| Different media will use the same material but in different formats | Different media will use graphics and visuals in a different manner |

| LECTION NOTES | KEY MESSAGES |
| Supply | - 98% of water is too salty
| - Much of remaining water is locked in ice |
| - Only a fraction can be used for cooking, washing, drinking, sanitation |
| Problems | - Water related diseases are the leading worldwide cause of illness and death |
| - These diseases kill 4.4 million people per year |
| - Most who die are children |
| - Growing water scarcity will affect countries including Pakistan, South Africa, and parts of India and China |
| Climate change | - It will increase water problems but it is unsure which parts of the world will be hit hardest |
| - Rising temperatures may mean less snow, earlier rains |
| - Smaller glaciers means less water for those dependent on them |
| Your job | - Understand present issues over water |
| - Explain how climate change may affect water supply |
| - Communicate issues in a highly understandable manner |

| LESSON PLAN | Time | Resources | Method |
| - Lecture | Power Point |
| 5mins | 90mins |
| Discussion | Flip Chart |
| 5mins | 15mins |
| Open discussion | Flip Chart |
| 5mins | 30mins |
| Group workshops | Handouts |
| 5mins | 20mins |
| Lecture | Power Point |
| 5mins | 5mins |

| SUGGESTED LESSON PLAN | Class size: 24 |
| Time: 90mins |
| (These are estimates. Timings can change according to class size and duration) |

| AIM | To learn how to use visuals to tell a story |

Additional notes for trainers:

- Class size: 24 |
- Time: 90mins |
- (These are estimates. Timings can change according to class size and duration) |
- AIM: To learn how to use visuals to tell a story |

LESSON PLAN:

| OBJECTIVES | By the end of the session, the workshop will:
| Identify websites to extract facts for illustrations | Identify key elements |
| Identify which key elements can be used for visuals | Identify and outline which kinds of visuals are relevant for different media |

| LESSON PLAN | Time |
| Detail | Power Point |
| Lecture | 5mins |
| Intro/trainer | Method |
| Aims & Objectives | Resources |
| Discussion | Flip Chart |
| 15mins | 5mins |
| Opening remarks | Handouts |
| 30mins | 20mins |
| Group feedback | Lecture |
| Discussion | Flip Chart |
| 20mins | 5mins |
| Q/A | Power Point |
| Discussion | 5mins |
CHAPTER 4  Biodiversity and extinction

Education for Sustainable Development - Biodiversity

Education for Sustainable Development addresses biodiversity by focusing on the interlinking issues of biodiversity and livelihoods, agriculture, livestock, forestry, fisheries, and other topics. The Decade for ESD offers an opportunity to develop a better understanding of how consumption impacts biodiversity at local and global levels and to sensitise children and young people to their role and responsibility in this process. It offers a chance to advance progress made in human resource development, education and training to prevent habitat loss and degradation, species loss and pollution. It also offers possibilities for more innovative ways of learning about biodiversity.

Through ESD, people come to realise that the products they consume can have an impact on the biodiversity in their own communities and in those of far-off lands. ESD can also inform people on conventions and international agreements related to biodiversity, such as the Convention on Biological Diversity (CBD), or the Ramsar Convention. ESD can build a global lobby for effective action, showing how...
In 2005 UNEP published its Millennium Ecosystem Assessment (MEA) and looked at the consequences of ecosystem change for human wellbeing. Its findings provide a state-of-the-art appraisal of the condition of, and trends in, the Earth’s ecosystems and the services they provide. It gives the scientific basis for action to conserve and use resources sustainably. After four years’ work by 1,300 researchers from 95 countries, the Assessment’s authors concluded that human activities were threatening the Earth’s ability to sustain future generations49. They said:

- a third of amphibians were threatened with extinction
- a fifth of mammals were threatened with extinction
- an eighth of birds were threatened with extinction
- an estimated 90% of large predatory fish in the oceans had disappeared since industrial trawling began
- more land had been converted to farming since 1945 than in the whole of the eighteenth and nineteenth centuries together
- more than half of all the synthetic nitrogen fertilisers, first developed in 1913, ever used had been spread on the land since 1985.

Perhaps most ominously, the MEA’s authors said the loss of biodiversity was largely irreversible.

The story

You may be able to identify species that are disappearing led ad from your country, and to the destruction of the environmental services and products upon which the vulnerable poor depend. So – look after the birds, and their habitats, to gain immeasurably.

Stopping the decimation

In 1987, the World Commission on Environment and Development (known as the Brundtland Commission) said: “Economic development must become less ecologically destructive,” and called for a new era of environmentally sound economics. Its sentiments were echoed in 1992, at the Rio Earth Summit, when 150 countries signed up to the United Nations Convention on Biological Diversity.

The Convention is an international agreement to sustain the rich diversity of life on earth, recognising that diversity is about people and their interaction with the Earth’s ecosystems, as well as about plants and animals. The Convention aims to conserve biodiversity, use the components of biodiversity in a sustainable way, and to benefit from commercial and other use of genetic resources in an equitable way. In 2002, parties to the Convention signed up to the 2010 Biodiversity Target, promising to put into place measures to reduce the current rate of biodiversity loss and to contribute to poverty alleviation and benefit all life on Earth.

There are many other international and national protocols, laws and strategies to protect biodiversity. But it all matters? Rates of habitat destruction are falling in the temperate region, but in tropical parts of the world, the rate of loss is continuing to rise.

http://www.panda.org/about_wetlands/wetlands.html#region/amazon/problems/amazon_degradation/amazon_deforestation/index.cfm

Resources and ideas

Extinction of species

Information point
- The World Conservation Union (IUCN), an authoritative source of information on threats to biodiversity: http://www.iucn.org/ (see especially its Red List of Threatened Species)

- The Millennium Ecosystem Assessment which looks at the reduction in biodiversity, but also sets out some options for a more sustainable future: http://www.millenniumassessment.org/en/index.aspx

- Traffic monitors wildlife trade: http://www.traffic.org/Home.action

Points to explore
- Has your government ratified the Convention on Biological Diversity? What does it do and uphold and implement?
- What strategy does your government have to take care of this generation without damaging the prospects for your descendants?

The Earth’s ecosystem

Information
- The last refuge of Bangladesh: http://www.exo.magzillr.ca/ MagRack/SF/Fall%2094%20G.htm
- Why Brazil nut plantations don’t work: http://www.bertholletia.org/bertholletia/CC/cc.html

The causes of extinction

Information point
- The UNESCO Man and Biosphere Programme: http://www.unesco.org/mda/mdaProg.html
- GIZ/JP http://www.unep.org/giez/
- The orang-utans’ plight: http://www.wwf.org.uk/core/wildlife/fs_000000003.asp
- The environmental cost of soy: http://www.guardian.co.uk/international/story/1997/11/27/279639

Points to explore
- How can poor people in your country feed themselves, if they shouldn’t kill bushmeat? Is that trade illegal, and how are laws enforced?
- How can your government earn enough foreign exchange to pay for development without destroying forests and rivers?
- What strategy does your government have to take care of this generation without damaging the prospects for your descendants?

Training materials

“Over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fiber and fuel. This has resulted in a substantial and largely irreversible loss in the diversity of life on Earth.”

(from the Millennium Ecosystem Assessment website)

Group exercise

SCENARIO
You work for a newspaper in Madagascar. You receive a phone call from a rural reader who warns that the majority of jobs in his remote village will disappear because of unreasonable protests by environmentalists over insects. You call a scientist who explains that the village is talking about the fate of cone snails. They are about to become extinct. But the scientist explains that international drug companies need the snail’s natural toxins to help treat lung cancer. The hunt for the snails, which creates jobs in the rural areas, is out of control and will impact on the biodiversity of the island, threaten the cone-snails’ existence and harm cancer treatment even more.

How do you sell this story to your news editor, your publication and to your reader or listener? How do you balance it?
GROUP SESSION
Based on a workshop of 24, divide into four groups. Each group will have:

Reporter
Write the first three paragraphs of this story and explain which external sources you would use for establishing this article, ensuring balance and non bias

News Editor
Prepare four follow up ideas for the next day’s paper

Picture Editor
Prepare three ideas for photographs, graphics or illustrations

Sub Editor
Write a two-deck broadsheet headline, a tabloid splash headline and a bill poster for the streets

Features
Outline how you would amplify the issue on a feature page without crossing over into news territory

Web
Explain how you would make this a lively interactive issue ensuring readers of all ages, cultures and socio-economic classes would contribute

GROUP SESSIONS 30mins
The tutor will oversee how each group meets its challenges and works as a team and prepares for a summary of its ideas. The group will work as a team and be open to constructive comments. The news editor will chair any group session.

CLASS FEEDBACK 20mins
Each group will be assessed by workshop colleagues in an open session and will be able to justify their decision-making or be able to change their decisions based on constructive comments.

LECTURE NOTES

KEY MESSAGES
• Loss
  - Number of species is unknown
  - Loss of biodiversity difficult if not impossible to reverse
  - Many scientists believe the earth is entering a sixth great wave of extinction

• Why we need to know more:
  - Other species are helpful
  - Up to 20,000 plant species used for medicine
  - Many prescription drugs use plant extracts
  - No species lives in isolation, they are interdependent
  - Removing a species can affect the entire ecosystem

• Your job
  - Understand extinction issues
  - Explain how extinction issues affect others
  - Communicate issues in a highly understandable manner

KEY LEARNING POINTS
• Keep up to date on issues concerning extinction
• Teams work best when they have a common understanding in order to present issues about extinction
• Teamwork helps sharpen the focus of an individual
• Be open to change
• Case studies can reflect on how extinction issues affect people
• Accept there are many unknowns
• Group evaluation will give an insight into how others form ideas

ADDITIONAL NOTES FOR TRAINERS & SUGGESTED LESSON PLAN
Class size: 24 Time: 90mins
(These are estimates. Timings can change according to class size and duration)

AIM
To teach the workshop the ability to work as a team in reporting a fictional scenario based on the threat of species extinction

OBJECTIVES
By the end of the session, members will
• Identify key points in the scenario
• Delegate responsibility to individual group members
• Offer and receive constructive comments to improve work
• State proposals and change material if improvements are valid

LESSON PLAN

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<thead>
<tr>
<th>Detail</th>
<th>Method</th>
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<tr>
<td>Intro/trainer Aims and Objectives</td>
<td>Lecture</td>
<td>Power Point</td>
<td>5mins</td>
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<tr>
<td>Intro/group What they know Key issues</td>
<td>Discussion</td>
<td>Flip Chart</td>
<td>15mins</td>
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<td>Review Key points</td>
<td>Open discussion</td>
<td>Flip Chart</td>
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<td>Task Groups</td>
<td>Power Point</td>
<td>Hand Out</td>
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<td>Q/A Aims</td>
<td>Lecture</td>
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CHAPTER 5
Education for Sustainable Development - Pollution

Contamination can come from many different sources, such as rubbish, urban runoff, insanitary conditions, pesticides and nitrates and environmental disasters. Education for Sustainable Development offers an opportunity to understand more about different types of pollution and how they affect all aspects of daily life. Prevention is the best solution and education is the best prevention tool. ESD educates stakeholders and encourages community participation in order to reduce and prevent pollution.

The key messages:
• Our personal habits play a role in preventing pollution.
• All of us share the responsibility both for creating the problems of pollution and for finding ways to solve the problems.
• If they have a choice, people must learn to make environmentally smart choices about the products they use – for example, choosing food from agricultural producers who respect the environment and use fewer pesticides, chemicals and water.

Pollution is everywhere, above us, below us, in what we eat and in how we dispose of our waste. It affects the health of the Earth, and the health of its people. In this chapter, we touch on some of the key issues – pollution is such a vast topic that we can only give a brief overview, and leave you to research the areas you think are most important to report on for your home nation.

Air pollution
As well as the effects of polluted air on the Earth’s atmosphere, air pollution is a direct killer. The WHO reports that 800,000 people a year die because of outdoor pollution106 (65% of these in Asia’s developing countries). There is even evidence that poor air can damage the lungs of children before they are born. Healthy people may not notice what polluted air is doing to them, but for someone with lung disease or heart problems, poor air can exacerbate ill health.

Air pollution cuts 8.6 months off the life of the average European107. In China in 2005, satellite measurements of one polluting gas, nitrogen dioxide, showed concentrations above the country had increased by 50% in ten years, and the rate of increase was speeding up108. Nitrogen monoxide and dioxide, highly toxic gases, are formed when nitrogen in the air meets...
By comparison, the Stockholm International Peace Research Institute reports that 10% of people live in countries where water availability is severely limited. The Institute estimates that 1.6 million people die each year as a result of fresh water shortages.109 There are many ways of saving this water for their own use, but only a few cost money.

In the developing world, 2.5 billion people rely on traditional biomass for their energy needs, and suffer the consequences of deforestation. Shockingly, the WHO estimates that 1.6 million people die each year as a result of fresh water shortages.109 There are many ways of saving this water for their own use, but only a few cost money.

To improve the situation is not impossible. The IEA's Dr. Fatih Birol argues that to provide LPG (liquefied petroleum gas) cylinders and biogas for cooking to 300 million people would boost world oil demand by a mere 1% and cost US$18 billion a year.110 That is less than the profits of several major energy companies and would have a tremendous value in social welfare and development. It does mean using more oil – it is a sustainable alternative.

108 http://www.e-who.int/bulletin/volumes/82/11/88221104.pdf#page=3
109 http://www.practicalaction.org/?id=energy
110 http://www.geography.org.uk/geography/article-67132
111 http://www.unicef.org/wes/index_31600.html
112 http://www.abc.net.au/science/features/bags/default.htm
113 http://www.icbl.org/what
114 http://www.practicalaction.org/?id=energy

Water pollution is also affecting species other than humans. For instance, suspended solids deposited in watercourses through deforestation and agriculture have severely affected coral reefs, seagrass and marine life in a number of the areas studied around the world. Water pollution is mainly caused by agricultural fertilizer run-off, sewage discharges and air pollution are present in lakes and rivers in many parts of the world, including Europe, Central Asia and sub-Saharan Africa, leading to the eutrophication of water and lake habitats.115

Chemical pollution

Nobody really knows how much of a problem chemical pollution is. It can be so subtle. Apart from the obvious examples when people have been directly poisoned by chemicals, as they were in the Bhopal and Seveso disasters, all science says is that some chemicals are certainly damaging wildlife, and it is probable that they are a risk to humans as well.

Chemicals can build up over time in the body, and they can move up the food chain. For instance, if you drink a blocked drain of water, the chemicals in that water can affect those animals that eat them, and people who eat top predators (such as tuna) can be harmed even more. Children are at particular risk because their bodies are still developing. The WHO says humans may be conducting a large-scale experiment with children’s health.116 One example of a damaging chemical is mercury, which occurs in the natural environment in small quantities, and can enter soil, air and water through coal-fired power generation, waste incineration, manufacturing and mining. The most common way of being exposed is to eat fish from contaminated seas and rivers. Mercury is a powerful neurotoxin, which passes easily into the brains of the foetus and young child, affecting brain development.

There is clear evidence linking one group of man-made chemicals, endocrine disruptors, to changes in the sex hormones and the behaviour of animals. For example, bullseye fish are showing signs of hermaphroditism.117 These chemicals interfere with glands and hormones – and may be doing the same to humans.

Dangerous chemicals can spread far and wide. There is virtually no industry in the high Arctic, yet pollutants have reached the area. The WHO says the polar bears there, carried north by winds and ocean currents. However, there are a number of chemicals that are particularly damaging, because they look like jellyfish to sea creatures. Whales, seals, turtles and birds eat them and then die from intestinal blockage; their bodies usually decompose far faster than the bag, which is released back into the water again to do more damage. Even camels in arid lands have been known to die from eating plastic bags.

Some dangerous chemicals occur naturally in groundwater because of the underlying geology, notably arsenic and fluoride.

In Bangladesh, high concentrations of arsenic were found in tube wells in 61 out of 64 districts, for example. Even in very small amounts, the chemical can cause severe and irreversible health problems, eventually affecting internal organs.118

Fluoride is found in high levels in some groundwater sources, particularly in certain areas such as the East Africa Rift Valley and the geological belt from Turkey through to China.119 Too much fluoride can cause symptoms from dental discoloration to crippling deformations of the skeleton. Ten millions of people could be affected – no one knows the total number, but in India, half of its states have endemic fluorosis. In China, people are affected not only from the groundwater, but through breathing airborne fluoride released by burning fluoride-laden coal.120

Contaminated land

Contaminated land is often literally an invisible problem – one cannot see pollution in soil. But industry and agriculture can pollute the land, making it less productive or even unsafe. The UK newspaper The Independent reported (31 March 2006) that the fertility of Africa’s soil was being depleted at a rate that threatened to undermine the continent’s attempts at eradicating hunger with sustainable agricultural development. A study had found three-quarters of African farmland was plagued by severe soil degradation, caused by wind and soil erosion, and the loss of vital mineral nutrients.121

Nitrates, a basic ingredient in artificial fertilizers and used widely in modern agriculture, cause excessive nitrogen loading of the environment on a global scale. It causes “eutrophication” of lakes and rivers, where an oversupply of nutrients disrupts aquatic ecosystems, causing mass growth of algae and plants. This depletes oxygen and kills aquatic organisms, leaving the water sterile. Nitrates also get into drinking water. They can interfere with the normal functions of the body’s blood, with the blood’s ability to carry oxygen to the body tissues, which depletes oxygen and kills aquatic organisms, leaving the water sterile. Nitrates also get into drinking water.

Warfare is another major source of contamination. The International Campaign to Ban Landmines says that between 15,000 and 20,000 people are killed every year by landmines – 40% a day. Despite the Ottawa Treaty of 1997, when 122 countries pledged never to use landmines and to clear their land of them, landmines are still used. The landmines from previous conflicts, do not distinguish between a soldier and a child, and cause horrific injuries if not dead. In Cambodia, for example, there are 45,000 landmine survivors from the years 1979-2005, and 20,000 people were killed during that period.123

Landmines also deprive people in some of the poorest countries of their land and infrastructure. They hold up the repatriation of refugees, they hamper reconstruction and aid, depopulate communities of their breadwinners and kill livestock and wildlife. Armed conflict is also a major cause of environmental problems in all developing countries: how to dispose of obsolete weapons? Chemical and nuclear weapons will deteriorate and become unstable, making them an environmental disaster waiting to happen unless they are dismantled and neutralized.

Waste

Waste causes pollution, even when the waste is not itself toxic. Chemicals are released when the right product is burnt in the wrong place. This can cause huge problems for animals and people. Countries such as India124, Kenya125 and Bangladesh found this to cost them with the humble plastic bag. Depending on how they are made, plastic bags cannot be done for 100 years. They can be used for everything from toilet paper to plastic bags in 2002 as a result.126 In a marine environment, the bags are particularly damaging, because they look like jellyfish to sea creatures. Whales, seals, turtles and birds eat them and then die from intestinal blockage; their bodies usually decompose far faster than the bag, which is released back into the water again to do more damage. Even camels in arid lands have been known to die from eating plastic bags.

Poor waste disposal can contaminate air, land and water. The organic (biodegradable) component of waste also provides habitat for disease carriers such as rats and mosquitoes. Rodents and insects can transmit diseases such as dysentery, typhoid, salmonella, cholera, yellow fever, plague and parasites.

One answer is, of course, to throw much less away, and to make products which last longer or can be recycled. The USA now recycles more than a third of its waste127, a change which has been made not only through legislation, but by creating an understanding of the need to recycle. This kind of cultural shift shows the power of the media, as well as governments, in educating for positive change. There is often also an economic driver at work: one person’s waste is another’s opportunity.

Recycling can be a very profitable business in itself, and America’s entrepreneurs are ready to take up the challenge. However, change is rare. UNEP’s advice on waste management is reflected in the need to reduce, then rethink and recycle. This kind of cultural shift shows the power of the media, as well as governments, in educating for positive change. However, change is rare. UNEP’s advice on waste management is reflected in the need to reduce, then rethink and recycle. This kind of cultural shift shows the power of the media, as well as governments, in educating for positive change. However, change is rare. UNEP’s advice on waste management is reflected in the need to reduce, then rethink and recycle. This kind of cultural shift shows the power of the media, as well as governments, in educating for positive change. However, change is rare. UNEP’s advice on waste management is reflected in the need to reduce, then rethink and recycle. This kind of cultural shift shows the power of the media, as well as governments, in educating for positive change. However, change is rare. UNEP’s advice on waste management is reflected in the need to reduce, then rethink and recycle. This kind of cultural shift shows the power of the media, as well as governments, in educating for positive change. However, change is rare. UNEP’s advice on waste management is reflected in the need to reduce, then rethink and recycle.
developing countries, can be “recovered” or recycled as compost for agriculture. More technically, it can also be used to generate energy, either biologically, producing methane, or thermally, using burning to produce heat.

Good management of sewage and waste water is also critical. A well planned and maintained sewage infrastructure protects people from disease by preventing contamination of drinking water, protects local ecosystems from damage and allows the recycling of nutrients. Waste water can be reused in agriculture, industry, cities, and to protect the environment through enhancing waterways and recharging groundwater. It can also be managed to minimise damage during drought, flood and disasters such as earthquakes.

The story
The reality of pollution and waste is unattractive, but powerful as a story. Pollution is all around us, in the form of air, water and chemicals. It can be a real health threat. It can have an international angle – is waste from richer countries being dumped in yours? It can have an economic slant: cleaning up pollution can be very profitable.

A story that can provoke reaction is to personalise the reader’s response, for example, by comparing figures for lung or heart problems with increases in traffic volume. It will probably startle many of your readers, viewers or listeners if you simply tell them what air pollution does to the human body – it can have an international slant: cleaning up pollution can be very profitable.

First-person accounts usually bring stories to life, especially where a piece is dealing with huge, intangible issues like pollution. Talk to people who cause air pollution (taxi drivers, farmers, power station workers) but whose living depends upon this work, and compare them with increases in traffic.

Points to explore
• Find out hospital admissions for heart and lung problems if you can, and compare them with increases in traffic.
• What are the sources of pollution in your country? What is the cost of cleaning them up, and how does it compare with other environmental priorities? What policy gives the greatest benefit to your country?
• How much of your air pollution is home-grown, and how much drifts across your frontiers from your neighbours? How much does your country pollute others? Who pays?

Water pollution
Information
• A basic guide to water pollution from WWF: http://www.panda.org/about/wet/wet_water_pollution.html
• More on water pollution from New Internationalist magazine: http://www.newint.org/issue354/facts.htm
• Polluted oceans: http://www.unep.org/geo/geo3/english/315.htm

Points to explore
• How many children in your country die before reaching their fifth birthday? How many of these had no sanitation (assuming you have ruled out other factors as causes of death)?
• How much does your government spend on treating people suffering from waterborne diseases? How many years’ expenditure would it take to provide everyone with clean water instead?
• What is your country’s annual military expenditure? How much would it take to provide sanitation for everyone? What budgetary choices have to be made?
• What laws have been passed to protect water quality? How are they enforced?

Chemical pollution
Information
• Examples of how chemical pollution affects children, in UNEP’s report, Children in the New Millennium: http://www.unep.org/cbbr/
• The contamination of the Arctic from the Polar Environmental Centre: http://www.nikk.no/pamec/
• Some chemicals are leading to animals in effect changing sex: http://www.nrc.ca/health/effects/pindoc.asp
• Pollution is not a national problem: it needs countries to work together: http://www.oce.mmu.ac.uk/oce/Acid_Rain/other/International_Agreements.html

Points to explore
• Find out who in your country is responsible for monitoring chemical pollution. Ask them how many potentially harmful chemicals they know of in the country (perhaps used in agriculture or manufacturing), and if there is any protection against them. Are chemicals being used correctly and safely?
• Ask your environment ministry - or an international agency like UNEP - what potentially hazardous chemicals could safely be phased out and replaced with safer alternatives.

Land contamination
Information
• The Basel Convention: http://www.basel.int/
• The International Year of Sanitation: http://www.unsgab.org/
• The International Campaign to Ban Landmines: http://www.icbl.org
• Examples of land contamination from Pakistan: http://www.downm.com/2004/12/05/locas3.htm
• Irving Coast: http://www.boston.com/news/world/europe/articles/2006/09/19/irving_coast_dumping_a_violation/

Points to explore
• Find people who are making a living from recycling other people’s waste, and compare them with increases in traffic.
• How does your country’s income from accepting shipments of foreign waste compare with what it incurs in health costs as a result?
• Spend time in any communities that have been affected by hazardous waste, whether domestic or imported.

Waste
Information
• See what waste can do - and what people can do about it: http://www.waste.ru/
• Why are plastic bags a long-lived menace? http://www.abc.net.au/science/features/bags/default.htm
• Zero waste is possible, says Argentina: http://www.greenpeace.org/international/news/zerowaste/Argentina.html

Points to explore
• Find the people who are making a living from recycling other people’s throwaways.
• How much does your government spend on getting rid of waste, or cleaning up its harmful effects?

Wider health issues
Information
• The WHO’s World Health Report 2007, and previous reports: http://www.who.int/whr/
• The UNEP/UNCHS/WHO 2002 report, Children in the New Millennium: http://www.who.ish/

Resources and ideas
Air pollution
Information
• Smoke - the killer in the kitchen, report by Practical Action, a UK-based charity, particularly dealing with women and children: http://practicalaction.org/ni/d-id-smoke_report_home
• General information on European/UK air pollution and policy at The National Society for Clean Air: http://www.nscs.org.uk/pages/whats_on Issue6sarc.htm

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• The UNEP/UNCHS/WHO 2002 report, Children in the New Millennium: http://www.who.ish/

Training materials
“Industrial production results in hundreds of millions of tonnes of wastes every year. These wastes include chemical by-products that are hazardous to human health and the environment because they are poisonous, eco-toxic, explosive, corrosive, flammable, or infectious. Sometimes wastes are shipped off illegally to faraway places, exposing unsuspecting communities to terrible dangers.”

Group exercise
Scenario
You are a journalist working in Latin America. You receive a phone call from a farmers’ union which claims that, in a remote agricultural town, 14 small children have been born with serious and similar limb disabilities in the past three years. It claims the disabilities are caused by nearby polluted land where chemical waste is still being dumped by international companies.

The government acknowledges the waste is being placed in the landfill. But a spokesman says it is done under strict controls led by highly skilled monitoring teams.

Task
Split into three groups: Print, Broadcast (TV or radio) and Online. Create an action plan for researching the story to find out:
• If there is any substance to the allegations
• How to prove the allegations
• How to balance the reporting
• How to make this controversial issue a gripping story with a human element

Group session
30mins
The tutor will oversee how each group meets its challenges and works as a team to prepare for a summary of its ideas. This will aid thinking laterally in convergence media.

Group feedback
25mins
Each group will summarise its tasks in an open discussion and be assessed by workshop colleagues. They will justify decision making or be able to change their decisions based on constructive comments. Print will think about sidebars, Broadcast will have a shot list of visuals ready and Online will show how it can respond with active reporting such as diaries, blogs and vlogs.
Individual exercises
- Write a story on the potential risks of commonly-used chemicals and the benefits they offer. This could be pesticides or fertilisers.
- Investigate what international treaties on limiting pollution your country has ratified, and how good it is at living up to them.
- Explore the idea of zero waste in a feature article. Could this work for your country?

LECTURE NOTES

KEY MESSAGES - Pollution
- Air pollution
  - Outdoor pollen causes 800,000 deaths per year
  - Smoky homes causes 1.6 million deaths per year
  - Solutions are expensive
- Water pollution
  - Leads to two million deaths per year
  - One in six people worldwide do not have safe water to use
- Chemical pollution
  - 70,000 chemicals on sale worldwide
  - 30,000 never tested for potential risk to people
- Land contamination
  - Industry and agriculture can contaminate land
  - Three-quarters of farmland in Africa is plagued with severe soil degradation
- Waste
  - Waste causes pollution
  - The US now recycles over one third of its waste
- Your job
  - Make sense of the subject
  - Explain different types of pollution, how they are caused and their effects on people
  - Ensure subject is easily understandable

KEY LEARNING POINTS
- Keep up to date on pollution
- Investigate claims before publication or transmission
- Team work helps sharpen the focus of each individual
- Different disciplines - print, broadcast and online - use the same material but in different formats
- An action plan helps organise work
- Coverage often involves sharing ideas and negotiating over key factors. This includes group evaluation

ADDITIONAL NOTES FOR TRAINERS & SUGGESTED LESSON PLAN

LESSON PLAN:

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CLASS SIZE: 24
TIME: 90mins

(These are estimates. Timings can change according to class size and duration)

AIM:
To teach the fundamentals of researching and preparing a story in different media. Each delegate will understand how differing disciplines arrive at a plan to cover a story.

OBJECTIVES:
- By the end of the session, the workshop will
  - Identify key points of a fictional pollution story
  - Discuss how to prove - or disprove - serious allegations about pollution and unexplained childhood disabilities
  - Demonstrate the ability to develop a strategy for reporting the story in each discipline
  - Deliver a strategy for print, broadcast and online

SECTION 2: REPORTING THE ISSUES

**CHAPTER 6**
Discussing sustainability

**Education for Sustainable Development - Sustainability**

Education at all levels can shape the world of tomorrow, equipping individuals and societies with the skills, perspectives, knowledge and values to live and work in a sustainable manner. Striking a balance between human and economic well-being, cultural traditions and respect for the earth’s natural resources depends on effective educational methods which foster respect for human needs and the way the Earth’s resources are used. Improving the quality and coverage of education and reorientating its goals to recognise the importance of sustainable development must become a world priority. Education for Sustainable Development must also reflect developments and reforms in education, particularly linked to the Dakar Framework for Action on Education for All, the UN Literacy Decade and the Millennium Development Goals.

Applying ESD requires partnerships among governments, academic and scientific communities, teachers, NGOs, local communities and the media.

The key messages:
- Education for sustainable consumption is a social strategy to enable people to take informed and responsible decisions and actions, now and in the future.
- Understanding sustainable development is the foundation for people to play their roles as conscious consumers and responsible citizens.
- Education is a critical complement to other social, cultural and economic policies, and for improving dissemination and implementation of new ideas and practices.

Other commentators think sustainability and capitalism are compatible. Jonathon Porritt is Chairman of the UK’s Sustainable Development Commission (UKSDC) and founder Director of Forum for the Future. He has observed: “Capitalism is basically the only economic game in town, and the vast majority of people (in both the rich and poor world) are content for it to remain so for the definable future; [and] learning to live sustainably on the
only planet we’ve got is a non-negotiable imperative if we want to avoid accelerating descent into resource wars, collapsing eco-systems and traumatic social and economic decline.204

Perhaps, if capitalism is inevitable, then the way we work it can be changed? Environmental commentator Sir Crispin Tickell has looked at world economics, and thinks capitalism could work for sustainable development if it operated on different assumptions. He says no-one would disagree with the statement by a well-known economist that the economy is a wholly owned subsidiary of the environment.205 In short without a healthy environment, there can be no healthy economy.

But there is a real difficulty in how to assess economic health. The ideologues of free trade like to suggest the price mechanism. But as another distinguished American once remarked: ‘Markets are superb at setting prices, but incapable of recognizing costs.’ Prices are indicators. But we have to make sure that they tell the truth about costs. A pricing system should include not only the traditional costs, but also those involved in replacing the resource, and the cost of the damage that use of the resource may do. In short, current market economics will not do. We need new systems of measurement and new definitions of wealth. We should heed the words of Oystein Dahle, former Vice-President of Esso for Norway and the North Sea, who once said: “Socialism collapsed because it did not allow prices to tell the economic truth. Capitalism may collapse because it does not allow prices to tell the ecological truth.”

Sustainability: who gains?
Apart from the question of whether and how we could achieve sustainable development, some people ask why we should. As journalists routinely ask: who will gain from this?

Suppose the world did find a way of living sustainably, continuing indefinitely as it is at the moment, without having to fear running out of resources. Some critics argue that this would be ideal for those who have enough already, because it would preserve their way of life. But it would do nothing for those in need - the pattern of development today is skewed in favour of the rich, so it is already unsustainable, so there is no point in trying to preserve it.

There was some support for this view in the annual State of the World report, published in 2006, by the Worldwatch Institute, which argues that the Earth does not have enough resources for everyone to attain Western living standards.206 The report says: “The world’s ecological capacity is simply insufficient to satisfy the ambitions of China, India, Japan, Europe and the United States as well as the aspirations of the rest of the world in a sustainable way.”207 At the time of the Earth Summit held in Rio de Janeiro in 1992, the first President Bush said: “The American way of life is not up for negotiation”. But unless the people of every nation do agree to negotiate on how to share the planet’s limited resources, sustainable development may become unattainable.

Resources and ideas
Economics of sustainable development
Information point
• What is sustainability? information at the Sustainable Technology Project: http://www.stepan.org/index.php?id=sustainabilityexplained
• A brief introduction to Our Common Future, the report of the commission chaired by the former Norwegian Prime Minister Gro Harlem Brundtland: http://brundtlandnet.esben.dk/brundtlandreport.htm
• Sir Crispin Tickell’s website: http://www.crispintckell.com/page0.html
• For Jonathan Porritt, see the Open Democracy site http://www.opendemocracy.net/home/index.jsp
• The UK Sustainable Development Commission (SDC): http://www.sdc-commission.org.uk/
• Ethical Performance is a newsletter reporting on socially responsible business: http://www.ethicalperformance.com/
• The UK Government’s website on Corporate Social Responsibility, designed to help UK companies to consider the economic, social and environmental impacts of what they do: http://www.societyandbusiness.gov.uk/
• Youth4Change on youth and sustainable lifestyles: http://www.youth4change.net/main/home.asp

Points to explore
• Which of the economic views is right – if any of them? Is there another way to allow everyone to lead lives which indefinitely become richer? Do we need another way to define wealth?
• Research the protection of the environment in countries which have rejected capitalism.
• Find out what the environmental record of business and industry is in your country – the indigenous capitalists and the foreign companies operating there.
• What would your economy look like if prices reflected all the environmental costs of goods and services on a “cradle-to-grave” basis?

Difficult questions
Information
• On equal rights to emit greenhouse gases, and the “Contraction and Convergence” proposal for sharing emission rights, see Mark Lynas’s piece in the New Statesman: http://www.newstatesman.com/2006/01/03/2001

Point to explore
• What is sustainable development trying to sustain? If we managed to achieve sustainable development, who would gain and who would lose?

Training materials
“The project, involving 50 rural households in Kajiado and Western Kenya, devised appropriate technology to reduce pollution in people’s kitchens. Results showed that the introduction of smoke hoods, eaves, windows and improved, fuel efficient stoves can reduce these damaging particles by approximately two thirds.” (Practical Action)

Group exercise
SCENARIO
Your editor decides to begin a campaign to show there is a way of improving a local environment with a wide ranging series of features. It is called ‘Ray of Hope!’ and it will detail how small projects can create positive changes to people’s lives. The thrust of the campaign is that, though the world is beset with problems, there can be solutions.

Task: Split into three groups: Print, Radio and Online. Create an action plan for researching the story to find out: One developmental problem that can be illustrated How to illustrate that problem How to illustrate one project that can solve the problem How to create a gripping story As How to humanise the piece without devaluing the people involved How to weave in how large organisations such as the UN or ASEAN help to try and solve the problem

GROUP SESSION
30mins
The tutor will oversee how each group meets its challenges and works as a team to prepare for a summary of its ideas. It is not necessary for delegates to be linked to their own discipline. This will aid thinking laterally in converging media.

GROUP EVALUATION
25mins
Each group will summarise its tasks in an open discussion and be assessed by workshop colleagues. They will justify decision-making or be able to change their decisions based on constructive comments. Print will think about sidesbars, Radio will think about use of interviews and actuality and Online will show how it can react with active reporting such as diaries, blogs and vlogs.

Individual exercises
• Interview an economist and an environmental activist about the compatibility of capitalism and sustainable development, then report what they tell you in the form of a debate.
• Write a feature setting out the ecological arguments for and against capitalism, and whether reforming it could make sustainability possible. What reforms would be needed, how could your government introduce them, who would gain and who would lose?

LECTURE NOTES
KEY MESSAGES
• For every problem, there is someone trying to find a solution for:
  - climate change
  - energy
  - pollution
  - water
  - fishing
  - species loss
  - population
  - poverty

• Your job
  - Make sense of the subject
  - Highlight key factors
  - Illustrate how key factors can be confronted and overcome
  - Identify how the story reflects a worldwide campaign to improve lives
  - Communicate stories in a factual and entertaining way

KEY LEARNING POINTS
• Keep up with latest developments about sustainable development
• Individuals’ stories graphically illustrate major issues
• Different disciplines - print, broadcast and online - use the same material but in different formats
• Thinking laterally to create a story that will attract an audience
• Covering a story often involves sharing ideas and negotiating over key factors, which includes evaluation

ADDITIONAL NOTES FOR TRAINERS & SUGGESTED LESSON PLAN
Class size: 24    Time: 90mins
(These are estimates. Timings can change according to class size and duration)

AIM
To teach the fundamentals of researching and preparing a story in different media. Each delegate will understand how differing disciplines arrive at a plan to cover a story.
OBJECTIVES
By the end of the session, the workshop will
• Identify key points
• Discuss how to approach the campaign story
• Demonstrate the ability to develop a strategy for reporting
  the story in each discipline
• Deliver a strategy for print, radio broadcast and online

LESSON PLAN

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CHAPTER 7 Asking the right questions

Education for Sustainable Development - Stakeholders
Sustainable development is an evolving concept – it aims to meet the needs of the present without compromising the needs of future generations. It is a moral precept as well as a scientific concept. It obviously concerns the protection of the environment and world natural resources. But it is also linked to peace, human rights, equity and culture.

Education is one of the most effective forces to bring about the changes in knowledge, values, behaviour and lifestyles required to achieve sustainability and stability within and among countries, and to guarantee democracy, human security and peace.

The complexity of sustainable development challenges requires a collective commitment from everyone, including individuals, communities, national and international organisations, governments and businesses. Each of us is an agent of change. We can individually and together work for a better world.

The key messages:
• Education for Sustainable Development is everyone’s business.
• Let us turn the idea of sustainable development into a reality for all the world’s people.
• Partnerships play a vital role in developing education for sustainability.

An investigative report, based on sound evidence, can attract attention to issues of long-term public interest. By acting as watchdog, a journalist can ultimately hold decision-makers accountable for their actions (or inaction).

However, if the subject under investigation is a controversial one, journalists in some countries may face extreme situations – from earning the title of hero to serving a prison sentence for defamation. The route to fame or fall can depend on whether you are asking the right questions of the right people, and whether you are presenting sound evidence.

Media professionals may find it useful in this context to explore and understand where decision-making lies in their nation’s social, economic, political, scientific or cultural environment.

National governments are responsible for the protection and wellbeing of their citizens. Nearly 200 countries operate 200 separate management systems for one planet – yet what happens in one place can rapidly affect other distant parts of the globe. Politicians can lead constructive thinking and mobilise action on sustainability. Regional, district and town governments also have an important role in raising awareness among their communities and of initiating political discussion at policy level.

Regional organisations and financial institutions include the African Union (AU), the Association of South-East Asian
In every country, we need to recognise that the world works like a single organism. When damage is done to one element, it may be causing effects on the other side of the globe. Examples include the way chemicals produced in the industrial world are harming polar bears. The consequences of even the smallest actions can have a wide ripple effect.

**Links**
- Asia-Pacific Economic Cooperation (APEC): http://www.apec.org/
- Association of South-East Asian Nations (ASEAN): http://www.aseansec.org/
- League of Arab States: http://www.arableagueonline.org/
- MERCOSUR: http://www.mercosur.int/misweb/
- Organization of American States (OAS): http://www.oas.org/

Training materials

“To enjoy healthy lifestyles, people require knowledge and skills combined with an environment that makes healthy choices possible throughout their lives.” (ASEAN)

**Group exercise 1**

Split into four groups. Take today’s papers – ensure they represent a full range. Look at the front page, inside news pages and the commentary pages:

- How can you turn these stories around to entail a sustainable developmental line that shows our impact on the Earth?
- How can you humanise the articles to tell a first person story about how you personally could improve your ways of living?

**GROUP SESSION**

20mins

**GROUP FEEDBACK**

15mins

Each GROUP will outline ideas in an open discussion and be assessed by workshop colleagues. Each person will justify decision-making or be able to change decisions based on constructive comments.

**Group exercise 2**

**GROUP SESSION**

One representative from each group will pitch their ideas to a trainer who will represent a news editor – a busy news editor who will want to hear very clearly why the news agenda should change.

**GROUP FEEDBACK**

10mins

Each group will outline ideas in an open discussion and be assessed by workshop colleagues. Each member will justify decision-making or be able to change decisions based on constructive comments.

**Lecture notes**

**KEY MESSAGES**

- Politics and sustainability
  - Global groups such as the UN or WHO
  - Regional groups such as the EU or ASEAN
  - National governments
  - Local governments such as district councils or village meetings
  - Individual voters

- Industry and business
  - Can sometimes be more powerful than a medium sized country
  - Can impact on energy, food output, natural resources, employment, pollution

- Your job
  - Make sense of the subject
  - Take today’s papers – ensure they represent a full range. Look at the front page, inside news pages and the commentary pages:
  - How can you turn these stories around to entail a sustainable developmental line that shows our impact on the Earth?
  - How can you humanise the articles to tell a first person story about how you personally could improve your ways of living?

**Group Feedback**

10mins

**Review/Reflect**

5mins

**Aims Q/A**

5mins

**ADDITIONAL NOTES FOR TRAINERS & SUGGESTED LESSON PLAN**

Class size: 24   Time: 90mins

These are estimates. Timings can change according to class size and duration.

**AIM**

To learn how to expand coverage

**OBJECTIVES**

By the end of the session, the workshop will:
  - Identify key elements in today’s papers
  - Identify which key elements can be expanded or changed or used to produce sidebars or special features
  - Be able to sell the idea to a news desk, keeping mind the readership

**LESSON PLAN**

<table>
<thead>
<tr>
<th>Detail</th>
<th>Method</th>
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<tbody>
<tr>
<td>Intro/Trainer</td>
<td>Lecture</td>
<td>Power Point</td>
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<td>Aims and Objectives</td>
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<td>Task 1</td>
<td>Workshops</td>
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<td>Task 2</td>
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<tr>
<td></td>
<td>Discussion</td>
<td>Flip Chart</td>
<td>10mins</td>
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**Intro**

What they know

**Key Issues**

- Communicate the key factors in clear manner

**Objectives**

- Update with latest developments about sustainable development
- Expand news stories to take in sustainable development issues
- Telling your own story as a first person narrative is an effective way of raising awareness
- Be aware of how hard news can be used for features or sidebars
- Explaining and ‘selling’ the story to your news editor/editor is an important skill

**Key Learning Points**

- Have the tools and facts to successfully ‘sell’ a story to a news editor.
Delivering warnings

CHAPTER 8

Importance and Priority of Education for Sustainable Development

“We have no longer a choice: either we adopt behaviours that respect sustainable development, either we stop polluting the environment, allow for renewal of natural resources and contribute to the improvement of the well-being of all, or sooner or later we sign our own death warrant.” Kōichiro Matsuura, Director-General of UNESCO.

Education for Sustainable Development should not be equated with environmental education. The latter is a well-established discipline, which focuses on humankind’s relationship with the natural environment and on ways to conserve and preserve it and properly steward its resources.

Sustainable development encompasses environmental education but sets it in the broader context of socio-cultural factors and the socio-political issues of equity, poverty, democracy and quality of life. Given the advanced stage of environmental initiative in support of ESD, it will be challenging to incorporate the other elements of sustainable development. However, these other pillars – society, environment and economics, with culture as an underpinning dimension – must be addressed and not subordinated to environmental concerns.

The key messages:
- ESD is not an option but an imperative.
- Giving a central place to the human being and his or her culture in ESD is one condition for a successful Decade of ESD.
- Living together and changing society through ESD is important for a viable future.

The warnings

The Club of Rome is a global think tank and centre for scientists, economists, businessmen, senior international civil servants and former heads of state, headed by Prince Hans-André of Denmark. As early as 1972, the Club published one of the best known and most criticised warnings of environmental crisis, entitled The Limits to Growth. It argued that resources were finite but that human population was not, and that therefore the world would sooner or later run out of raw materials.

In 1992, about 1,700 of the world’s leading scientists, including most Nobel laureates in the sciences, issued the World Scientists’ Warning to Humanity. It began: “Human beings and the natural world are on a collision course.”

The scientific community spoke up again in a Declaration from over a thousand scientists from the four great global research programmes, at Amsterdam in July 2001. They said: “Human activities have the potential to switch the Earth system to alternative modes of operation that may prove irreversible and less hospitable to humans and other life... the Earth’s system has moved well outside the range of the natural variability exhibited over the last half million years at least... The Earth is currently operating in a no-analogue state... the accelerating human transformation of the Earth’s environment is not sustainable. Therefore the business-as-usual way of dealing with the Earth’s system is not an option. It has to be replaced - as soon as possible - by deliberate strategies of management that sustain the Earth’s environment while meeting social and economic development objectives.”

The International Herald Tribune published, in 2004, an article by four leading politicians and scientists who said: “The Earth has entered the so-called Anthropocene - the geological epoch in which humans are a significant and sometimes dominating environmental force... Records from the geological past indicate that never before has the Earth experienced the current suite of simultaneous changes: we are sailing into planetary terra incognita.”

Later that year came a warning, not from a scientist but from a perhaps more unlikely source, a leader of the oil industry - Lord Dekker, chairman of the oil giant Shell. He said that unless carbon dioxide emissions were dealt with, he saw “very little hope for the world”.

The same year the Club of Rome published The Limits to Growth: The 30-year Update. Its publisher said: “The new book suggests that the central problem for the next 70 years will not be averting environmental decline - which the authors view as virtually inevitable - but containing and limiting damage to the planet and humanity. It’s too late for sustainable development, the authors conclude... (they) are far more pessimistic than they were in 1972. Humanity has squandered the opportunity to correct its current course over the last 30 years.”

Is it too late to act?

Nobody can claim there have been no warnings - and still they come. Most have suggested there is still time to change. But one eminent scientist disagrees. Professor James Lovelock, a Fellow of the Royal Society (the UK’s national academy of science), developed the Gaia Hypothesis, which suggests that the Earth functions as a single organism which maintains the conditions necessary for its survival. Writing in the UK’s Independent in 2006, he said the Earth was “soon to pass into a morbid fever that may last as long as 100,000 years... before this century is over billions of us will die and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable.”

Whether we choose to believe we have time or not, the scale of the problem is enormous - and difficult to communicate. All these crises are coming to a head at the same time; if the world were facing climate change alone, for example, it might be relatively easy: the technology is available, the priorities are clear. But it isn’t just the climate; it’s water, energy, population, and everything else, in a linked and complicated cycle.

Let’s take the biggest example of all: the Amazon rainforest, which as the WWF says has “become a global symbol of humanity’s dependence on natural ecosystems”. The Amazon affects our climate on a huge scale by absorbing solar energy, creating evaporation and thus clouds and rain. It is a major ‘sink’ for carbon dioxide, helping reduce greenhouse gases. And the water it discharges into the Atlantic represents 15-20% of the world’s total river discharge, perhaps enough to influence whole ocean currents.

A 2007 report by WWF says this extraordinary resource is now threatened by a cycle of climate change and deforestation. The world’s growing demand for agricultural crops, land for livestock and logging is already decimating the forest, along with the pressures created by local population expansion. The reduction of forest releases billions of tons of CO₂ into the atmosphere. Now, scientists believe that climate warming could reduce rainfall by over 20% causing the area’s temperature to rise by 2.5°C, creating forest dieback and bringing fire-prone bush in its place. This will increase even more carbon into the atmosphere, further influencing climate change – and so the cycle could continue if drastic action is not taken.

Moreover, radical changes can happen very quickly. Evidence from the distant past suggests the climate sometimes flipped from one stable system to a much colder (or hotter) one in as little as a decade. Leading environmental scientist Professor John Schellnhuber, of the UK’s University of East Anglia, believes there are a number of ‘tipping points’ which could trigger rapid and irreversible changes in some crucial natural systems.

The 30-year Update

The 30-year Update suggests that the problems we now confront will be lost and the prospects for sustainable development at all, with some respected scientists saying it’s a waste of time? These are all issues that many newspapers and other media will have to take a stance on, if they have not already done so.

Is it too late to act?

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Is it too late to act?
But there are still significant problems for journalists trying to tell the story. There are no easy answers; telling people what they are not ready to hear is never simple. But there are some pointers which may be useful:

- Never over-write the story. The prospects for avoiding crisis and building a sustainable world are dire enough already, so the story does not need exaggerating. The more sober and restrained and factual your copy is, the greater the chance it will be believed.
- At the same time, do not pretend the crisis is not real. Tell your audience that they can look forward to a future of surprises and hard work, rather than gently and comfortably adjusting to predictable and manageable changes.
- Set the story in context. Telling your audience that oil is running short is helpful. Telling them that climate change would make it dangerous to burn any new resources is a lot more helpful.
- Understand why many people do resist the idea that a range of converging environmental crises is about to burst upon us. The last 60 years have been (in the developed countries, and in many of those now joining that group) an unprecedented period of growth and optimism. Accepting that this will change is not easy.
- Do not frighten people unnecessarily about how awful things could become for them when we start to act in favour of sustainability - we all have to change, but the changes need not be too painful, and may even give us a better life than before.

A difficult story to tell

Stories announcing that 'The End of the World is Nigh' usually find someone to publish them. However, unless reports are based on sound and verifiable facts, audiences used to the constant stream of bad news stories will fairly soon get tired of them and stop believing anything the authors say; that is the dilemma for many journalists writing on sustainable development. For others, with a readership seeing their economy booming and much higher standards of living within their grasp, it will be difficult to put across the need for caution amid the noise of (unsustainable) development.

The facts are sound, the science is persuasive. But there is still a credibility gap to be crossed – many audiences are very sceptical.

It can be helpful to know how to show audiences that, this time, the warnings are real and the crisis imminent. In some parts of the world with ready access to media reporting on the subject, attitudes are beginning to change: people are aware that climate change is happening and threatens us all, even if they are not yet thinking of doing anything about it.

In parts of the developing world, fewer people will have heard the warnings. Those living in rural poverty are often concerned with survival. Those living in smog-filled cities, working in the very factories which are most polluting our skies, may feel their lungs suffering, but are not in a position to see the wider picture. It is perhaps a question of putting across the message to their governments, to the companies which operate in unsustainable ways, and to a burgeoning middle-class which could begin to question the relentless drive towards Western ways of living. It will be important to respect the culture and traditions of every country, at whatever stage of economic development.

One problem is the slowness of movement towards obvious crisis. Everyone reacts more quickly to an instant emergency than to one that takes time to develop. With a slowly-developing emergency, it’s impossible to identify a point at which people will feel they simply must act. David Clark, of the Massachusetts Institute of Technology, said: “Things get worse slowly. People adjust. The problem is assigning the correct degree of fear to distant elephants”.

Perhaps some people have just got too used to hearing warnings, even sober and well-founded ones? The developed world has been reading and forgetting about the world’s diminishing resources for decades. It is now crucially important that everyone, everywhere, hears and understands the potential impact of what’s happening to our Earth.

Resources and ideas

Is it too late to act?

Information
- Club of Rome: http://www.clubofrome.org/
- World Scientists’ Warning to Humanity: http://doaoy.org/sciwan.htm
- The Anthropocene epoch in the International Herald Tribune: http://www iht.com/articles/2004/01/20/eduwall_e63.php
- The Take Part Too web-based project focusing on democracy, communication and negotiation: http://www.takeparttoo.org

Points to explore
- How long will your country’s raw materials and key resources last? What happens when they run out?
- Ask your national academy of science for its views on James Lovelock’s prediction. Ask it what it predicts for your country in 20 years’ time.
- Run a competition for school and university students: ask them how they would try to prevent Lovelock’s prediction coming true.

Training materials

“World leaders say climate change is one of the most serious threats facing humanity. Are they right? If they are, who is going to do what about it? Who will benefit and who will pay?”

(Open Democracy website)
CHAPTER 9

Selling the story

The Education for Sustainable Development story

For citizens to be able to face the challenges of the present and future, trained decision-makers will:
- acquire competences and skills that are critical, creative, communicative, reconciliatory and solutions-orientated
- respect the Earth and life in all its diversity
- commit to democracy, the free-flow of information, inclusion and peace.

Educators and learners must:
- reflect critically on their own communities
- identify non-viable elements in their way of living
- become empowered to develop and evaluate alternative visions of a sustainable future
- assume responsibility for creating and enjoying a sustainable future
- ensure access to competing schools of thought
- work collectively to fulfil these visions.

The key message:
- What will be your next action in favour of sustainable development?

One of the hardest tasks facing a journalist has nothing to do with the difficulties and challenges of getting a story: it is persuading your editor to run a story you think is important. This chapter offers some pointers to meeting the demands of readers and editors:

Appealing to readers, viewers, listeners and editors:

Jargon and scientific complexity: our job is to present what we learn about every story within a context that is relevant to our audience, and true to the intent in which the information was imparted. We do not have to be experts or specialists in any particular field to accomplish this - in fact it is often better if we are not, because then we approach a story from the point of view of the news consumer, not as an expert. If you take this approach, the likelihood is that a news story will come across free of jargon and in the vernacular language of the local community.

Keeping it simple not only makes for a good story, but also for a good pitch to the editor. As soon as a story pitch takes longer than it would take to present the facts on the page or in a broadcast, the editor will lose interest.

As an exercise, count the number of times the word “sustainable” appears in the story you are preparing. The more you repeat the phrase, the less you will have explained and the more difficult it will be to sell your story. This is because the term “sustainable” is laden with meaning that can only be understood and appreciated if it is unfolded and described. Take a look at the two examples below. In the first, the story appeals to a policy person, someone familiar with terminologies and the subject matter.

In the second, an attempt is made to introduce the concept by first drawing in the news consumer with a play on words (neck-deep in trouble), a statement of universal acceptance (local flooding) and then a simple explanation toward problem solving (the role of Education for Sustainable Development).

Neither story is complete, but both highlight the importance of drawing in the audience and then beginning the gentle process of informing.

Example 1

Sustainable development encompasses sustainable environmental education but sets it in the broader sustainable context of socio-cultural factors and the socio-political issues of equity, poverty, democracy and quality of life.

The community elders report that they are aware of the flooding plains, which they use for grazing cattle during the dry season. The sugar manufacturer which pushed them off their land in 1978 claims that the floods are worsening due to overgrazing. A neighbouring community has confirmed that the rivalry for pastureland started when the new settlers encroached upon their land in 1978.

Example 2

If you take water for granted, then be prepared to be neck-deep in trouble. Recent flooding in our area has heightened awareness of a problem that may be as much about lack of knowledge as nothing to do with the difficulties and challenges fit into more than one category and can deal with the subject from a fresh angle. For example:
- water could be reported on from an international relations angle, where water resources cross borders
- energy might be covered in the context of the environmental impact of nuclear or fossil fuels
- population growth might be about people adopting children as opposed to adding to an already crowded planet
- species loss might include the impact on the economy of the loss of eco-tourism or the agricultural impact of scarce pollinators.

All these could be stories for local reporters or for journalists who cover specific areas like diplomacy, health, or agriculture. Even if an initial report misses the sustainable development angle, follow-up reports could keep the story alive and deepen your audience’s understanding of a topic. This is also an approach that can resonate with an editor.

Appealing to editors

Try to see the world through the eyes of an editor. We naturally want our story to run, and do not always understand the pressures it would take to present the facts on the page or in a broadcast, the editor will lose interest.

Addressing these questions is of course no substitute for telling a good, relevant story, and the questions do not apply to every story. But sustainable development is nevertheless often about new ways of producing or doing things. When you are writing about the problems described in Section One of this resource kit, keep the questions in mind to help you respond to the issues that are uppermost in the minds of your community.

Find a new angle: Think about a story that could have a sustainable development slant, without having “sustainable development” as its obvious focus. Many stories about the Earth’s environmental challenges fit into more than one category and can deal with the subject from a fresh angle. For example:
- water could be reported on from an international relations angle, where water resources cross borders
- energy might be covered in the context of the environmental impact of nuclear or fossil fuels
- population growth might be about people adopting children as opposed to adding to an already crowded planet
- species loss might include the impact on the economy of the loss of eco-tourism or the agricultural impact of scarce pollinators.

An argument that...
• what is the competition doing?
• are there financial consequences or benefits to running the story or not running the story?
• what is the follow-up?

Good copy sells, relevance sells even more. First and foremost, your reports must meet the highest standards of journalistic excellence, possessing the hallmarks of good reporting: fairness, balance and accuracy. Good journalism is also about storytelling based on factual evidence. The final ingredient is relevance - contextualising a story for your audience. This is important in all journalism, but particularly when reporters move into specialised areas of reporting like sustainable development.

It is not enough to do one story, for example, about a plan for a new beachfront resort. Who are the winners? The losers? What is the impact? A beachfront resort may bring jobs and other forms of economic prosperity to a community, but what will its impact be on traditional professions, such as fishing? Guests at the resort will want to taste the local fare, so ensuring development is sustainable for the community and the environment that supports it is critical information for all the stakeholders.

Group exercise 1

GROUP SESSION 20mins
Split into four groups. Take today’s papers - ensure they represent a full range. Look at the front page and page three.

• How can you turn these stories around to entice a developmental or environmental angle?
• How can you turn these stories around to entice a developmental or environmental angle?
• How can you turn these stories around to entice a developmental or environmental angle?

Know your newsdesk

Work with editors and fellow reporters to explore ways in which new angles and approaches can be included or added to a story plan. Is there a sustainable development angle that is being overlooked? Even if a story breaks, there is always interest in ways in which to keep it alive. Take a look at how a story might evolve over days and even weeks. Stories on the economy, for example, often begin with a government announcement, but are then expanded on over the coming days by looking at ways in which the economic data reflects changes in the society, opportunities for the future or preparations for rough times ahead.

Resources and ideas

Readers

Information

• Page of hints for environmental journalists at the UNEP’s GRID-Arendal centre in Norway: http://www.grida.no/Activities.aspx?m=38

• SciDevNet, the Science and Development Network, has produced a helpful e-Guide to Science Communication: http://www.scidev.net/ms/sci_comm/


• Some universities provide lists of experts available to talk to journalists through their research or to give background on topical stories – find out locally.

A site for young reporters, with environment information: http://www.youngreporters.org/.

Editors

Information

• Tourism Concern is about ethical tourism, and gives some idea of the large and growing market, which will be hungry for coverage of sustainable development: http://www.tourismconcern.org.uk/

Points to explore

• Talk to business and industry associations, chambers of commerce, groups of importers, and find out from them which foreign companies are operating in your country. Do they have an interest in sustainable development?

Training materials

“Scientists do not share their findings of scientific research about local resource management … in the language that people understand. They connect globally but get disconnected locally.”

(Anil Gupta, Honey Bee Network)

Group exercise 2

GROUP SESSION 20mins
One representative from each group will pitch their ideas to another member of the group, who will represent a news editor - a busy news editor who will want to hear very clearly why the news agenda should change. The trainer may prompt the dialogue.

Group feedback

10mins

Each news editor ‘pitch’ will be assessed in an open session. Each person will justify their decision-making or be able to change decisions based on constructive comments.

LECTURE NOTES

KEY MESSAGES

• Dealing with balance
  • Get the facts correct
  • Understand work pressure
  • Persuading editors to run a story
  • Deadlines
  • Word count
  • Coping with different levels of understanding among colleagues and managers

• Dealing with readers/audience
  • Stay away from jargon
  • Think laterally
  • Three guidelines to interest readers/audience
    • Will it make me richer?
    • Will it make me healthier (safer)?
    • Will it have an effect on my children?

• Your job
  • Know why you want to write your story
  • Be aware of the pressures on balance
  • Be aware how to approach your audience
  • Communicate stories in a factual and entertaining way

KEY LEARNING POINTS

• Keep up with latest developments about sustainable development
• Think laterally and see how stories not specifically about sustainable development can be used as a peg
• Think how worldwide or regional stories can be used as a peg for localised stories
• Be aware of how hard news can be used for features or sidebars
• Have the tools and facts to successfully sell a story to a line manager or news editor

ADDITIONAL NOTES FOR TRAINERS & SUGGESTED LESSON PLAN

Class size: 24
Time: 90mins

(These are estimates. Timings can change according to class size and duration)

AIM
To learn how to expand coverage

OBJECTIVES
By the end of the session, the workshop will:
• Identify key elements in today’s papers
• Identify which key elements can be expanded, changed or used to produce sidebars or special features
• Be able to sell the idea to a news desk keeping in mind the readership

LESSON PLAN

Detail

Method
Resources
Time

Intro/trainer
Lecture
Power Point
5mins

Intro/group
Discussion
Flip Chart
10mins

Aims/Objectives

Review/Reflect
Open discussion
Flip Chart
5mins

What they know

Task 1
Workshops
Handouts
Newspapers
20mins

Group Feedback
Discussion
Flip Chart
15mins

Task 2
Workshops
20mins

Group Feedback
Discussion
Flip Chart
10mins

Review/Reflect
Discussion
5mins

Aims/Q/A

Lecture
Power Point
5mins
CHAPTER 10

SECTION 3

A DIFFERENT FUTURE

Positive examples

Photographer: Wong The Yuan © UNEP/Still Pictures

Good Practices and Education for Sustainable Development

The UN Decade of Education for Sustainable Development aims to involve individuals in the global movement for sustainable development.

Good practices:
- focus on the educational and learning dimensions of sustainable development
- develop and create solutions to common problems
- demonstrate a tangible impact on living conditions and quality of life
- improve living conditions, integrate economic, social, cultural and environmental components
- provide models for projects across disciplines and communities
- offer some elements of evaluation, by both experts and the people concerned.

The vision has no single starting or ending point because there is no “right” way to do it, but activities will stem from the same principles that underpin a commitment to sustainable development.

The key message:
- The vision of quality education for sustainable development is an approach not a recipe.

Most stories are easier to write when you can picture what they are about. This chapter provides a few examples of the ways people around the world are trying to tackle some of the problems outlined earlier – they are often small projects, but give us hope that change is possible. At the end of the chapter there are places to find more case studies, but you may also be able to find examples locally.

Climate change

The German development corporation GTZ, which works to promote sustainable development worldwide, has found a way to harness the Sun to provide a water supply for people, livestock, and irrigation: it has developed photo-voltaic water pumps. These pumps are as efficient as small diesel pumps, need no fossil fuel and emit no carbon dioxide in use. They are also ideal for remote places and need neither maintenance nor anyone to operate them. The solar pumps cost about three times more than a comparable diesel version, but running costs are negligible, so they quickly pay for themselves. GTZ’s pumps are working so far in Argentina, Brazil, Chile, Ethiopia, Indonesia, Jordan, the Philippines, Tunisia and Zimbabwe.

Energy

Sweden runs a biogas-powered passenger train between Linköping, south of Stockholm, and the Baltic coast city of Västeråk. Biogas, obtained from decomposing organic matter, produces much less carbon than traditional fossil fuels. Sweden is believed already to have about 800 buses and thousands of cars running on a mixture of petrol and either biogas or natural gas. To encourage the use of biogas, several incentives are on offer to people with cars that can use it: parking is free in many areas, companies pay less tax on biogas cars for their employees, and biogas itself is tax-free, so it costs 20-25% less than petrol. There are plans to introduce biogas trains in India.

Water

In the Indian state of Maharashtra, small-scale farmers depend on infrequent rainfall to maintain their fields and livestock. During the dry season drinking water is so scarce that supplies are regularly trucked into thousands of villages. The Indo-German Watershed Development Program has funded 145 village-based watershed development projects. The Program requires villagers to agree to temporary bans on tree-cutting and grazing on land designated for regeneration.

For example, Darewadi village in Maharashtra’s most drought-prone district was by 1996 on the verge of becoming a desert. Rainfall supported only three to four months of agricultural work a year, so villagers had to migrate for seasonal work. In Darewadi, the Program’s work has included tree and grassland planting, sustainable crop cultivation and the building of simple water harvesting and irrigation systems such as hillside contour trenches and rainwater harvesting dams. By 2001, land under irrigation had increased from 197 to 342 hectares, with maize, wheat and vegetables among successful new crops. Grass fodder for livestock increased by 170%. The local water table has continued to rise, as have supplies of livestock fodder and the area of irrigated land.

Fishing

By the early 1990s, overfishing of Fiji’s coastal waters meant many rural people were going short of both income and protein. About a third of rural households were living below the official poverty line. Locally managed marine areas (LMMAs) were introduced, which combine traditional local conservation practices with modern monitoring methods. The aim is to improve local incomes by replenishing local waters.

The kai MONO, a clam found in shallow mudflats and seagrass beds, is culturally important to the people of the village of Ucunivanua and is also a food staple and source of income. The villagers began working with the University of the South Pacific and after two years of training in environmental education and community planning, set up a 24-hectare tabu (closed) area, so the clam population could recover and more larvae would also settle in adjacent fishing areas. Between 1997 and 2004 the number of clams increased dramatically in both the tabu and nearby areas. The experiment has been extended indefinitely, the kai MONO has once again become abundant, and village incomes have risen significantly. The scheme’s success has led to the adoption of LMMAs throughout Fiji, Asia, and the Pacific region.

Resources

Information
- Also see a look at the Global Plant Clinic: http://194.203.77.76/globalplantclinic/

Climate change
- GTZ, the German development corporation: http://www.gtz.de/en/

Energy
- See: http://www.handsontv.info/series7/01_energy_wise_reports/report4.html

Species loss

By the early 1980s, ecosystems were rapidly deteriorating in northern Namibia, where there was rampant poaching of elephant ivory and rhino horn and severe over-use of drought-prone land. Wildlife populations, including the desert elephant, endangered black rhino, zebra, lion, impala and oryx, were plummeting.

The country developed an anti-poaching programme, using local people as community game guards and working with local NGOs to promote an increased sense of stewardship over wildlife. Following independence, the Government created nature conservancies – legally defined areas within the state’s communal lands – where the sustainable use of animals for game meat, trophy hunting and tourism is allowed. Namibia’s establishment of these conservancies is one of the largest-scale demonstrations of what is called ‘community-based natural resource management’.

Populations of elephant, zebra, oryx, and springbok have now risen several-fold in many conservancies because poaching and illegal hunting have fallen. People are being helped out of poverty, with more than 95,000 Namibians benefitting: gains include jobs, training, game meat, cash dividends and social benefits like school improvements and water supply maintenance funded by conservancy revenue.

Pollution

More than two billion people are without grid-connected electricity and in India, over 100 million families rely on kerosene lamps which give poor light and emit smoke which can damage health and add to air pollution. Many accidents and deaths have occurred when kerosene lamps have been knocked over.

An Indian businessman from the solar industry has developed a low-cost solar lantern. The industry had previously concentrated on more commercial products, ignoring the needs of those in remote rural areas, which had not been considered commercially viable. The new solar lamp can provide a bright, constant white light for up to three hours. It costs just UK£19 (1,500 rupees), so most people can afford it, but there is a scheme to lend the money to those below the poverty line. There are many benefits: meals times are better as insects can be kept away from the food; farmers can carry on working after dark; and children are able to continue with their studies safely, using a good quality light. And a serious threat to health is removed.

http://www.grida.no/wrr/046.htm
http://www.ashdenawards.org/winners/nest
http://www.grida.no/web/947.htm
http://www.grida.no/wrr/047.htm
http://www.grida.no/en/9777/76/globalplantclinic/
http://www.handsontv.info/series7/01_energy_wise_reports/report4.html

http://www.gtz.de/en/
http://www.grida.no/web/947.htm
http://www.grida.no/wrr/047.htm
http://www.grida.no/en/9777/76/globalplantclinic/
http://www.handsontv.info/series7/01_energy_wise_reports/report4.html
Training materials

“Cities in ASEAN countries are in varying stages of development but they face somewhat similar environmental problems, viz. air pollution from industries and vehicles, absence or shortage of sewerage and drainage infrastructure and inadequate solid waste management facilities. These problems often are aggravated by rapid industrialisation and urbanisation, resulting in ever-increasing demand for water and energy as well as solid waste management infrastructure.” (ASEAN document)

Group exercise

SCENARIO
You work for a news organisation in a South-east Asian country fraught with political and religious problems. You have been given the job of creating a special Schools Section to deal with the environment. The managing editor says you must give the facts but also, importantly, show how the children see the environment. The managing editor says you must give the facts but also, importantly, show how the children see the environment. The managing editor says you must give the facts but also, importantly, show how the children see the environment.

The goals are
- Children between eight and ten years old
- Boys and girls
- Mixed religion schools that are secular in design

GROUP SESSION
30mins
Split into four groups
Each group will consist of
- News Editor: find four follow up stories for the next day
- News Reporter: explain how you would report this task
- Picture Editor: explain how you would illustrate this story
- Sub Editor/Bill Poster Designer: how you would create headlines and a street bill poster
- Web Editor: how would you create inter activity aimed at children

The goals are
- Pitch a story or group of stories to children.
- Let the children see their views

GROUP FEEDBACK
20mins
Each group will outline ideas in an open discussion and be assessed by workshop colleagues. Comments will be used to improve group focus and results.

LECTURE NOTES

KEY MESSAGES
- There are many positive examples of the ways people are tackling the problems
- Helpful tips
  - Do not over-write a story or make it too sensationalist
  - Explain context and how environmental issues fit together
  - Understand reasons for audience resistance
  - Keep away from overwhelmingly gloomy forecasts.
  - Explain solutions
- Your job
  - Make sense of the subject
  - Be aware of the problems of reporting on the subject
  - Be aware of helpful ways to approach the stories
  - Communicate stories in a factual and entertaining way to children, for children and by children

ADDITIONAL NOTES FOR TRAINERS & SUGGESTED LESSON PLAN

Class size: 24
Time: 90mins
(These are estimates. Timings can change according to class size and duration)

AIM
To teach delegates how to create a feature campaign based on children’s attitudes to environmental issues.

OBJECTIVES
By the end of the session, the workshop will
- Identify key elements of a story
- Identify the audience
- Identify which key elements can be used to launch a children’s campaign on the environment
- Be able to deliver a consensual outline of how to aim the stories and features
- Use visual representation
- Think laterally for broadcast and online
The Decade of Education for Sustainable Development (2005–2014)

In December 2002, resolution 57/254 on the United Nations Decade of Education for Sustainable Development (2005–2014) was adopted by the United Nations General Assembly. UNESCO was designated as lead agency for the promotion of the Decade.

The Decade aims to integrate the values inherent in sustainable development into all aspects of learning to encourage changes in behaviour which will enable a more viable and fairer society for everyone.

During the Decade, Education for Sustainable Development aims to enhance five kinds of fundamental learning: learning to know, learning to do, learning to be, learning to live together, and learning to transform oneself and society.

The Decade addresses the way we live, our value and our behaviours. Because of that, ESD is not a subject to teach, but rather cuts across many subjects. It also means that education must be of a high quality, not merely passing on knowledge but changing the way people think. The principle of sustainable development must find its place in children’s schooling. Higher education, non-formal education, the media, and community-based learning activities, for example. This means education will have to change so that it addresses the social, economic, cultural and environmental problems we face in the twenty-first century.

The key messages:

• Let us improve quality of education for achieving sustainable development.
• A decade of ESD will contribute to building a better world for us and future generations.
• ESD contributes to facing challenges of the present and future and making relevant decisions for a viable world.

When you are writing about a sustainable world, you will probably be asked what such a world would be like - how different will it be from this one, and what impact will it have on our lives? We already know what some of the elements of that world will have to be. What we do not know is what the cumulative impact will be of those different elements – and of others we cannot yet foresee.

We can describe some of the physical differences between our world and the one we are aiming at, but we probably cannot imagine how our thinking will change, or be forced to change. This chapter presents ideas of what we hope to achieve and you are invited to evaluate whether or not these are realistic in relation to your local context.

Observable changes

Climate and energy: the sustainable world relies far more on renewable energy like solar, wind and wave power. It uses energy much more efficiently, doubling its use where possible (for instance, producing both electricity and heat). It saves energy (for example, by not making unnecessary journeys). A sustainable world will not need to find alternative energy sources for every purpose that consumes energy now, because it will change the way we do things. It is composed of self-sufficient communities, where people can find what they need within easy reach and do not have to travel long distances for work, leisure or anything else, and where production - of food for example - is nearby. It values privacy much less than this generation, so public transport is seen as the norm and private vehicles are regarded as anti-social. There is much more sharing of expensive equipment and much less stress on acquiring ever more private property.

Water: the sustainable world that ensures everyone’s basic needs are met before anyone’s desires can be satisfied. It uses technology to make every drop of water count (despite irrigation, for instance, rather than traditional methods). It recognises the need for the natural world for water, so it conserves wetlands. It uses groundwater only as fast as the aquifers can be replenished naturally from the surface.

Resource depletion: the world will recognise that the environment does not respect national frontiers, which are therefore always treated as less important than environmental protection and human survival. The global commons (oceans and the creatures that live in them; forests; the atmosphere; the entire biosphere that supports life) are protected by international agreements which are strictly enforced.

Loss of species: there is rigorous protection of so-called “biodiversity hotspots”, the tropical areas which contain the richest mix of species. Elsewhere, the destruction of habitats is strictly controlled and where possible avoided. International research is focusing on cataloguing the Earth’s species and understanding both their potential value to humans and their place in the natural order: taxonomy (classification of species) receives the funding and political backing it has never had before.

Pollution: in the sustainable world, waste becomes an opportunity and not a problem. Products are designed “from cradle to grave”, so that they can be dismantled and their components re-used. Recycling is the norm, and throwing anything away is seen as abhorrent. The energy revolution will have solved much of the problem of air pollution, and both industry and agriculture will have found ways to stop polluting water sources.

Population and poverty: in this new world, we have recognised that being poor is one of the main reasons why people have large families - so poverty has been consigned to history. Everybody is guaranteed a basic standard of living, with adequate food, water, sanitation, housing, health care and education. Ending poverty implies a radical reform to the world’s trading patterns. There is no compulsion to limit family sizes, but contraception is available to all couples who want it.

It is a daunting list – impossible? Perhaps. It is not the sort of thing to try on a tough news editor without very careful preparation. However, virtually everything on it is practically possible. The problems are political and cultural. The sheer improbability of our ever being able to do everything on the list is a reminder of the conceptual shift the world will have to make to move to a sustainable path.

New ways of thinking

The psychological shifts we will have to make to build a sustainable world are staggering.

First, we will have to recognise that we are an interdependent world. New thinking means new economics: a system that includes the environment in the way it calculates the cost of products and services - recognising the value of what Nature gives us and does for us, and including that in the balance sheet. It means a new value system, valuing ourselves and others for what each of us can do to enrich life; a system which puts quality of life above gross national product. It demands a society which looks after the environment so that the economy can thrive, not the other way round.

One of the radical ways to build an economy tailored to real needs could be to set a maximum wage. Some countries set a minimum wage as a safety net, but politics has shown no interest in limiting the amount people can earn at the top of the scale. Yet Andrew Simms, policy director of the New Economics Foundation, argues that highly unequal societies tend to fall apart, the opposite of sustainability. 107

Professor Norman Myers, the British environmentalist and biodiversity expert, is clear what he understands by new thinking: “It’s new forms of energy for a start... It’s curbing population growth, including in the developed countries, because population growth in [these] is more of a threat to the environment than similar growth somewhere like Bangladesh... New thinking is remembering that the winds carry no passports, and that no island is an island any more. Nowhere is isolated from the rest of us - unless we help China not to build the 550 coal-fired power stations it’s planning, we’ll all be in trouble... we face threats which are unprecedented in character, scale and gravity. To have any chance of scaling back the damage they will cause, we have to move immediately to a wartime footing - economically, politically, institutionally and legally.” 108

We must take into account future generations. The zoologist Colin Tudge writes of what he calls the “desperately trivial twinklings of time” and argues that we have to find a way to think not just over the next four or five years of the political cycle, but for the long term. “When we take the long view”, he writes, “we can see that matters of huge consequence can take many thousands or even millions of years to unfold... how momentous, and long-lasting, it can be to do the kinds of things that we do now as a matter of course: building highways across continents, removing forests, diverting rivers.” 109

The way we perceive our world and our societies will need to change radically. In the concluding pages of the Club of Rome’s Limits to Growth: The 30-Year Update, the authors write of five tools they say are “essential characteristics for any society that hopes to survive over the long term” The tools are: visioning (or imagining), networking, truth-telling, learning - and loving. That’s not a word you hear in too many newswires. New thinking will probably be full of surprises, even for journalists.

107 http://www.neweconomics.org/energy/
108 From an unpublished interview with environmental journalist Alex Kirby
A sustainable world
Information
• UNEP’s freshwater portal: http://www.unep.org/themes/freshwater/
• UNEP GEO Yearbook’s section on energy and air pollution: http://www.unep.org/geo/yearbook/jb2006/054.asp
• UN Population Fund (UNFPA): http://www.unfpa.org/
• UN Development Programme (UNDP): http://www.undp.org/, is a good resource on poverty
• IUCN is an authoritative source on the threats to species and their habitats: http://www.iucn.org/
• The Global Commons Institute campaigns for atmospheric emission rights to be shared equally worldwide, but its argument can apply to other areas as well: http://www.gci.org.uk/
• The World Resources Institute, and especially its Earthtrends page: http://www.wri.org/
• The Association for the Conservation of Energy: http://www.ukace.org/
• Earth Charter Initiative: http://www.earthcharter.org/
• Make Poverty History campaigners’ view: http://www.makepovertyhistory.org/
• The New Economics Foundation: http://www.neweconomics.org/gen/
• The New Economics Foundation’s Happy Planet Index: http://www.happyplanetindex.org/list.htm

Points to explore
• Draw up your own scenario of what a sustainable version of your country would be like, and see how your readers react
• Talk to scientists and find out how sustainability could actually improve your readers’ lives
• Interview a government minister on the country’s plans for sustainability

Group exercise
INTRODUCTION 5mins

INDIVIDUAL TASK 10mins
Participants will draw up a list of actions needed to help their own country move towards a more sustainable future in relation to a resource issue specific to their country e.g. water, pollution or climate change. Individuals will write the Challenges associated with moving towards a sustainable future on a yellow piece of post-it paper and the Solutions to these on a green piece of post-it paper.

GROUP TASK 30mins
The Challenges and Solutions will be collated on a flip chart by the trainer. Discussion of the key challenges and the responses to these will take place in groups allocated to specific challenges. This will allow participants to consider the key challenges in the move towards sustainable development and examine the range of Solutions identified.

GROUP FEEDBACK 20mins
A spokesperson from each group will report back on his/her group’s response to the solutions identified. Individuals will be given the opportunity to respond to the issues raised by the groups and explain and expand on the solutions they devised.

LECTURE NOTES
KEY MESSAGES
• The future
  - Each problem has a solution
  - Energy/climate/water/pollution/resources
  - Population/poverty/species loss
  - Problem of mental attitude
  - Problem of politics

• New ways of thinking
  - Interdependent and not independent
  - New economics that include the environment
  - Value on nature
  - The long term

• Your job
  - Understand the key pressures on both the planet and your own country
  - Communicate these pressures in an easy to understand manner and format
  - Explain solutions
  - Explain difficulties of solutions

KEY LEARNING POINTS
• Stories are attractive if they are localised
• Illustrations and visuals add a story
• Local sources are vital
• Working as a group can mean sharing ideas and evaluating each other

ADDITIONAL NOTES FOR TRAINERS & SUGGESTED LESSON PLAN
Class size: 24
Time: 90mins.
(These are estimates. Timings can change according to class size and duration)

AIM
To think about the future and how it can be reported in one’s own culture.

OBJECTIVES
By the end of the session, the workshop will:
• Identify key problems
• Identify solutions to key problems
• Identify strengths and weaknesses in colleagues’ approach to the task

LESSON PLAN
Detail Method Resources Time
Intro/trainer Aims/Objectives Lecture Power Point 5mins
Intro group What they know Discussion Flip Chart 15mins
Review Key points Lecture Flip Chart 5mins
Individual Task Workshop Post Its Flip Chart 10mins
Group Task Workshop Post Its Flip Chart 25mins
Group Feedback Discussion 20mins
Review/Reflect Lecture Power Point 5mins
Summary Q/A Lecture Power Point 5mins

Training materials
“If we want to survive in the future without a huge environmental and humanitarian crisis, our best hope is to stop and work with natural processes, rather than trying to conquer nature.”
(Centre for Alternative Technology)
Appendices

Glossary

A quick reference guide to frequently-used words and terms.

Acid rain
Damage caused to forests, lakes, rivers and other wild areas by rain and snow containing abnormal levels of nitric and sulphuric acid, produced by the burning of fossil fuels.

Adaptation
A policy which involves accepting that climate change is happening, and that humans should try to adapt to its impacts, for example by developing drought-resistant crop varieties (and see Mitigation).

Anthropocene epoch
The present geological era, in which many scientists say humans are a significant and perhaps the decisive force in shaping the planet.

Biodiversity
The variety of all forms of life.

Biomass
Organic material such as plants and wood which can be used as fuel to produce energy, or in industry.

Brundtland Commission
The World Commission on Environment and Development, chaired by the former Norwegian Prime Minister Gro Harlem Brundtland.

Bushmeat trade
The trade in meat of wild species, particularly in Africa: it is one of the principal threats to the survival of species like gorillas.

Carbon capture/sequestration
A range of techniques for trapping carbon dioxide (CO₂), the main greenhouse gas produced by human activities, and storing it usually underground or beneath the sea instead of allowing it to escape into the atmosphere.

Clean combustion
Techniques for burning coal (the most abundant fossil fuel) more cleanly than in traditional methods.

Climate change
Used to describe the way in which human activities are interacting with natural climatic variations. It is a more accurate term than “greenhouse effect” (which is entirely natural, otherwise the Earth would be too cold to support life) or “global warming” (because some parts of the world may in fact become colder).

Ecosystem
A natural area (a forest, perhaps, or a river basin), the total number of species in it, and the way in which they affect (and often depend on) one another.

Endocrine disruptors
Synthetic chemicals which affect hormones in the body and disrupt its normal functioning.

Fossil fuels
Coal, oil and gas, all the products of fossilised animal and plant remains.

Gaia Hypothesis
The theory developed by the British scientist James Lovelock which suggests the Earth functions as a single organism able to maintain the conditions necessary for its own survival.

Greenhouse gases
The gases, some of natural causes but increasing from human activities, which form a “blanket” round the Earth that traps heat from the Sun near the surface instead of letting it escape back into space. Chief among the gases are carbon dioxide and methane.

Groundwater
Underground lakes which are gradually replenished by water filtering down from the surface.

Hermaphroditism
The state of belonging to both sexes, often accompanied by possession of both sexes genitalia.

Hydropower
Electricity generated by water, which often requires the construction of large dams and reservoirs.

Kyoto Protocol
The international treaty designed to tackle climate change by securing the agreement of developed countries to reduce their greenhouse gas emissions.

Microgeneration
Generating power in local, decentralised ways: it can mean households using small wind turbines, for instance, or solar panels.

Mitigation
A policy which involves trying to reduce the expected impacts of climate change, chiefly by reducing emissions of greenhouse gases (see Adaptation above).

Nuclear fusion
Fission works by splitting atomic nuclei to release huge amounts of energy. No-one has yet worked out how to dispose of the waste, which remains dangerously radioactive for thousands of years. Many people also have safety fears about fusion reactors and think they could help nuclear weapons to spread, because the technology for generating electricity makes it possible to build an atomic bomb.

Nuclear fuel
Coal, oil and gas, all the products of fossilised animal and plant remains.

Positive feedback
A term used by climate scientists to describe how a warming world can in some circumstances make itself warmer still. One example is the disappearance of ice in the Arctic. While the ice remains, it reflects the Sun’s heat back into space. But when it melts the white ice is replaced by darker water which absorbs more heat, speeding up the warming process.

Renewable energy
Energy which comes from sources that, unlike fossil fuels, constantly renew themselves - the Sun, the wind and even ocean waves are some of the main types.

Sustainable development
Development that “meets the needs of the present without compromising the ability of future generations to meet their own needs,” according to the Brundtland Report. Or how about: “treating the world as if we intended to stay”?

Tipping points
Rapid and irreversible changes in natural systems which could have enormous consequences for life on Earth. Examples of possible tipping points which some scientists think may be coming close include the melting of the West Antarctic ice sheet, and the disruption of the Asian monsoon.

Acronyms

APEC
Asia Pacific Economic Cooperation

ASEAN
Association of Southeast Asian Nations

ASPO
Association for the Study of Peak Oil and Gas

AU
African Union

CAT
Centre for Alternative Technology (UK)

CBD
UN Convention on Biological Diversity

CSD
UN Commission on Sustainable Development

DRD
UK Government’s Department for International Development

ECI
University of Oxford Environmental Change Institute

EPA
United States’ Environmental Protection Agency

ESD
Education for Sustainable Development

EU
European Union

FAO
UN Food and Agriculture Organisation

FoE
Friends of the Earth

FSC
Forest Stewardship Council

GCI
Global Commons Institute

GEO
UNEP’s GEO (Global Environment Outlook) report series

GIWA
Global International Waters Assessment

GRID-Arendal
UNEP’s Global Resource Information Database office in Norway

IEA
International Energy Agency

IFPRI
International Food Policy Research Institute

IIEED
International Institute for Environment and Development

IPCC
Intergovernmental Panel on Climate Change

IUCN
International Union for the Conservation of Nature and Natural Resources (usually known as IUCN - The World Conservation Union)

LLMA
Locally Managed Marine Area

Acronyms
Teaching and Learning for a Sustainable Future: A Multimedia Teacher Education Programme
CD-ROM Version 3.0
Paris, UNESCO/Griffith University (Australia), 2002
This programme has been published by UNESCO as part of its function as task manager for Chapter 36 of Agenda 21 and as a contribution to the 2002 World Summit on Sustainable Development. It contains 100 hours (25 modules) of professional development for use in pre-service teacher courses as well as for in-service education of teachers, curriculum developers, education policy makers, and authors of educational materials. Online: www.unesco.org/education/hsf/ Ref. 333.108

YouthXchange Training Kit Responsible Consumption – The Guide
Paris, UNESCO/PUINESCO, 2001
49 p., illus.
A training kit to assist youth groups, NGOs and teachers to raise awareness on sustainable consumption and empower young people to put theory into practice in making more sustainable purchasing decisions.
On-line version: http://unesdoc.unesco.org/images/0012/001240/124085eo.pdf 4.4 Mo
To know more about it: http://youthexchange.x-meta.net/ Ref. 333.106

Biotechnology Educational Modules (CD-ROM)
These teaching/learning modules have been developed to enable students to extrapolate their basic knowledge in biology and understand the practical applications of biotechnology. To facilitate comprehension, the contents have been categorised into 'Essentials' and 'Applications'.
Ref. 325.112

Connect
Contacto
UNESCO International Science, Technology and Environmental Education Newsletter
Paris, UNESCO, 1976 (First published)
First published in 1976, this international science, technology and environmental education newsletter contains articles, reports and news on a variety of science and technology education topics. It is also published in Arabic, Chinese, Russian and Hindi.
Archives on-line: http://www.unesco.org/education/ste/newslet/archives.shtml Ref. 325.7

Technology Education Guide
Erfurt, Germany, UNESCO/WOCATE, 2003
168 p.
On-line version: http://unesdoc.unesco.org/images/0013/001320/132001e.pdf Ref. 325.116

UNESCO Resource Kit. Science and Technology Education
Hatfield, Association for Science Education (UK)/UNESCO, 1999
1 v. in various pagings
A series of 26 illustrated modules on science and technology education containing information on the chosen subject, teacher’s notes along with a list of questions and answers.
On-line version: http://www.unesco.org/education/site/learn_mat/ressour_kit.shtml Ref. 325.104

Youth and Recycling (CD-ROM)
Turin, UNESCO Centre, 1999
The user will discover the world of recycling through different activities undertaken by young people and UNESCO. The CD provides information on recycling, a data base of youth groups engaged in this field of activity, and several links to web sites to further investigate this subject.
Ref. 325.110

Best practices of non-violent conflict resolution in and out-of-school: some examples
Verdun, Antonella
Paris, UNESCO, 2002
80 p., illus.
This publication aims to inform teachers, trainers, educators, parents, youth and students who, one way or another, are confronted with violence in the school or in non-formal community education, and are looking for practical solutions.
Ref. 34.132

Eduarcing for Citizenship. Pour une éducation à la citoyenneté. (Educarcing para la ciudadanía (CD-ROM)
Paris, UNESCO/EDUcation International/Presse en ligne, 2001
Multilingual
CD-ROM prepared to help pre-primary and primary school teachers in their approach to teaching education for citizenship. It contains a glossary, a bibliography, guideline texts, methodologies, learning activity sheets and a list of selected videos.
Ref. 34.125

Future Scientists: Women and Men. Highlights of an International Encounter
50 p., illus.
This booklet, prepared for secondary-school science teachers in the UNESCO Associated Schools Project Network, provides information, ideas and examples of activities and actions that these teachers can initiate as part of the “Future Scientists” campaign, an initiative to mobilise young people, especially girls, to pursue scientific studies and careers.

Mine-awareness Education: A Country Review and Curriculum Guidelines for Bosnia
32 p., illus.
This booklet provides source materials on mine-awareness for teachers and practitioners who are involved with primary schoolchildren in high-risk areas, and to launch a process of information and research in the field of land-mine awareness.
Available only on-line: http://unesdoc.unesco.org/images/0011/001161/116148eo.pdf 3.7 Mo

Peace Package - “Peace is in our Hands”
Paris, UNESCO, 2000
33 p., illus., annexes
Prepared as a contribution to the International Decade for the Culture of Peace and Non-Violence for the Children of the World (2001-2010), this Peace Package is designed for elementary school teachers to promote education for culture of peace. It can easily be adapted to classroom teaching and to the age of pupils. It includes a teachers’ handbook, a peace poster, seven activity cards and appeals written by children at seven regional UNESCO peace festivals.
On-line version: http://www.unesco.org/education/wsp/handbook.shtml 442 Ko
Ref. 34.121

The Quiet Peacemakers: A Tribute to Teachers
20 p.
All over the world teachers are finding ways of showing children how to respect those who are different from themselves. The “quiet peacemakers” are those teachers who devote their energy to building or restoring peace through their work in the classroom.
On-line version: http://unesdoc.unesco.org/images/0011/001133/113365eo.pdf 1.6 Mo
Ref. 411.25

A Selected List of UNESCO Practical and Reference Materials Related to Education for Peace
Paris, UNESCO, 2001
22 p.
ED-2001/W5/12
This document contains details of basic sources, teaching materials, curriculum and textbook guidelines, documents, specialised studies, bibliographies, directories, documents in preparation, along with a list of abbreviations related to peace education.
On-line version: http://unesdoc.unesco.org/images/0012/001230/123065eo.pdf 1.5 Mo
Ref. 34.123

Education, Work and the Future (CD-ROM)
52 p.
ED-2002/W5/06
The present Handbook is a direct outcome of the lessons learned in the Tanzania and Uganda workshops. The Handbook does not pretend to provide a detailed and comprehensive guide, but aims to present some basic principles that should be taken into account when working for children.
On-line version: http://unesdoc.unesco.org/images/0012/001254/125465eo.pdf 3.60 Mo
Ref. 55.68

1.5 Mo
ED-2001/WS/47
This handbook aims to present some basic principles that should be taken into account when working for children. It provides an overview of the main goals of Education for the 21st Century: How can the term be transformed into public policies and private actions that will change lives everywhere?
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This report, commissioned by the UK Department for International Development, sets out what Panos London believes should be the role of communication in long-term, sustainable development. Panos London works with journalists in developing countries to produce features on, and analysis of, major global issues.
Online version: http://panos.org.uk/resources/reports.asp

UNESCO/Encyclopedia of Life Support Systems (EOLSS)
Website: http://www.eolss.net

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Media as partners in education for sustainable development: A Training and Resource Kit

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