UNITED NATIONS
GLOBAL COMPACT –
ENVIRONMENTAL PRINCIPLES TRAINING PACKAGE

Delegate’s Manual
ENVIRONMENTAL PRINCIPLES
TRAINING PACKAGE

Delegates’ Manual

Full package and slides available at http://www.unep.fr/outreach/compact/index.htm
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Foreword

Within the first five years of its existence, the UN Global Compact Initiative has grown to be the largest corporate citizenship initiative in the world. Today the initiative involves over two thousand company participants from all regions. Since the beginning UNEP has been closely involved as a core UN agency in the initiative, acting as guardian of its environment principles and building on its longstanding experience in engaging the private sector in voluntary action for sustainable development. Throughout, we have always underlined the importance of reporting and communicating progress on implementation of the principles. It is only by reporting and communicating progress openly that companies, labour unions and other stakeholder organisations will be able to learn from experience and accomplish continual improvement.

The response from leading the business in all regions to the invitation from the UN Secretary-General to integrate the basic principles on environment, human rights, labour standards and anti-corruption has been impressive. More recently, we have seen how mainstream investors are beginning to show interest as UNEP, the Global Compact and business partners led the development of principles for responsible investment. Business today needs to mainstream, scale up and think in terms of not only “sustainable investment” but also “investment in sustainable development”.

After the initial campaigning years of the UN Global Compact, the challenge today is to focus more closely on quality of implementation. It is to this call that the Global Compact Environment Principles Training Package is answering. Previous studies on the impact of the UN Global Compact showed room for improvement in developing tools and resources for companies to understand and implement the principles. In a 2004 impact study, participants gave a widespread call for toolkits on the implementation of the principles. Interviews with many participants showed that seeking practical know-how is a major motivation for joining the UN Global Compact as global corporate environmental and social responsibility initiative.

The Global Compact Environment Principles Training Package is providing a practical kit for trainers, managers and employees to improve their understanding of how to implement the three environment principles. In general, it provides an up to date introduction to corporate environmental responsibility. This is a key component of corporate societal responsibility, as currently discussed in the development of new international standards and called for in the 2002 Johannesburg Declaration. In addition, the package also makes the link with quality management, introducing the Global Compact Performance Model that was developed and used as framework for the 2004 Raise the Bar publication.

It is especially significant that we also launch this training package in Chinese, underlining its value to the training of suppliers and emerging company leaders in the developing world.

I encourage you as old and newcomer participants in the Compact, as well as service providers and fellow international agencies to make use of this comprehensive package. It is there for your use and adaptation to your needs. Join us in this effort to build capacity for greater environmental care in business operations world-wide.

KLAUS TOEPFER
Executive Director
United Nations Environment Programme
“What does corporate environmental responsibility require from a company today? Think of just two of the challenges business face world-wide. Expanding population in developing regions is creating large markets dominated by the young. Escalating demand for energy propels economic development but threatens our climate. How can your company take on new risks and opportunities in a responsible manner? How do you apply precaution? How do you promote environmentally sound technologies? These questions are relevant to companies of different sizes in all regions. This package provides practical guidance and an overview of new trends in addressing these. Trainers and practitioners alike are invited to join us with fellow UN agencies such as UNDP, UNIDO and others in rolling out this training programme in a growing number of countries and languages.”

MONIQUE BARBUT
Director
UNEP Division of Technology, Industry and Economics (DTIE, Paris)

“As we passed the first deadline for Global Compact participants to issue their Communications on Progress by mid-2005, it was clear that we need to strengthen our effort in promoting transparent communication on implementation. The learning spirit of the Compact is also to communicate what works and what doesn’t. This brings us to the demand for practical guidance and capacity building. I welcome this Global Compact Environment Principles Training Package as an excellent contribution in responding to this demand. I encourage training institutions, business organisations and fellow UN agencies to make full use of it.”

GEORG KELL
Head
UN Global Compact Office (New York)

“The World Business Council for Sustainable Development (WBCSD) has been closely involved in the development of the Global Compact Performance Model during the past three years. I welcome the introduction to the model and the practical business case approach found in this training package. I am sure it will be of tremendous value to business communities everywhere, in particular new market leaders from Asia, Africa, Latin America and the Middle East.”

ODD GULLBERG
Chief Operating Officer, WBCSD (Geneva)
The development of this training package has been inspired by discussions at Global Compact Learning Forms, meetings of international experts in the development of the publication *Raise the Bar* (2004) with the Global Compact Performance Model, as well as ongoing work and training materials of UNEP and its partners in the fields of corporate responsibility, sustainable production / consumption and environmentally sound technologies.

We would like to thank Jonathon Hanks of *Incite Sustainability*, as well as Claire Janisch and Karoline Johnson for developing the text of the Global Compact Environmental Principles Training Package. In addition, we are grateful to Surya Chandak, Guido Sonnemann and Xiaofei Pei of UNEP DTIE and to Lothar Meinzer of *BASF Aktiengesellschaft* for their detailed comments on draft text and structure. The project manager is Cornis van der Lugt of UNEP DTIE.

We are grateful to our corporate sponsors *Veolia* and *EDF* for enabling the translation, design and printing of this training package.
Environmental Principles Training Package

BACKGROUND INFORMATION
THE UNITED NATIONS GLOBAL COMPACT (UNGC)

At the World Economic Forum in January 1999, UN Secretary-General Kofi Annan called on business leaders to join an international initiative aimed at bringing business together with UN agencies, labour, NGOs and other civil-society actors to foster partnerships in the pursuit of a more sustainable and inclusive global economy. The Global Compact was born.

While corporate citizenship has emerged as a distinct business approach in the past decade, the Secretary-General recognised that there was a need for a global initiative to assist companies in the development and promotion of values-based management world wide.

The Global Compact encourages innovation, creative solutions and good practices among its participants. As a voluntary corporate citizenship initiative, it is not a substitute for regulatory structures or other codes. It relies on the enlightened self-interest of companies, labour and civil society to initiate and share substantive action in pursuing the principles upon which the Global Compact is based.

With the Global Compact rooted in internationally accepted principles, its participants can feel confident that their actions are being guided by values that are universally supported and endorsed.

An important emphasis of the Compact is on promoting corporate change through the use of a learning approach that facilitates discussion between the various parties and that builds new partnerships for implementing future projects. This training package supports the learning approach of the Global Compact (UNGC).
THE TEN PRINCIPLES OF THE GLOBAL COMPACT

Human Rights
1. Businesses should support and respect the protection of international human rights within their sphere of influence; and
2. Make sure their own corporations are not complicit in human rights abuses.

Labour
3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. The elimination of all forms of forced and compulsory labour;
5. The effective abolition of child labour; and
6. The elimination of discrimination in respect of employment and occupation.

Environment
7. Businesses should support a precautionary approach to environmental challenges;
8. Undertake initiatives to promote greater environmental responsibility; and

Anti-Corruption
10. Businesses should work against all forms of corruption, including extortion and bribery.
Environmental Principles Training Package

INTRODUCING THE DELEGATES’ MANUAL
INTRODUCTION

The Delegates’ Manual

This Delegates’ Manual forms part of a package of documents that has been designed for individuals and institutions who are seeking to implement or support the Global Compact.

The materials in the kit have been designed to be used as a basic toolkit that (where necessary) can be added to, depending on the participants’ needs, the particular region, and other contextual requirements or specifications. While it has been designed primarily for those who are new to the Global Compact, it is also intended to be of value to those who have a sound general understanding of the Compact.

As is outlined in the next section, the course is organised into five teaching modules. These modules may be covered as part of one full course, or they may be individually tailored to suit a particular audience. Each of the five modules in this manual is set out as follows:

- Overview of the key objectives of the module
- Thumbnails of the slide presentations that will be given by the trainer
- Background reading which includes case studies, extracts and relevant reference material
- Exercises pertaining to the module/session

Appendix 1 provides a useful framework for understanding the interdependencies and linkage between the three UNGC environmental principles, each of the training modules, and the various environmental management tools. The interrelationship between each of these elements is presented using the Global Compact Performance Model as an underlying Framework for Action. The Performance Model is introduced in some detail in Module 4, Session 1. The table in Appendix 1 serves as a valuable checklist for implementing the environmental principles of the UNGC.

Appendix 5 contains evaluation forms to be completed at various stages in the course.
Components of the Global Compact Training Programme

The course is organised into five teaching modules. These modules can be covered as part of one full course, or dealt with individually for specific types of training tailored to suit a particular audience.

The following five modules are provided for in the programme:

**Module 1: Introduction to the UNGC**
Module 1 introduces delegates to the Global Compact and its approach. It comprises a slide presentation and speaker’s notes on the history, objectives and activities of the Global Compact. More detailed background material is provided for trainers and delegates to use as the basis of further discussions and activities.

**Module 2: The Business Case for the UNGC Environmental Principles**
Module 2 demonstrates the importance of undertaking initiatives that support the Global Compact’s three environmental principles. The section unpacks the concept of sustainable development and looks at the business case for implementing business practices that support sustainability.

**Module 3: Understanding the Environmental Principles (7, 8 and 9)**
Module 3 introduces each of the three environmental principles and explains their implications for companies at a practical level, using a combination of slides, case studies and exercises.

**Module 4: From Principle to Practice: Case Studies in Implementation**
Module 4 provides delegates with an understanding of how the principles can be implemented within a company. The module makes use of case studies to outline what other companies have done and to provide delegates with an opportunity to gain practical experience in solving problems that arise from the absence of the three environmental principles.

**Module 5: Business and Sustainability Initiatives: An Overview**
Module 5 is as an optional module that provides a useful overview of the more prominent business initiatives that have been developed over the last ten years to promote sustainability.
**How to work with a case study**

Case studies are used throughout this course. They describe actual business situations and enable you to sharpen analytical skills. They often provide useful ‘snapshots’ of business problems or situations, and allow you to develop broad sets of principles and concepts which could be replicated in other companies, including in particular your own company.

- Go through the case study and ask the following: What is the case about, and what types of information am I being given to analyse?
- Read the case study carefully and assess the key facts as you go. Put yourself, where possible, into the position of the manager/company head/employee representative and try to develop a sense of involvement in the issues that they would be seeking to address.
- Define the basic issues at hand, keeping in mind the context of the specific module.
- Identify the relevant areas for analysing the issues you have identified and note these down.
- Study the factual information and weigh up the qualitative and quantitative information carefully.
- Formulate a set of recommendations for the issues identified, or proceed to the questions in the exercise.
Environmental Principles
Training Package

Module 1
INTRODUCTION TO THE GLOBAL COMPACT
MODULE 1: Introduction to the UNGC

OBJECTIVES

In this module, you will:
- introduce yourself to the other delegates;
- be introduced to the course objectives and methods;
- obtain an overview of the Global Compact, its origins and areas of activity;
- be introduced to the 10 Principles of the Global Compact, and
- understand the benefits of participation.
BACKGROUND READING

Kofi Annan’s 1999 Speech

Secretary-General Proposes Global Compact On Human Rights, Labour, Environment,
In Address To World Economic Forum In Davos

Following is the address of Secretary-General Kofi Annan to the World Economic Forum in Davos, Switzerland, on 31 January:

I am delighted to join you again at the World Economic Forum. This is my third visit in just over two years as Secretary-General of the United Nations.

On my previous visits, I told you of my hopes for a creative partnership between the United Nations and the private sector. I made the point that the everyday work of the United Nations — whether in peacekeeping, setting technical standards, protecting intellectual property or providing much-needed assistance to developing countries — helps to expand opportunities for business around the world. And I stated quite frankly that, without your know-how and your resources, many of the objectives of the United Nations would remain elusive.

Today, I am pleased to acknowledge that, in the past two years, our relationship has taken great strides. We have shown through cooperative ventures — both at the policy level and on the ground — that the goals of the United Nations and those of business can, indeed, be mutually supportive.

This year, I want to challenge you to join me in taking our relationship to a still higher level. I propose that you, the business leaders gathered in Davos, and we, the United Nations, initiate a global compact of shared values and principles, which will give a human face to the global market.

Globalization is a fact of life. But I believe we have underestimated its fragility. The problem is this. The spread of markets outpaces the ability of societies and their political systems to adjust to them, let alone to guide the course they take. History teaches us that such an imbalance between the economic, social and political realms can never be sustained for very long.

The industrialised countries learned that lesson in their bitter and costly encounter with the Great Depression. In order to restore social harmony and political stability, they adopted social safety nets and other measures, designed to limit economic volatility and compensate the victims of market failures. That consensus made possible successive moves towards liberalization, which brought about the long post-war period of expansion.

Our challenge today is to devise a similar compact on the global scale, to underpin the new global economy. If we succeed in that, we would lay the foundation for an age of global prosperity, comparable to that enjoyed by the industrialised countries in the decades after the Second World War. Specifically, I call on you — individually through your firms, and collectively through your business associations — to embrace, support and enact a set of core values in the areas of human rights, labour standards, and environmental practices.

Why those three? In the first place, because they are all areas where you, as businessmen and women, can make a real difference. Secondly, they are areas in which universal values have already been defined by international agreements, including the Universal Declaration,
the International Labour Organization's Declaration on fundamental principles and rights at work, and the Rio Declaration of the United Nations Conference on Environment and Development in 1992. Finally, I choose these three areas because they are ones where I fear that, if we do not act, there may be a threat to the open global market, and especially to the multilateral trade regime.

There is enormous pressure from various interest groups to load the trade regime and investment agreements with restrictions aimed at preserving standards in the three areas I have just mentioned. These are legitimate concerns. But restrictions on trade and investment are not the right means to use when tackling them. Instead, we should find a way to achieve our proclaimed standards by other means. And that is precisely what the compact I am proposing to you is meant to do.

Essentially there are two ways we can do it. One is through the international policy arena. You can encourage States to give us, the multilateral institutions of which they are all members, the resources and the authority we need to do our job.

The United Nations as a whole promotes peace and development, which are prerequisites for successfully meeting social and environmental goals alike. And the International Labour Organization, the United Nations High Commissioner for Human Rights and the United Nations Environment Programme strive to improve labour conditions, human rights and environmental quality. We hope, in the future, to count you as our allies in these endeavours.

The second way you can promote these values is by taking them directly, by taking action in your own corporate sphere. Many of you are big investors, employers and producers in dozens of different countries across the world. That power brings with it great opportunities — and great responsibilities.

You can uphold human rights and decent labour and environmental standards directly, by your own conduct of your own business.

Indeed, you can use these universal values as the cement binding together your global corporations, since they are values people all over the world will recognise as their own. You can make sure that in your own corporate practices you uphold and respect human rights; and that you are not yourselves complicit in human rights abuses.

Don’t wait for every country to introduce laws protecting freedom of association and the right to collective bargaining. You can at least make sure your own employees, and those of your subcontractors, enjoy those rights. You can at least make sure that you yourselves are not employing under-age children or forced labour, either directly or indirectly. And you can make sure that, in your own hiring and firing policies, you do not discriminate on grounds of race, creed, gender or ethnic origin.

You can also support a precautionary approach to environmental challenges. You can undertake initiatives to promote greater environmental responsibility. And you can encourage the development and diffusion of environmentally friendly technologies.

That, ladies and gentlemen, is what I am asking of you. But what, you may be asking yourselves, am I offering in exchange? Indeed, I believe the United Nations system does have something to offer.

The United Nations agencies — the United Nations High Commissioner for Human Rights, the International Labour Organization (ILO), the United Nations Environment Programme
UNEP) — all stand ready to assist you, if you need help, in incorporating these agreed values and principles into your mission statements and corporate practices. And we are ready to facilitate a dialogue between you and other social groups, to help find viable solutions to the genuine concerns that they have raised.

You may find it useful to interact with us through our newly created website, www.un.org/partners, which offers a “one-stop shop” for corporations interested in the United Nations. More important, perhaps, is what we can do in the political arena, to help make the case for and maintain an environment which favours trade and open markets.

I believe what I am proposing to you is a genuine compact, because neither side of it can succeed without the other. Without your active commitment and support, there is a danger that universal values will remain little more than fine words — documents whose anniversaries we can celebrate and make speeches about, but with limited impact on the lives of ordinary people. And unless those values are really seen to be taking hold, I fear we may find it increasingly difficult to make a persuasive case for the open global market.

National markets are held together by shared values. In the face of economic transition and insecurity, people know that if the worst comes to the worst, they can rely on the expectation that certain minimum standards will prevail. But in the global market, people do not yet have that confidence. Until they do have it, the global economy will be fragile and vulnerable — vulnerable to backlash from all the “isms” of our post-cold-war world: protectionism; populism; nationalism; ethnic chauvinism; fanaticism; and terrorism.

What all those “isms” have in common is that they exploit the insecurity and misery of people who feel threatened or victimised by the global market. The more wretched and insecure people there are, the more those “isms” will continue to gain ground. What we have to do is find a way of embedding the global market in a network of shared values. I hope I have suggested some practical ways for us to set about doing just that.

Let us remember that the global markets and multilateral trading system we have today did not come about by accident. They are the result of enlightened policy choices made by governments since 1945. If we want to maintain them in the new century, all of us — governments, corporations, non-governmental organizations, international organizations — have to make the right choices now.

We have to choose between a global market driven only by calculations of short-term profit, and one which has a human face. Between a world which condemns a quarter of the human race to starvation and squalor, and one which offers everyone at least a chance of prosperity, in a healthy environment. Between a selfish free-for-all in which we ignore the fate of the losers, and a future in which the strong and successful accept their responsibilities, showing global vision and leadership.

I am sure you will make the right choice.
RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT (1992)

The United Nations Conference on Environment and Development,
Having met at Rio de Janeiro from 3 to 14 June 1992,
Reaffirming the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972, and seeking to build upon it,
With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people,
Working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system,
Recognizing the integral and interdependent nature of the Earth, our home,
Proclaims that:

Principle 1 Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 2 States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 3 The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4 In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5 All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6 The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7 States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8 To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.
Principle 9  States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10  Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11  States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12  States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13  States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14  States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15  In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16  National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17  Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.
Principle 18  States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19 States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20 Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21 The creativity, ideals and courage of the youth of the world should be mobilised to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22 Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognise and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23 The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24 Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25 Peace, development and environmental protection are interdependent and indivisible.

Principle 26 States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27 States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.
JOHANNESBURG DECLARATION ON SUSTAINABLE DEVELOPMENT (2002)

From our origins to the future

1. We, the representatives of the peoples of the world, assembled at the World Summit on Sustainable Development in Johannesburg, South Africa, from 2 to 4 September 2002, reaffirm our commitment to sustainable development.

2. We commit ourselves to building a humane, equitable and caring global society, cognizant of the need for human dignity for all.

3. At the beginning of this Summit, the children of the world spoke to us in a simple yet clear voice that the future belongs to them, and accordingly challenged all of us to ensure that through our actions they will inherit a world free of the indignity and indecency occasioned by poverty, environmental degradation and patterns of unsustainable development.

4. As part of our response to these children, who represent our collective future, all of us, coming from every corner of the world, informed by different life experiences, are united and moved by a deeply felt sense that we urgently need to create a new and brighter world of hope.

5. Accordingly, we assume a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development — economic development, social development and environmental protection — at the local, national, regional and global levels.

6. From this continent, the cradle of humanity, we declare, through the Plan of Implementation of the World Summit on Sustainable Development and the present Declaration, our responsibility to one another, to the greater community of life and to our children.

7. Recognizing that humankind is at a crossroads, we have united in a common resolve to make a determined effort to respond positively to the need to produce a practical and visible plan to bring about poverty eradication and human development.

From Stockholm to Rio de Janeiro to Johannesburg

8. Thirty years ago, in Stockholm, we agreed on the urgent need to respond to the problem of environmental deterioration. Ten years ago, at the United Nations Conference on Environment and Development, held in Rio de Janeiro, we agreed that the protection of the environment and social and economic development are fundamental to sustainable development, based on the Rio Principles. To achieve such development, we adopted the global programme entitled Agenda 21 and the Rio Declaration on Environment and Development, to which we reaffirm our commitment. The Rio Conference was a significant milestone that set a new agenda for sustainable development.

9. Between Rio and Johannesburg, the world’s nations have met in several major conferences under the auspices of the United Nations, including the International Conference on Financing for Development, as well as the Doha Ministerial Conference. These conferences defined for the world a comprehensive vision for the future of humanity.

10. At the Johannesburg Summit, we have achieved much in bringing together a rich tapestry of peoples and views in a constructive search for a common path towards a
world that respects and implements the vision of sustainable development. The Johannesburg Summit has also confirmed that significant progress has been made towards achieving a global consensus and partnership among all the people of our planet.

The challenges we face

11. We recognise that poverty eradication, changing consumption and production patterns and protecting and managing the natural resource base for economic and social development are overarching objectives of and essential requirements for sustainable development.

12. The deep fault line that divides human society between the rich and the poor and the ever-increasing gap between the developed and developing worlds pose a major threat to global prosperity, security and stability.

13. The global environment continues to suffer. Loss of biodiversity continues, fish stocks continue to be depleted, desertification claims more and more fertile land, the adverse effects of climate change are already evident, natural disasters are more frequent and more devastating, and developing countries more vulnerable, and air, water and marine pollution continue to rob millions of a decent life.

14. Globalization has added a new dimension to these challenges. The rapid integration of markets, mobility of capital and significant increases in investment flows around the world have opened new challenges and opportunities for the pursuit of sustainable development. But the benefits and costs of globalization are unevenly distributed, with developing countries facing special difficulties in meeting this challenge.

15. We risk the entrenchment of these global disparities and unless we act in a manner that fundamentally changes their lives the poor of the world may lose confidence in their representatives and the democratic systems to which we remain committed, seeing their representatives as nothing more than sounding brass or tinkling cymbals.

Our commitment to sustainable development

16. We are determined to ensure that our rich diversity, which is our collective strength, will be used for constructive partnership for change and for the achievement of the common goal of sustainable development.

17. Recognizing the importance of building human solidarity, we urge the promotion of dialogue and cooperation among the world’s civilizations and peoples, irrespective of race, disabilities, religion, language, culture or tradition.

18. We welcome the focus of the Johannesburg Summit on the indivisibility of human dignity and are resolved, through decisions on targets, timetables and partnerships, to speedily increase access to such basic requirements as clean water, sanitation, adequate shelter, energy, health care, food security and the protection of biodiversity. At the same time, we will work together to help one another gain access to financial resources, benefit from the opening of markets, ensure capacity-building, use modern technology to bring about development and make sure that there is technology transfer, human resource development, education and training to banish underdevelopment forever.

19. We reaffirm our pledge to place particular focus on, and give priority attention to, the fight against the worldwide conditions that pose severe threats to the sustainable
development of our people, which include: chronic hunger; malnutrition; foreign occupation; armed conflict; illicit drug problems; organised crime; corruption; natural disasters; illicit arms trafficking; trafficking in persons; terrorism; intolerance and incitement to racial, ethnic, religious and other hatreds; xenophobia; and endemic, communicable and chronic diseases, in particular HIV/AIDS, malaria and tuberculosis.

20. We are committed to ensuring that women’s empowerment, emancipation and gender equality are integrated in all the activities encompassed within Agenda 21, the Millennium development goals and the Plan of Implementation of the Summit.

21. We recognise the reality that global society has the means and is endowed with the resources to address the challenges of poverty eradication and sustainable development confronting all humanity. Together, we will take extra steps to ensure that these available resources are used to the benefit of humanity.

22. In this regard, to contribute to the achievement of our development goals and targets, we urge developed countries that have not done so to make concrete efforts reach the internationally agreed levels of official development assistance.

23. We welcome and support the emergence of stronger regional groupings and alliances, such as the New Partnership for Africa’s Development, to promote regional cooperation, improved international cooperation and sustainable development.

24. We shall continue to pay special attention to the developmental needs of small island developing States and the least developed countries.

25. We reaffirm the vital role of the indigenous peoples in sustainable development.

26. We recognise that sustainable development requires a long-term perspective and broad-based participation in policy formulation, decision-making and implementation at all levels. As social partners, we will continue to work for stable partnerships with all major groups, respecting the independent, important roles of each of them.

27. We agree that in pursuit of its legitimate activities the private sector, including both large and small companies, has a duty to contribute to the evolution of equitable and sustainable communities and societies.

28. We also agree to provide assistance to increase income-generating employment opportunities, taking into account the Declaration on Fundamental Principles and Rights at Work of the International Labour Organization.

29. We agree that there is a need for private sector corporations to enforce corporate accountability, which should take place within a transparent and stable regulatory environment.

30. We undertake to strengthen and improve governance at all levels for the effective implementation of Agenda 21, the Millennium Development Goals and the Plan of Implementation of the Summit.

Multilateralism is the future

31. To achieve our goals of sustainable development, we need more effective, democratic and accountable international and multilateral institutions.

32. We reaffirm our commitment to the principles and purposes of the Charter of the United Nations and international law, as well as to the strengthening of multilateralism. We
support the leadership role of the United Nations as the most universal and representative organization in the world, which is best placed to promote sustainable development.

33. We further commit ourselves to monitor progress at regular intervals towards the achievement of our sustainable development goals and objectives.

*Making it happen!*

34. We are in agreement that this must be an inclusive process, involving all the major groups and Governments that participated in the historic Johannesburg Summit.

35. We commit ourselves to act together, united by a common determination to save our planet, promote human development and achieve universal prosperity and peace.

36. We commit ourselves to the Plan of Implementation of the World Summit on Sustainable Development and to expediting the achievement of the time-bound, socio-economic and environmental targets contained therein.

37. From the African continent, the cradle of humankind, we solemnly pledge to the peoples of the world and the generations that will surely inherit this Earth that we are determined to ensure that our collective hope for sustainable development is realised.
THE STOCKHOLM DECLARATION (1972)

Declaration of the United Nations Conference on the Human Environment

The United Nations Conference on the Human Environment, having met at Stockholm from 5 to 16 June 1972, having considered the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment,

Proclaims that:

1. Man is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet a stage has been reached when, through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale. Both aspects of man’s environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights the right to life itself.

2. The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world; it is the urgent desire of the peoples of the whole world and the duty of all Governments.

3. Man has constantly to sum up experience and go on discovering, inventing, creating and advancing. In our time, man’s capability to transform his surroundings, if used wisely, can bring to all peoples the benefits of development and the opportunity to enhance the quality of life. Wrongly or heedlessly applied, the same power can do incalculable harm to human beings and the human environment. We see around us growing evidence of man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies, harmful to the physical, mental and social health of man, in the man-made environment, particularly in the living and working environment.

4. In the developing countries most of the environmental problems are caused by under-development. Millions continue to live far below the minimum levels required for a decent human existence, deprived of adequate food and clothing, shelter and education, health and sanitation. Therefore, the developing countries must direct their efforts to development, bearing in mind their priorities and the need to safeguard and improve the environment. For the same purpose, the industrialised countries should make efforts to reduce the gap themselves and the developing countries. In the industrialised countries, environmental problems are generally related to industrialization and technological development.

5. The natural growth of population continuously presents problems for the preservation of the environment, and adequate policies and measures should be adopted, as appropriate, to face these problems. Of all things in the world, people are the most precious. It is the people that propel social progress, create social wealth, develop science and technology and, through their hard work, continuously transform the human environment. Along with social progress and the advance of production, science and technology, the capability of man to improve the environment increases with each passing day.
6 A point has been reached in history when we must shape our actions throughout the world with a more prudent care for their environmental consequences. Through ignorance or indifference we can do massive and irreversible harm to the earthly environment on which our life and well being depend. Conversely, through fuller knowledge and wiser action, we can achieve for ourselves and our posterity a better life in an environment more in keeping with human needs and hopes. There are broad vistas for the enhancement of environmental quality and the creation of a good life. What is needed is an enthusiastic but calm state of mind and intense but orderly work. For the purpose of attaining freedom in the world of nature, man must use knowledge to build, in collaboration with nature, a better environment. To defend and improve the human environment for present and future generations has become an imperative goal for mankind—a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and of worldwide economic and social development.

7. To achieve this environmental goal will demand the acceptance of responsibility by citizens and communities and by enterprises and institutions at every level, all sharing equitably in common efforts. Individuals in all walks of life as well as organizations in many fields, by their values and the sum of their actions, will shape the world environment of the future.

Local and national governments will bear the greatest burden for large-scale environmental policy and action within their jurisdictions. International cooperation is also needed in order to raise resources to support the developing countries in carrying out their responsibilities in this field. A growing class of environmental problems, because they are regional or global in extent or because they affect the common international realm, will require extensive cooperation among nations and action by international organizations in the common interest.

The Conference calls upon Governments and peoples to exert common efforts for the preservation and improvement of the human environment, for the benefit of all the people and for their posterity.

Principles

States the common conviction that:

**Principle 1** Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.

**Principle 2** The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.

**Principle 3** The capacity of the earth to produce vital renewable resources must be maintained and, wherever practicable, restored or improved.

**Principle 4** Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperilled by a combination of adverse
factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.

**Principle 5** The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.

**Principle 6** The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems. The just struggle of the peoples of ill countries against pollution should be supported.

**Principle 7** States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

**Principle 8** Economic and social development is essential for ensuring a favorable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life.

**Principle 9** Environmental deficiencies generated by the conditions of under-development and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries and such timely assistance as may be required.

**Principle 10** For the developing countries, stability of prices and adequate earnings for primary commodities and raw materials are essential to environmental management, since economic factors as well as ecological processes must be taken into account.

**Principle 11** The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures.

**Principle 12** Resources should be made available to preserve and improve the environment, taking into account the circumstances and particular requirements of developing countries and any costs which may emanate from their incorporating environmental safeguards into their development planning and the need for making available to them, upon their request, additional international technical and financial assistance for this purpose.

**Principle 13** In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population.

**Principle 14** Rational planning constitutes an essential tool for reconciling any conflict between the needs of development and the need to protect and improve the environment.

**Principle 15** Planning must be applied to human settlements and urbanization with a view to avoiding adverse effects on the environment and obtaining maximum social, economic
and environmental benefits for all. In this respect projects which are designed for colonialist and racist domination must be abandoned.

**Principle 16** Demographic policies which are without prejudice to basic human rights and which are deemed appropriate by Governments concerned should be applied in those regions where the rate of population growth or excessive population concentrations are likely to have adverse effects on the environment of the human environment and impede development.

**Principle 17** Appropriate national institutions must be entrusted with the task of planning, managing or controlling the environmental resources of States with a view to enhancing environmental quality.

**Principle 18** Science and technology, as part of their contribution to economic and social development, must be applied to the identification, avoidance and control of environmental risks and the solution of environmental problems and for the common good of mankind.

**Principle 19** Education in environmental matters, for the younger generation as well as adults, giving due consideration to the underprivileged, is essential in order to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in protecting and improving the environment in its full human dimension. It is also essential that mass media of communications avoid contributing to the deterioration of the environment, but, on the contrary, disseminates information of an educational nature on the need to project and improve the environment in order to enable man to develop in every respect.

**Principle 20** Scientific research and development in the context of environmental problems, both national and multinational, must be promoted in all countries, especially the developing countries. In this connection, the free flow of up-to-date scientific information and transfer of experience must be supported and assisted, to facilitate the solution of environmental problems; environmental technologies should be made available to developing countries on terms which would encourage their wide dissemination without constituting an economic burden on the developing countries.

**Principle 21** States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

**Principle 22** States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.

**Principle 23** Without prejudice to such criteria as may be agreed upon by the international community, or to standards which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country, and the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries.

**Principle 24** International matters concerning the protection and improvement of the environment should be handled in a cooperative spirit by all countries, big and small, on an equal footing. Cooperation through multilateral or bilateral arrangements or other
appropriate means is essential to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all States.

**Principle 25** States shall ensure that international organizations play a coordinated, efficient and dynamic role for the protection and improvement of the environment.

**Principle 26** Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons.
EXERCISES

Exercise 1-1 – Critically reviewing the UNGC

Read the three extracts (below), and then do the following exercises:

- In groups, draw up a table with two columns, one with the Global Compact proponents’ arguments, the other with its critics’ arguments. Discuss these, and if possible try to distil them into a few key words.
- Each group will present their respective tables, and the class will come up with a definitive set of arguments for and against.
- The class will be split in half, with one half role-playing as Global Compact proponents and the other as its critics. Participate in a debate with the following title: “The Global Compact: An excuse for business-as-usual or the basis for shared responsibility?”

When doing the readings, consider the following issues:

- The extent to which the Global Compact can be distinguished from other international initiatives (such as ISO 14001), and what added-value the Compact brings in comparison to these other initiatives.
- Consider who actually drives the initiative? Is it the UN, big business, multi-stakeholders or individuals? What is their motivation for doing so?
- Critically review the issue of quality control, the entry and exit rules, the monitoring and follow-up activities, and annual communications and reporting.
- Consider integrity and trust issues: will the Compact inspire real change, or can it be used as a basis for simple window dressing?
- Is the implementation of the principles realistic? How can its implementation be enhanced? Consider such issues as management tools, the extent of internal capacity, and flexibility / relevance to local needs.
Extract 1 – The Global Compact: Why All the Fuss?

The two largest global development gatherings of 2002 – the World Social Forum in Porto Alegre, Brazil and the World Summit on Sustainable Development in Johannesburg, South Africa – focused considerable attention on the issue of public-private partnerships, in particular United Nations business partnerships. The most high profile of these is the Global Compact, formally launched in July 2000, which aims to enlist the support of 1,000 companies over a three-year period. Delegates are expected to publicly commit themselves to nine principles associated with environmental protection, labour standards and human rights, and to publicise, on the Global Compact web site, “good practice” examples that demonstrate compliance with these principles.

Opinions on the Global Compact are fairly polarised. Proponents generally see the initiative as an innovative and pragmatic approach that can reform corporate culture by instilling new values and mobilise the resources of big business for social and sustainable development. It is regarded as an exemplary form of “good governance”, where cooperation and voluntary approaches win out over conflict and heavy-handed regulation. It is also intended to promote “social” or “organizational learning”, where business and other stakeholders learn through multi-stakeholder dialogue, analysis and networking.

Critics of the initiative are concerned that it may be doing more to enhance the reputation of big business than aiding the environment and people in need. They are worried that companies with a reputation for malpractice have been welcomed into the Global Compact, and that the conditions imposed on business to comply with the principles are very weak. Companies can pick and choose among the ten principles they want to address and there is no monitoring of compliance. The focus on best practices diverts attention from malpractice, “greenwash” and structural and other factors that encourage corporate irresponsibility or a “business-as-usual” attitude.

Some supporters and critics overemphasise the advantages and disadvantages of the Global Compact. Those who see it as a major institutional development should remember that there are 65,000 transnational corporations (TNCs) worldwide, of which only a few will participate in this initiative and, once engaged, they have to do relatively little to comply. Furthermore, an increasing number of northern TNCs are already adopting socially responsible initiatives and are unlikely to significantly strengthen or scale up their efforts as a result of the Global Compact.

Some critics underestimate the importance of using the UN infrastructure to create spaces, where social, environmental and human rights issues can come to the fore of the international development agenda. This is particularly important in the contemporary era of neo-liberalism and free-market dogmatism that has relegated social and environmental issues to secondary status. In developing countries, in particular, the Global Compact can play a role in raising the awareness of business leaders on issues of corporate social responsibility. Furthermore, such initiatives may play a role in reinvigorating certain aspects of international “soft law,” in particular the International Labour Organization (ILO) Core Conventions and the Universal Declaration of Human Rights. In the case of the latter, the Global Compact reaffirms the fact that the Declaration applies not only to Governments but also to corporations. The Compact also resurrects the “precautionary principle” agreed upon at the Earth Summit in 1992. This is important at a time when unproven genetically modified organism (GMO) technology is transforming agriculture and affecting food aid and consumption. It is also useful for the United Nations to centralise within one office the information and an analysis of initiatives taken by corporations to improve their performance.

Peter Utting, UN Chronicle No. 1, 2003
**Extract 2**

**Major US companies doubt Global Compact credentials**

Four years ago, Kofi Annan, secretary-general of the United Nations (UN), addressing the Davos World Economic Forum in January 1999, challenged business leaders to join a "global compact of shared values and principles" and give globalisation a human face.

Annan argued that shared values provided a stable environment for a world market and that without these explicit values, business could expect backlashes from protectionism, populism, fanaticism and terrorism.

Following the Davos meeting, Annan and a group of business leaders formulated nine principles, which have come to be known as the UN Global Compact. By enlisting business to voluntarily follow these nine principles, which concern human rights, labour and the environment, the hope is that a more humane world can be fashioned. The intention of the compact is to increase and diffuse the benefits of global economic development through voluntary corporate policies and actions. If successful, it will help guide a new and emerging role for business in society.

But while to date more than 200 of the largest multinational companies have joined the compact, there is a serious problem in that very few major US companies have signed up.

In fact, only five of the major US multinationals had joined the global compact as of March this year: (Cisco Systems; Dupont; Hewlett-Packard; Nike and Pfizer).

At a conference on the Global Compact staged at the University of Notre Dame in April last year, two issues emerged which shed light on the reluctance of US multinationals to endorse the Compact.

The first of these was accountability. In an environment of increasing scepticism, the legitimacy of the Global Compact is in question without a traditional accountability structure or monitoring system in place. Companies participating may become targets of nongovernmental organisations and those critical of the World Trade Organisation and other developments in the global economy.

Given this environment in the US, multinationals are asking whether signing the compact may be more trouble than it is worth.

It is true that, at present, the Global Compact lacks adequate accountability structures and the lack of an independent monitoring provision is a frequent criticism.

Given the structure of the compact, it is quite possible for a company with a poor record in labour or the environment to highlight another area of corporate citizenship in its annual report where its record is superlative. The general public will only receive the information about a company that the company chooses to report.

As a result, critics continue to call for some performance standards and verification procedures. Compact officials respond that this criticism misses the point, saying that "the Global Compact is not designed as a code of conduct. Rather it is a means to serve as a (frame) of reference to stimulate best practices and to bring about convergence around universally shared values."

It is a vehicle to gain consensus on the moral purpose of business.

The danger is that while the Compact is a noble endeavour, unless the participating companies are involved in some sort of independent monitoring and verification system, corporate critics, even those who are in the moderate camp, may never acknowledge its legitimacy.

Perhaps the best hope for transparency and accountability standards lacking in the Compact is the reporting mechanisms being developed by the Global Reporting Initiative (GRI).

Sometimes called the triple bottom line (economic, environmental and social), or sustainability reporting, the attempt to disclose and measure the full impact of a business is the project of the GRI.

At present, the compact encourages signatory companies to participate in the GRI, but does not require it. (A good discussion of the triple bottom line and sustainability reporting is found in the King Report on Corporate Governance for SA: 2002).

Thus, while the Global Compact has no standard reporting provision and independent monitoring feature at this time, it incorporates a process open to incremental change that will likely lead to an appropriation of these dimensions. Its inter-organisational, public policy network and its focus on local networks give the compact the capacity to adapt as necessary. It will likely be increasingly clear that either the GRI or something similar to it is a necessary complement to the compact. US companies would be well advised to join this endeavour and help shape its future.

The other major issue troubling US companies is the issue of human rights. While the companies are in broad agreement with the human rights principles of the Global Compact, there is some apprehension...
that joining the compact could lead to societal expectations that companies routinely have the obligation of correcting rights abuses. In the US context, where litigiousness is a fact of life, companies fear the compact may be considered a contract by some stakeholders. The companies want to know what their obligations are under the compact and where and how the line is drawn on obligations in the area of human rights.

Here too their misgivings may be assuaged. Scholars argue that while the right to, for example, medicines and care is a moral right, it is not a right that must be met by multinational corporations. The obligations of corporations are best shaped by an informed public and there is much in the ethical literature to assist in that education. The general consensus is that to overburden business with major new roles in society is to run the risk of killing the geese that are laying the golden eggs.

This is not to say that corporations should not be subject to criticism and pressure when it is deserved, but correcting rights abuses should not be a required role for a for-profit organisation. Although, as the stakeholder model makes clear, the responsibilities of a corporation go beyond maximising return on investment and often companies may be able to provide for essential rights, these new responsibilities should be informed by the economic mission of business. For example, going beyond the traditional model of the role of business in society, some large companies in South Africa (AngloGold; De Beers; Heineken; Coca-Cola; Daimler Chrysler and Anglo American) recently decided to provide antiretrovirals to their workers and some family members. Again, US companies, as well as those throughout the world, would be better off joining the global compact so as to contribute to the shaping of these new expectations of business in society.

The global compact of today is a far cry from a force that might shape significant changes in the moral values of the global community.

The authors of the compact envision it as an incremental process of learning and improvement rooted in local networks sharing the same universal values that is now only at the starting gate.

Not unlike the Rev Leon Sullivan’s famous Sullivan Principles which helped convince General Motors and 11 other major corporations to pull out of South Africa until apartheid ended the initial programmes are only the seeds of the many flowers to bloom in the future. And it is precisely this challenge of fostering the growth of humane values in the global society, a challenge heretofore managed by nation states for their own domestic situation, that marks the unique mission of the Global Compact.

Extract 3  

Corporations and the UN: Nike and others “bluewash” their images

The last few years have witnessed the increasing blurring of corporate and governmental roles in the international sphere – none more worrisome, perhaps, than the United Nations cozying up to big business. With a surge in private-public partnerships among various U.N. agencies, U.N. Secretary General Kofi Annan is leading the international organization into ever more intrusive and entangling ties between the U.N. and multinational corporations.

One recent misstep is the U.N.’s “Global Compact.” With the disappointing support of some international human rights and environmental organizations, the U.N. has asked multinational corporations to sign on to the compact’s unenforceable and overly vague code of conduct. Companies are able to sign on to the compact and “bluewash” themselves, as critics at the Transnational Research and Action Center in San Francisco have labelled the effort by image-impaired corporations to repair public perceptions by hooking up with the U.N. in a report, Tangled Up In Blue.

“The U.N. must not become complicit in the positive branding of corporations that violate U.N. principles,” warned a coalition of sustainable development activists organised by TRAC, in a July letter to Annan. “Given that there is no provision for monitoring a corporation’s record in abiding by U.N. principles, the Guidelines [the Guidelines on Cooperation Between the United Nations and the Business Community, issued to clarify which companies are eligible for U.N. partnerships] modalities for partnerships are quite susceptible to abuse. For example, a company with widespread labor or environmental violations may be able to join with the U.N. in a relatively minor cooperative project, and gain all the benefits of association with the U.N. without any responsibilities. The U.N. would have no way to determine whether the company, on balance, is contributing to U.N. goals or preventing their realization.”

This kind of bluewashing is already taking place. Among the early supporters of the compact are Nike, Shell, and Rio Tinto. Nike has employed sweatshop workers in Asia and elsewhere to produce its overpriced athletic wear. Shell has been targeted by activists for its ties to the Nigerian government, which has a dismal human rights history. Rio Tinto, one of the world’s largest mining companies, has been associated with environmental and human rights disasters around the world. These are three of the last companies you would expect to see on a list of responsible businesses.

Just as troublesome, Kofi Annan has framed the compact in the context of acceptance and promotion of corporate globalization – a kind of plea to business leaders to recognise their own self-interest in restraining some of their worst abuses.

In exchange for corporations’ signing on to the Global Compact, he said when first announcing the initiative, the U.N. would seek both to make it easy for companies to enter into partnerships with U.N. agencies and to advocate for speeding up corporate globalization. “You may find it useful to interact with us through our newly created Web site, www.un.org/partners, which offers one-stop shopping for corporations interested in the United Nations,” Koffi Annan told business leaders gathered in January 1999 at the Davos World Economic Forum. “More important, perhaps, is what we can do in the political arena, to help make the case for and maintain an environment which favors trade and open markets.”

The promise of the United Nations, if only sometimes realised, is to serve as an intergovernmental body to advance justice, human rights, and sustainable development worldwide. Not long ago the U.N.’s Center on Transnational Corporations collected critical data on multinationals and published incisive critiques of growing corporate power. That growing power eventually was sufficient to force the closure of the Center on Transnational Corporations, thanks to the demands of the United States. Now, with the U.N. permitting itself to become perverted with corporate sponsorships, partnerships, and other entanglements, it risks veering down the road of commercialization and marginalization. An effective United Nations must be free of corporate encumbrances. Its agencies should be the leading critics of the many ways that corporate globalization is functioning to undermine the U.N. missions to advance ecological sustainability, human rights, and global economic justice – not apologists and collaborators with the dominant corporate order.

Ralph Nader, September 8, San Francisco Bay Guardian
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Environmental Principles Training Package

Module 2

THE BUSINESS CASE FOR THE GLOBAL COMPACT ENVIRONMENTAL PRINCIPLES
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MODULE 2: The Business Case for the UNGC Environmental Principles

Session 1: Setting the Scene: The State of the Global Environment

OBJECTIVES

The objectives of this session are to:

- obtain an overview of the current state of the natural environment, critically assessing whether there is cause for concern;
- review how corporate sustainability has emerged over the past three decades, and
- set the context for the next session in which you will review some of the key business case arguments for implementing effective environmental management practices.

Regional highlights: Africa

The increasing numbers of African countries facing water stress and scarcity, and land degradation, are major environmental issues in the region. The rising costs of water treatment, food imports, medical treatment and soil conservation measures are not only increasing human vulnerability and health insecurity but are also draining African countries of their economic resources. The expansion of agriculture into marginal areas and clearance of natural habitats such as forests and wetlands has been a major driving force behind land degradation. The loss of biological resources translates into loss of economic potential and options for commercial development in the future. These negative changes, however, have been tempered by Africa’s impressive wildlife conservation record, including a well-established network of protected areas and the region’s commitment to multilateral environmental agreements. African countries also participate in many regional and sub-regional initiatives and programmes. Notable achievements include the 1968 African Convention on the Conservation of Nature and Natural Resources (currently being updated) and the 1991 Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous Waste within Africa.

Regional highlights: Asia and the Pacific

Overpopulation, poverty and lack of enforcement of policy measures have compounded environmental problems in many parts of the region. Biological resources have long been of subsistence importance, and have been increasingly exploited for trade. About three-quarters of known or suspected species extinctions have occurred on isolated islands in the region. Protected areas constitute only 5 per cent of the total area, compared to the IUCN benchmark of 10 per cent. Discharge of sewage and other wastes has heavily polluted freshwater. Sedimentation in rivers and reservoirs caused by large-scale deforestation has also resulted in big economic losses. Urbanization, industrialization and tourism, coupled with a growing coastal population, have degraded many coastal areas. More than 60 per cent of Asia’s mangroves have been converted to aquaculture farms. Air pollution levels in some cities are among the highest in the world. While most environmental trends have been negative, positive changes have included improvement in governance by public authorities, growing environmental awareness and public participation, and increasing environmental awareness in industry.

Regional highlights: Europe

The environmental situation is mixed: there have been some noticeable improvements over the past 30 years (for example, emissions to air); the state of biodiversity and forests has not changed greatly; and other situations have undergone marked degradation (freshwater, and some coastal and marine areas). By the 1990s, the European atmosphere had generally improved significantly. Increasing efforts to safeguard natural areas and biodiversity may signal a turnaround in species protection. Freshwater stocks are unevenly distributed, with parts of southern, western and southeastern Europe being noticeably water stressed. The health of coastal and marine areas has noticeably worsened, particularly in southern and western Europe and the Mediterranean coastline. Geographically, there has been an amelioration of some environmental problems in Western Europe, and a common (but far from universal) deterioration in Central and Eastern Europe, with recent signs of a broad recovery in many countries. The development of strong environmental policies in the European Union promises continuing progress in the area.

Regional highlights: Latin America and the Caribbean

Environmental degradation in Latin America and the Caribbean has increased over the past 30 years. The main pressures on the environment and natural resources are the rising population, increasing inequality of incomes, limited planning, especially in urban areas, and the high dependence of many economies on natural resources exploitation. More than 300 million ha of land have been degraded and almost 30 per cent of the reefs in the Caribbean are considered to be at risk. Of the more than 400 million ha of natural forest lost worldwide over the past 30 years, more than 40 per cent was in the region. Urban environmental problems, especially air pollution, water contamination and inadequate waste disposal, are having severe health impacts on people living in cities, currently 75 per cent of the
population. The increasing frequency and intensity of natural disasters, possibly linked to climate change, is having a high human and financial cost. The poorest populations, especially urban ones, are the most vulnerable to such disasters.

Regional highlights: North America
North America is a major consumer of the world’s natural resources and producer of its wastes, and its per capita impact on the global environment is larger than that of any other region. Resource conservation in North America has been less successful than pollution abatement, and per capita consumption has increased steadily since 1972. There has been significant progress in controlling some forms of air and water pollution and in continuing a trend to set aside protected areas. During the 1990s, North American free trade strengthened the economic ties between Canada and the United States. At the same time, regional environmental degradation led to an increased recognition of the interdependent nature of cross-border ecosystems. The two countries strengthened cooperative measures to address transboundary pollution, agreeing to more aggressive NOx emission controls, for example. They also undertook to conserve the continent’s wetland habitats to protect waterfowl and other migratory species. The impact of introduced exotic species on biological diversity became of increasing environmental concern with the liberalization of trade.

Regional highlights: West Asia
Conservation and protection of freshwater resources is a top priority, particularly on the Arabian Peninsula where water deficits are being met mainly through exploitation of groundwater resources. Countries are developing water policies to manage water scarcity by increasing both water supply and conservation, and introducing more efficient irrigation. Land degradation and food security continue to be key environmental issues. The region’s seas include some of the busiest shipping areas of the world, making the marine environment susceptible to pollution events such as oil spills. Per capita hazardous waste production is among the highest in the world due to the types of industry in the region. Air emissions from power stations, desalination plants and industrial installations are also of concern.

Regional highlights: the Polar Regions
The major environmental issues in the polar regions include the depletion of the stratospheric ozone layer, the long-range transport of air pollutants, warming associated with global climate change, the decline of several bird, mammal and fish species, and pollution of major rivers. In the Arctic, average yearly ozone levels in the 1990s had declined by 10 per cent from the late 1970s, increasing the risk of snow blindness and sunburn. Climate change is expected to be more extreme in the polar regions than anywhere else. Human activities are major threats to biodiversity in the Arctic. The warming trend is reducing the ice habitat for species such as the polar bear and walrus. In the Antarctic, sealing and whaling have reduced populations in the Southern Ocean. Eutrophication is a recent problem in several lakes in Scandinavia. One of the major developments in the Arctic is public opposition to dam construction, particularly in the Nordic countries. For example, in 2001 Iceland’s National Planning Agency rejected plans for a hydroelectric power project that would have dammed two of the three main rivers flowing from Europe’s largest glacier and destroyed an extensive wilderness.
Options for Action

The world is currently plagued by increasing poverty and continually widening divisions between the haves and the have-nots. These divisions — the environmental divide, the policy divide, the vulnerability gap and the lifestyle divide — all threaten sustainable development. They must be addressed urgently, and with greater success than has often been the case in the past. Certain key areas of attention have been identified for global action at all levels to ensure the success of sustainable development. Prime among them are alleviating poverty for the world’s have-nots, reducing excessive consumption among the more affluent, reducing the debt burden of developing countries, and ensuring adequate governance structures and funding for the environment.

Underlying this action, however, must be the greater provision of and access to information in all its forms as the fundamental basis of successful planning and decision-making. The information revolution holds the possibility of providing cheap and reliable information in appropriate forms to all stakeholders in the environment — decision makers, local communities, the general public — thus enabling them to participate more meaningfully in decisions and actions that determine the courses of their daily lives and of those of succeeding generations.

The final section of GEO-3 presents possible policy options for the future based on UNEP experience, the GEO-3 assessment and wide consultations at different levels. The suggestions are intended as a check-list from which to make appropriate selections for action. The overriding need in policy development is for a balanced approach towards sustainable development. From the environment perspective, this means bringing the environment in from the margins to the heart of development. The fields where action is suggested cover the need to:

- Rethink environmental institutions because they need to adapt to new roles and partnerships to fulfil present obligations and confront emerging environmental challenges.
- Strengthen the policy cycle so that it becomes more rigorous, systematic, integrated and able to develop policies that are better attuned to specific localities and situations.
- Provide an enhanced international policy framework to overcome the fragmentation and duplication inherent in the present system.
- Use trade more effectively for the benefit of sustainable development to capitalise on the new opportunities provided by trade liberalization.
- Harness technology for the environment and manage the associated risks to maximise the potential of new technologies to deliver substantial environmental and social gains.
- Adjust and coordinate policy instruments, including various legal frameworks, and measures such as valuing environmental goods and services, ensuring that markets work for sustainable development and promoting voluntary initiatives, to develop appropriate packages that work more effectively for the environment.
- Monitor policy performance with the aim of improving levels of implementation, enforcement and compliance.
- Re-define and share roles and responsibilities between local, regional and global levels to provide efficient solutions to managing complex and varied situations at a variety of scales.
Outlook 2002–2032

GEO-3 emphasises that the next 30 years will be as crucial as the past 30 for shaping the future of the environment. Old troubles will persist and fresh challenges will emerge as increasingly heavy demands are placed upon resources that, in many cases, are already in a fragile state. The increasing pace of change and degree of interaction between regions and issues has made it more difficult than ever to look into the future with confidence. GEO-3 uses four scenarios to explore what the future could be, depending on different policy approaches. The scenarios, which span developments in many overlapping areas including population, economics, technology and governance, are described in the boxes that follow. They are:

Markets First: Most of the world adopts the values and expectations prevailing in today’s industrialised countries. The wealth of nations and the optimal play of market forces dominate social and political agendas. Trust is placed in further globalization and liberalization to enhance corporate wealth, create new enterprises and livelihoods, and so help people and communities to afford to insurance against — or pay to fix — social and environmental problems. Ethical investors, together with citizen and consumer groups, try to exercise growing corrective influence but are undermined by economic imperatives. The powers of state officials, planners and lawmakers to regulate society, economy and the environment continue to be overwhelmed by expanding demands.

Policy First: Decisive initiatives are taken by governments in an attempt to reach specific social and environmental goals. A coordinated pro-environment and anti-poverty drive balances the momentum for economic development at any cost. Environmental and social costs and gains are factored into policy measures, regulatory frameworks and planning processes. All these are reinforced by fiscal levers or incentives such as carbon taxes and tax breaks. International ‘soft law’ treaties and binding instruments affecting environment and development are integrated into unified blueprints and their status in law is upgraded, though fresh provision is made for open consultation processes to allow for regional and local variants.

Security First: This scenario assumes a world of striking disparities where inequality and conflict prevail. Socio-economic and environmental stresses give rise to waves of protest and counteraction. As such troubles become increasingly prevalent, the more powerful and wealthy groups focus on self-protection, creating enclaves akin to the present day ‘gated communities’. Such islands of advantage provide a degree of enhanced security and economic benefits for dependent communities in their immediate surroundings but they exclude the disadvantaged mass of outsiders. Welfare and regulatory services fall into disuse but market forces continue to operate outside the walls.

Sustainability First: A new environment and development paradigm emerges in response to the challenge of sustainability, supported by new, more equitable values and institutions. A more visionary state of affairs prevails, where radical shifts in the way people interact with one another and with the world around them stimulate and support sustainable policy measures and accountable corporate behaviour. There is much fuller collaboration between governments, citizens and other stakeholder groups in decision-making on issues of close common concern. A consensus is reached on what needs to be done to satisfy basic needs and realise personal goals without beggaring others or spoiling the outlook for posterity.
Case Study 2-1: Norsk Hydro – Norway

Keywords: Cleaner technology, LCA

Norsk Hydro operates globally in environmentally sensitive and technically complex fields such as plant nutrients, offshore oil and gas, aluminium, magnesium, and petrochemicals. Because of Norway’s early resolve to rectify environmental ills and the diligence of its regulating authorities, the company was an early target for the green movement. Norsk Hydro has been extensively regulated, monitored, and challenged.

In response to these and other emerging pressures, Norsk Hydro’s environmental work evolved in four phases.

- In Phase 1, the ‘repairs phase,’ efforts were concentrated on cleaning up local pollution and amending ‘sins of the past’.
- In Phase 2, the ‘preventive phase’, the focus changed to developing and installing ‘cleaner technology’, technology that prevents pollution from occurring in the first place.
- Phase 3, the ‘business development phase,’ concentrated on analyzing and minimizing the environmental impact of products throughout their entire life cycle, from raw materials, through production and use, to their subsequent recycling or deposition.
- In Phase 4, the ‘globalization phase’, Norsk Hydro began addressing the challenges of globalization of economies and markets, as well as global environmental issues such as climate change and the Kyoto protocol.

Each phase has provided Norsk Hydro with organizational experiences and knowledge. The ‘repairs’ phase did not result from a business strategy, nor were its projects closely linked to business activities. In fact, the opposite occurred, with the individual projects adding up to become the environmental strategy. These projects were managed internally as a functional-driven process and implemented on an ad-hoc basis. However, when the media, NGOs, and authorities highlighted some of the environmental issues, it became clear that top management would have to become more involved. Norsk Hydro had long been a ‘closed’ company regarding environmental issues. A change of direction and openness was necessary.

The second phase made environmental work a key part of operations, integrated throughout the organization. Clear lines of responsibility were established, goals set, reporting improved, results analyzed and organizational expertise developed. Systematic work on quality management was undertaken in the 1980s and the company experienced, as did many others, that ‘what gets measured, gets done.’ Pockets of excellence were emerging; however, organization-wide performance improvements were not yet strong enough. The challenge was to identify best practices internally and externally and to facilitate rapid adoption throughout the company.

In the third phase, the focus extended to applying experience and expertise to the life-cycle aspect of products. Environmental care, in its broadest sense, was being transformed into an important strategic business issue. Environmental issues took on a firm position as an important part of the strategic decision-making process. Through Life Cycle Analysis (LCA), Norsk Hydro gained insights that enabled application of the most advanced knowledge. The company also sought to establish closer links between customers, business needs, and R&D activities. It worked to stimulate creativity within the organization and in external research institutions. This extended across traditional organizational barriers and traditional scientific disciplines, to enhance conceptual and
technological innovation. It was recognised that the potential for new commercial opportunities would arise from new combinations of existing and emerging technologies.

Phase 4 shifted the focus to bringing together the three pillars of sustainable development: economic, environmental and social responsibility. This phase addresses more broadly the issues of globalization, and many new issues in addition to the previously recognised environmental concerns are emerging. Ethical challenges are more pronounced when companies establish operations in regions with clear cultural differences, and in developing countries. Themes like human rights and considerations for the indigenous population, and other questions related to values are raised. Coming to developing countries with a background in Norwegian culture and industry is difficult. This phase has required a greater collaboration and increased openness. Norsk Hydro recognised that if a company is to create business value from its efforts, environmental and social issues could not be handled in isolation.

“As a business, we have shifted our focus from tackling individual issues to the systematic integration of sustainable conduct into our business operations and our management systems,” states Egil Myckleburst, president and CEO of Norsk Hydro. “In the course of my 10 years at Norsk Hydro, I increasingly recognised that development trends, in connection with population growth, environmental hazards, social differences, globalization, greater transparency in industry and society in general, plus ever increasing competition, lead to the emergence of a new agenda for managing the industrial enterprises of the future.”

Case study adapted from: www.wbcsd.ch
EXERCISES

Exercise 2-1 – Identifying environmental concerns
You will be shown a picture of Earth from space. Individually, list what you see to be the main environmental concerns at a global and a national level. In doing so:
- Explain the issue that you have identified.
- Describe any incidents which you have experienced which relate to the issues identified above.
- Some delegates may be selected to report back to the class as a whole.

Exercise 2-2 – Key definitions
Divide yourselves into groups of four or five and note down definitions (as you currently understand them) of the following terms:
- Cleaner production
- Corporate social responsibility
- Corporate citizenship
- Corporate social investment
- Socially responsible investment
- Environmental impact assessment
- Environmental auditing
- GHG emissions
- ISO 14000
- Stakeholders
- Triple bottom line

Report back to the class in your groups.
Exercise 2-3 – Understanding sustainable development

1. What do you understand by the term sustainable? Illustrate your answer using examples of situations in which activities, practices or processes are sustainable, such as in case study 2-1, and unsustainable.

2. What do you think is the relationship between sustainable development and:
   - Population growth
   - Technological innovation
   - The use of finite or non-renewable resources?

3. Do you think you share the values of sustainable development? To help you get your thoughts into perspective, consider the following:

   Rank the following in order of importance/concern (for you personally). Rank from 1-10, with 1 meaning you hardly ever think about it, and 10 being something you think about constantly:
   - Climate Change
   - Making more money
   - Waste and consumerism
   - Upgrading your cell phone
   - Habitat destruction
   - Buying a bigger car
   - Discrimination at work
   - Your next holiday
   - Climbing the corporate ladder
   - Genetically modified organisms

   Now consider this list again and identify the extent you have taken action on the various issues. Share your lists with the group, and discuss whether there is a difference between awareness and action.
MODULE 2: The Business Case for the Global Compact Environmental Principles

Session 2: The Business Case: The Business Benefits of Corporate Environmentalism

OBJECTIVES

The objectives of this session are to:

- Develop an understanding of the various business (i.e. financial) benefits associated with sound environmental management practices.
- Appreciate the role (and limitations) of relying on the business case for ensuring sustainable development.
- Understand some of the constraints against more widespread implementation of the business case.
SUSTAINABILITY AND BUSINESS COMPETITIVENESS: EXECUTIVE SUMMARY

Measuring the business competitive advantage from social responsibility and sustainability

Sustainability and business competitiveness

A business with strong corporate social responsibility will often be more successful in generating Economic Value Added, for reasons rooted in business strategy. This was the key finding of a workshop commissioned in the United Kingdom by the Department of Trade and Industry and organised by Forum for the Future in May 2003.

It was attended by 70 senior business researchers and practitioners from the Chief Economists of Shell and BA to the Senior Corporate Responsibility Adviser at Vodafone. The finding that corporate social responsibility (CSR) is not necessarily a cost of doing business was revealed by the significant overlaps between stakeholder and environmental management concerns and what modern resource-based business strategy sees as the source of business competitive success.

The workshop also found that parallel research on business intangibles and intellectual capital, including the contribution stakeholder management could make to a company’s competitive advantage, has direct application. Many of the tools developed to measure business intangibles could be applied to measure the shareholder value of a company’s CSR policies and performance, offering for the first time robust evidence of the business value of corporate sustainability and responsibility. Past attempts to measure the business case have mostly concentrated on eco-efficiency cost savings and green or ethical price premiums.

With some notable exceptions the resulting numbers have been small and relatively insignificant compared with other pressing issues for business. However, most previous studies have omitted a major contribution to business success from stakeholder and environmental management: their contribution to a company’s competitive advantage in its main markets. So a wider group of delegates was assembled than is usual when viewing CSR and sustainability. Researchers and practitioners from business strategy, intangible value and businesses themselves were brought together to discuss how sustainability performance could contribute to competitive advantage and business success, and how it could be measured.

Economic Value Added by CSR and sustainability

The priority placed by the DTI on identifying transparent and quantifiable links between sustainability/CSR and business competitiveness was emphasised by the Minister of State for Energy, e-Commerce and Postal Services, Stephen Timms MP.

Company success depends on balancing multiple priorities and stakeholder interests, and an exclusive focus on shareholder value often fails in its own terms. These were themes illustrated strongly by John Kay, a leading economist and commentator in this area.

Understanding and measurement tools have been developed to assess how intangibles drive value creation in modern business. Richard Youngman of the PRISM project, an EC-funded research initiative on the intangible economy, described their obvious applications for sustainability and CSR.

A new project, ‘Sustainability and Business Competitiveness’, is developing tools to measure the contribution of business sustainability to business competitive advantage, by applying resource-based business strategy to link sustainability performance to the key sources of competitive advantage. Brian Pearce, of Forum for the Future, illustrated the importance of those sources: key internal and external relationships, reputation, capacity to innovate and strategic assets.

Clustering of responsible business and research groups has been found to maximise innovation and competitiveness in a recent project described by John Sabapathy, of AccountAbility.

Measurement and modelling of business intangibles is possible in practice, as Jonathan Low, from Cap Gemini Ernst and Young, demonstrated with his Value Creation Index model linking various indicators of intangible assets to market valuation.

Measuring the contribution of CSR to competitive advantage

Businesses shared their experience in measuring the contribution of their CSR and sustainability policies to business success.
Capacity to innovate can be enhanced by both sustainability and corporate social responsibility. Vodafone has developed both niche products and overall brand, while Interface has been able to develop a best selling carpet based on how nature designs a good ground cover.

Reputation and the importance of CSR and sustainability are clearly linked, particularly in developed, higher-income, markets. BT collects reliable attitude data every month from thousands of UK customers through an independent research agency. Based on eighteen months tracking, BT has identified that CSR attitude accounts for at least 25% of the dimensions that drive BT’s corporate reputation. Corporate reputation is directly linked as a driver of customer satisfaction thus establishing a direct link between CSR and customer satisfaction;

Key internal and external relationships are widely accepted as a source of competitive advantage that could be enhanced through stakeholder management. Carillion found significant business benefits in a recent mapping exercise that quantified the effect links with key stakeholders had upon value creation. Statistical modelling by The Work Foundation showed how important high performance workplaces are for UK productivity growth.

Strategic assets are an obvious source of competitive advantage as their owner has an important but very scarce resource. Several businesses demonstrated the value of stakeholder and environmental management to maintaining the licence to operate that asset with regulators and local communities (e.g. British Airway’s hub airport slots at Heathrow).

**Conclusions**

The workshop directly addressed the question of whether CSR and sustainability made a positive contribution to business success, and came to the qualified conclusion that they do. This was an important conclusion in view of the views to the contrary expressed by some influential commentators. The delegates believed that the mistake made by these commentators and the shareholder value movement was to regard the cost of CSR and sustainability programmes as an expense rather than, potentially, an investment in a strategic asset or distinctive capability. The theory and practical experience of business in enhancing their competitive advantage through such policies seems to be increasingly well established. There is considerable scope for developing tools to help manage these assets through a balanced scorecard approach and to help investors value CSR spending on these assets. Many of these tools are either already available or being developed for other purposes in the field of business intangibles and intellectual capital.

**Next step**

A major ‘Sustainability and Business Competitiveness’ project is underway with a number of corporations to develop a balanced scorecard to manage the sources of competitive advantage, and apply valuation tools such as real options analysis to develop the information sought by mainstream investors. The aim is to provide companies and investors with the means to manage and assess the contributions of investments in CSR to the creation of Economic Value Added and competitive advantage.

*Brian Pearce, Centre for Sustainable Investment, Forum for the Future*
EXERCISES

Exercise 2-4 – Understanding the business case
Individually, spend five minutes completing the questions below. Divide yourselves into groups of five (preferably into groups from the same company or sector), where you will take turns to discuss your answers to the questions. Select a scribe and a rapporteur to provide an overall report back to the class.

1. Are environmental issues seen to be a business driver for your firm? If yes, is this because of:
   1. The firm’s values and principles
   2. The values and principles of the staff
   3. Pressure from potential customers
   4. Pressure from NGOs and other stakeholders
   5. Competitive advantage through new products and services
   6. Competitive advantage through lower costs and better processes
   7. The effect on brand image and value
   8. Regulatory requirements

   Rank the importance to your company of each of the above potential factors.

2. Where is the main challenge for your company in dealing with environmental sustainability?
   1. Understanding the business case
   2. Understanding stakeholders’ expectations
   3. The firm’s ability to measure improved performance
   4. The technologies at the firm’s disposal
   5. Customers’ willingness to purchase more sustainable products and services
   6. Legislative and regulatory frameworks

3. Which of the following (all sustainable development spin-offs) would you see as being the most beneficial to your business? Rank them from 1-5, with 1 as the most beneficial.
   1. The launching of one or more new products/services
   2. Making major improvements to existing products/services
   3. Establishing new more efficient processes
   4. Making major improvements to existing processes/operations
   5. Developing new ways of doing business
Exercise 2-5 – Envisaging a sustainable company

Divide yourselves into groups. If you are all from diverse companies, your trainer will attempt to allocate you to a group of colleagues from a similar company/business.

In groups, you will identify what a sustainable company would look like, the road to getting there and the potential barriers en route.

- Take two or three sheets of flipchart paper and put them in a line horizontally along the wall. Go to the far right hand side of the sheet, write the word ‘Future Success’ and write down some ideas about what a sustainable company would look like. As the ideas are suggested, the scribe should write them up around the word.
- Each scribe should then draw a ‘road’ from the word success across the flipcharts back to the starting point. Write the word ‘Current’ and ask members of your group to give ideas about the current status of the company.
- The next step is for the group to look along the road from Current to Future Success position and to start thinking what barriers could come in the way and what drivers could help to overcome these.
- Brainstorm your ideas as a group onto post-it notes, indicating the level/size of the barrier or driver.
- The next step is to place a circle around the drivers and barriers that your group feels they can directly control, put a dotted circle around the ones you can influence, and put a flag shape around those you have no direct control over.
- Finally discuss what needs to happen now. Consider the things you can control/influence, the actions you are going to take, by whom, and by when. What will you do about things you cannot control or influence?
Module 3

UNDERSTANDING THE GLOBAL COMPACT ENVIRONMENTAL PRINCIPLES
MODULE 3: Understanding the UNGC
Environmental Principles

Session 1: Principle 7 – The Precautionary Approach

**OBJECTIVES**

The objectives of this session are to:
- Obtain a sound understanding of the practical implications of implementing UNGC Principle 7 – the precautionary approach.
- Test this understanding through the use of case studies.
BACKGROUND READING

Case Study 3-1: Sasol (South Africa)

Keywords: precautionary approach, stakeholder engagement

Sasol (www.sasol.com) is a multinational company with head offices in South Africa. The Sasol Group comprises fuel, chemical and related manufacturing and marketing operations, complemented by coal-mining operations, and by oil and gas exploration and production activities. Sasol supplies 42% of all the transportation fuel in South Africa, the bulk of which is produced through conversion of coal using the Fischer-Tropsch process technologies.

This case study – based on a more detailed version that was presented at a meeting of the Global Compact Learning Forums – addresses the following questions in the context of Sasol’s decision and subsequent activities relating to the phase out of leaded fuel in South Africa:

- What does the precautionary approach mean in practice?
- How was the precautionary approach understood and applied in this circumstance?
- What are the main lessons to be learnt from the experience evidenced in this case study?
- What unanswered questions and concerns are raised by this study that may have a bearing on similar future efforts by companies that may seek to adopt a precautionary approach?

Background to the Case Study

For decades, refiners have added tetraethyl lead (TEL) to petrol as a cost-effective means of increasing octane. TEL also provides engines with lubrication benefits and prevents valve seat recession in older vehicles. There are however a number of recognised health concerns regarding lead in petrol as a result of which there has been a growing move internationally to phase out leaded fuel. Unleaded petrol (ULP) was first introduced in South Africa in 1996, primarily for technical reasons, the main driver being to meet the needs of imported vehicle technology. By 2000, five years after its introduction, the market penetration of ULP was only 15%, as against an expected initial penetration of 30%. It was in this context, and with the aim of promoting greater penetration of unleaded fuel, that Sasol chose to introduce Methylcyclopentadienyl Manganese Tricarbonyl (MMT) – a cost-effective but controversial manganese-based octane improver – as an additive in their refinery process for unleaded petrol.

On the basis of a detailed examination of various alternative non-lead octane boosters, Sasol decided on using MMT as the preferred option. Recognising that there were some concerns and uncertainties regarding the use of MMT, and notwithstanding the fact that MMT had been approved for use in various OECD countries, Sasol decided from the outset to follow a transparent process and to identify and respond to stakeholder concerns, with the aim of ensuring the responsible introduction of MMT into the South African market. This decision was undertaken in the absence of any legal guidelines or requirements on fuel additives, and was seen to be the first time that such a route was followed in South Africa for the introduction of a fuel additive. This approach was seen to be in keeping with precautionary principles as embodied in South Africa’s National Environmental Management Act, and as part of the company’s commitment to the Responsible Care approach to Product Stewardship. Sasol is also a signatory to the UN Global Compact.

Implementing the Precautionary Approach

As outlined in the accompanying presentation, there are five steps that may be followed in applying the precautionary approach:
1. The first step is to assess whether a comprehensive precautionary approach is in fact required; this is ascertained by identifying the potential negative effects and evaluating the risks. If there are seen to be credible threats of harm, notwithstanding the existence of residual scientific uncertainty, then the precautionary principle demands that precautionary action be undertaken; the following steps should then be undertaken:

2. Undertake an assessment of the alternative options.
3. Adopt a transparent, inclusive and open decision-making process.
4. Implement an ongoing process of research and monitoring, periodically re-examining the decision on the basis of new information.
5. Implement the “proportionality principle” – ensuring that the costs of action to prevent hazards are not disproportionate to the likely benefits.

As part of their overall assessment of alternatives to leaded fuel Sasol undertook an initial techno-economic study of MMT. Completed in 1996, this study, which included various specification and performance tests, indicated that MMT was a desirable option. In addition to this techno-economic study a review of the international experiences with MMT was also conducted. This study showed that while the use of MMT was technically acceptable, it also highlighted that it was a controversial option, with international motor manufacturers and various environmental health NGOs campaigning against its use.

Recognising this controversy, the international review included a detailed analysis of the US EPA’s court cases involving the approval of MMT for unleaded gasoline in the US (1995), as well as the Government of Canada’s decision to continue to allow the use of MMT in Canada (1998). Following the resolution in 1998 of the restrictions on the use of MMT in Canada, Sasol decided there was a sufficient case to proceed with using MMT. An important contributing factor for this decision was the findings of a personal exposure study undertaken in Toronto, Canada (where almost 100% of the unleaded gasoline contains MMT). The conclusion of Health Canada based on the study – namely that airborne manganese resulting from combustion of MMT in gasoline powered vehicles did constitute a health risk – coupled with the fact that Canada has used MMT for 20 years, had an important bearing on Sasol’s decision.

While this international experience may be seen by some as constituting a sufficient basis for a reasonable decision based on sound science, for others there was still seen to be sufficient uncertainty and cause for concern to invoke the precautionary principle and to avoid using MMT pending further clarity. A number of organisations and individuals have maintained that further studies are required on the health and environmental impacts of MMT, and that the burden of proof should be on the suppliers of the fuel to show that such harm is not caused, before MMT is allowed. Pending answers to a list of defined questions, some have argued that “it would be prudent to err on the side of caution before putting quantities of manganese irretrievably into our environment.”

Recognising these uncertainties regarding the use of MMT – and notwithstanding the fact that MMT has been subjected to numerous studies and approved for use in various OECD countries – Sasol undertook to adopt a precautionary approach. This process involved:

- **Assessing alternatives** – since the early 1990s, the technical department of Sasol has examined the possible alternatives for non-lead octane boosters, subjecting each of these to a technical and economic assessment, and seeking to find an appropriate balance between environmental, health, socio-economic and financial considerations.

- **Entering into dialogue** – Sasol stated that, in the absence of any regulatory requirement for stakeholder participation, it was committed to follow an inclusive and transparent process.
regarding the introduction of MMT in South Africa; this process involved a lengthy process of interaction with representatives from government, other oil companies, motor vehicle manufacturers, fuel retailers, and civil society bodies, during which a number of commitments to ongoing monitoring and research were made.

- **Undertaking ongoing research and monitoring** – Sasol undertook a number of activities aimed at identifying the relevant risks associated with the use of MMT; this included an independent environmental health risk assessment, an environmental impact assessment for the dosing installation, an independent manganese exposure assessment, and various exhaust gas emission tests.

### The Precautionary Approach in Practice – Some Critical Questions

On the basis of the above review it may be argued that the process that Sasol adopted regarding its decision to use MMT may be seen to reflect a precautionary approach. Activities that support this suggestion include:

- Undertaking a comprehensive *evaluation of the risks and benefits of the various alternatives* throughout the life cycle of the alternative products
- Undertaking a thorough *review of the international experience* of MMT, with the aim of understanding the nature and risk level of the potential negative effects
- Choosing to implement a process of *consulting with key stakeholder groups* aimed at identifying and responding to their concerns relating to the use of MMT, notwithstanding the absence of any regulatory guidelines and despite indications from the international review that there was a sufficient basis to use MMT
- *Commissioning a health risk assessment* in South Africa, as well as undertaking baseline studies and follow-up investigations into the potential impact of MMT
- *Undertaking to compensate* vehicle owners for any vehicle problems that may arise specifically due to the use of petrol with MMT
- *Committing to biannually review* the dosage level and to implement possible *corrective action* based on objective and meaningful criteria for South Africa, as well as *undertaking to withdraw MMT* if it is proven to be a cause for concern.

Despite these various activities, some interested parties have suggested that these are not sufficient to constitute meaningful implementation of the precautionary principle, arguing for example that there are still too many uncertainties and too much potential harm regarding MMT, and that further research is required.

This case study highlights a number of important lessons and questions regarding the practical implications of integrating the precautionary approach within a company’s processes and operations:

- The observation is that it is frequently difficult and potentially controversial to determine whether or not the precautionary principle should be invoked. The experience in this case study raises some important questions in this regard:
  - At what stage can one assume that the available scientific information is “sufficient, conclusive, or certain”?
  - What actions are required by the proponent of the activity to provide assurance of this? And how feasible is it to provide sufficient data that something is not a threat?
  - In assessing whether the principle should be invoked, how does one judge what is an “acceptable” level of risk for society? Surely this is a political responsibility and thus primarily the responsibility of government rather than the individual corporation.
This in turn raises the question of the extent to which the individual company – in applying the precautionary principle – can reasonably be expected to take a leadership role in making any required judgements in the absence of a decision from government, and in the context of “positive” findings from an independent and transparent risk assessment process, particularly when there are potential conflicts with commercial interests.

An underlying lesson from this case study is that the adoption of an open and transparent stakeholder process forms a critical component of implementing the precautionary approach. An important question raised by this study relates to the stage in the decision-making process at which stakeholders should be engaged. Some have suggested for example that meaningful implementation of the precautionary principle would have required an earlier engagement of stakeholders. Others have maintained that in the context of the Canadian experience and from a pragmatic business perspective, Sasol’s approach may be seen as sufficiently precautionary.

_Case study presented at Global Compact Learning Forum, Belo Horizonte / Nova Lima, December 2003_
Case Study 3-2: British Telecom (UK)

Keywords: precautionary approach, auditing, community liaison officers

The principal activities of British Telecom (BT) are in telecommunications services, Internet services and IT solutions. BT submitted a case study to the Global Compact during the Pilot Phase in 2001. Their submission covers all of the principles and illustrates how work at both project and strategy level can be cross-cutting. With respect to Principle 7 the company highlights its work on the sitting of masts, or base stations, that are required for mobile telephone communications.

BT insists that a balance must be struck between providing the infrastructure that is needed to support communication services, and the concerns of the public about the possible health impacts of base stations. An independent report (the Stewart Report) on this question was published in 2001 and concluded that the balance of evidence pointed to exposure to radio frequency levels below National Radiological Protection Board guidelines as not causing adverse effects to the general population.

BT suggests that the evidence is not conclusive – the fact that no adverse effects have as yet been detected does not mean that there are no effects – and that decisions on the siting of masts need to be informed by additional factors. In particular the company believes that judgements regarding safety are best made by independent experts, and that as such the company will adopt a precautionary approach to the siting of masts that complies with the spirit of the report’s recommendations.

In accordance with this approach BT has taken the following:

- The Chief Medical Officer oversees policy, practice and communications in relation to the siting of masts.
- All existing sites have been audited for compliance with the Stewart Report guidelines and have been found to be well within recommended levels.
- BT is providing financial support to UK and European research on this issue - as set by the World Health Organisation.
- BT shares masts or uses existing sites to avoid a proliferation of ground base stations.
- BT is working on less obtrusive masts and exploring alternative siting such as on existing street furniture.
- BT employs community liaison officers to undertake informed dialogues with community leaders and representatives on the need for, and the best options for the siting of base stations.
- BT company is working with planning authorities to avoid siting near schools.

Case study adapted from: www.wbcsd.ch
Case Study 3-3: Aracruz (Brazil)

Keywords: precautionary approach, pulp and paper;

Aracruz Celulose (www.aracruz.com.br) is the world leader in the production of bleached eucalyptus pulp used to manufacture various kinds of paper. It produces around 20% of world pulp. Comprising three operational units, its manufacturing complex located in Barra do Riacho (Espírito Santo State) is the world's largest in the pulp industry, with capacity to produce 2,000,000 tons/year. Aracruz Celulose's forest areas cover a total of 363 thousand hectares in different parts of Brazil. Of these, 242 thousand are for eucalyptus plantations, while 121 thousand are covered by native forests owned by the company.

This case study – based on a more detailed version that was presented at a recent meeting of the Global Compact Learning Forum – relates to the activities undertaken by Aracruz Celulose with regard to the establishment of a maritime terminal on the coast of Bahia State, in a region very close to a national park comprising islands with reefs, natural pools and abundant sea fauna, including annual visits by humpback whales.

Background to the Case Study

Following its announcement of plans to construct a maritime terminal in Caravelas, Bahia, the city’s population was split into two opposing opinion groups: for some, the news brought hopes that the city would experience economic growth, while for others, there was a concern that the terminal would have a significant negative impact on the region’s natural environment, one of the most important natural areas in Brazil.

To the company, the establishment of the maritime terminal would significantly reduced freight expenditure, as well as creating some 300 new jobs during the construction phase, and nearly 600 direct and indirect employment opportunities once operations commenced. Furthermore, it would reduce the incidence of heavy trucks on the roads in Bahia and Espírito Santo where the company’s factories are located. Notwithstanding these benefits, the company appreciated that before the US$51 million investment could go ahead, it was essential that the environmental risks were identified and addressed. The following questions were seen as critical:

- What could be done to determine the true extent of environmental risks?
- What measures could be taken to prevent or minimise these risks?
- How should the community be brought into the discussion process?
- If the community was not convinced of the benefits, even with the required licences being obtained, then what would the implications be for the decision on whether or not to build the terminal?

Engaging stakeholders in the decision-making process

It was during the first meeting with the community, represented by around 400 people, at which Aracruz presented its proposal to construct the maritime terminal, that the divergent community views first became apparent. On the one hand, strong support was voiced by many for the jobs and tax revenue that would be generated, while on the other hand a number of NGOs – comprising, amongst others, the Humpback Whale Institute, the Ecological Patrol and Conservation International – objected to the proposal citing various concerns, in particular the impacts of the dredging process on the region’s corals and the impacts of the barges on migrating whales.

Recognising the importance of these concerns, the company undertook to find consistent, satisfactory answers to each of the issues raised and to implement appropriate response measures.
including if necessary halting the project. To address the principal concerns, the company sought the input of two of the country’s top coral experts and also financed comprehensive independent studies aimed at determining the best route for the barge ships. On the basis of the findings of the study, Aracruz committed to following what were determined as the safe routes, despite the increased costs and travel times. All of the studies and the associated monitoring activities were undertaken under the watchful eye of the NGOs.

Once the environmental impact assessments relating to construction of the terminal had been completed and the project was registered, the company came under increased pressure from politicians and many in the local community who were keen to secure the project as a means of stimulating local economic development. Company officials insisted, however, on ensuring that there would be no significant harm caused to the reefs and marine fauna, and that full agreement be reached between all parties before the terminal was constructed.

Implementing measures in response to the stakeholder process

After the extensive consultative process, agreement was finally reached and the installation licence was issued. Throughout the process, ongoing monitoring was undertaken to assess and review the impacts of the activities on the reef and on the marine organisms in the region. In addition, the company sponsored a number of initiatives including implementing measures to protect the local mangroves, planting over seven thousand indigenous trees in the area of the terminal, financing the installation of a new Coastal Fishery Management and Research Centre, and training more than 1000 local residents as a part of their commitment to providing employment to the local community.

As part of its ongoing partnership with one of the NGOs, the company has made provision for researchers to accompany each every trip on the barge ships to undertake visual and sonar monitoring of whale activity. Precautionary monitoring is now also undertaken of porpoises north of the main area of activity.

Having undertaken a comprehensive process of engagement, establishing partnerships with certain NGOs, and following-up on all of the commitments that were made during the process, the company has benefited significantly in terms of enhanced levels of trust and co-operation with the community. In the words of Henrique Ilha, chief of the Abrolhos Marine National Park:

“There were many participants, many groups of interest, and we all managed to arrive at solutions that would be satisfactory to both sides. Aracruz shared in the concern about managing environmental risks in a precautionary manner. This job gives me a lot of satisfaction, as it shows that it is possible to undertake a large project while at the same time respecting the environment.”

Case study presented at Global Compact Learning Forum, Belo Horizonte / Nova Lima, December 2003
EXERCISES

Exercise 3.1 – The precautionary approach in practice

1. The precautionary approach places the burden of proof on a company to demonstrate that its activity or technology is not harmful to the environment. Consider this statement in the context of a recent (potentially controversial) specific decision/activity in your own company/industry and discuss this in your group. In doing so, revisit some of the questions raised in the Sasol case studies. Consider also the following:
   - Do you think the approach that Sasol took represents effective implementation of the “precautionary approach”? If not, then why not?
   - What other measures should the company have taken on this issue?

2. With reference to case study 3-2 (BT) and 3-3 (Aracruz), consider the following questions:
   - Who are the primary stakeholders in this situation? Draw up a list and identify their main interests on this issue.
   - Do you think the approach that each company took on the respective issue represents effective implementation of the “precautionary approach”?
   - If not, then why not?
   - What other measures should the company have taken on this issue?
   - Has your company faced similar situations in the recent past (or perhaps it faces such a situation at present?) If so, how has your company responded? On the basis of the case studies presented here, do you think that the response should have been different? Share your thoughts on this issue with the other participants.

3. At times, full implementation of the precautionary approach may mean that a company will have to halt an otherwise profitable business venture. In this regard, some companies may draw attention to the “proportionality principle” in terms of which “the costs of action to prevent hazards should not be disproportionate to the likely benefits in both the short and long term.” (European Commission; 2000). Similarly, it has been argue that “to deny consumers the benefits of innovative, beneficial products while forcing companies to prove the impossible – that their product is completely safe and absolutely risk free – is a prescription for disaster.” (American Council on Science and Health; 1998).

   However, other more cautious observers may wish to recall the experience of CFCs. Once praised for the significant benefits they were seen to deliver with lower risk to the then current alternatives, they were subsequently found to damage the ozone layer with important resulting environmental and health implications.

   Consider the above arguments in the context of a similar decision that your company may be facing. What do you think is reasonable for a company to do? When does implementation of the precautionary approach become the responsibility mainly of government?

4. Read the extract overleaf from Boots’ website and consider the following questions:
   - What is the key lesson that you gain from this brief extract?
   - Do you think that Boots, in being “well in advance of any legal requirements” could nevertheless claim to be applying the precautionary approach?
The response of Boots (a UK-based retail pharmacy chain) to the use of CFCs in aerosols

“In the early 1980s, the ozone depletion theory was still in its infancy and was not generally accepted. One brand owner found this to their cost when attempting to relaunch their reformulated market leader antiperspirant as CFC-free. Consumers reaction to the revised product was so poor that it had to be withdrawn from the market within weeks. The brand owner concluded that, despite the question marks surrounding the role of CFCs in depleting the ozone layer, a precautionary approach should be taken. Boots, however, tackled the issue differently.

Through careful formulation, it was initially possible to reduce the amount of CFCs per product use by 70% on average (and 100% in some types of products) while still ensuring that the product continued to be acceptable to the consumer.

A lesson here, maybe, is that it is sometimes more effective to take a phased approach to removing a particular ingredient and retain customer satisfaction. As the case against CFCs grew stronger, a new generation of CFC-free products was developed, well in advance of any legal requirements.”

www.boots-plc.com/environment/
Checklist: Practical Implications of Principle 7

The following brief checklist is intended to provide general guidance to companies in assessing the extent to which they have effectively adopted and implemented the precautionary principle within relevant corporate decision-making activities.

<table>
<thead>
<tr>
<th>OPTION</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you ensured top management understanding of the implications of the principle and ensured a visible commitment to this?</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>2. Have you developed and implemented a code of conduct with a commitment to health/environment?</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>3. Have you ensured a thorough understanding of current environmental impact and baseline environmental conditions within your organisation's sphere of influence?</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>4. Have you developed a life-cycle approach to business activities to manage uncertainty and ensure transparency?</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>5. Have you developed and implemented company guidelines and procedures aimed at ensuring the consistent application of the approach throughout the company?</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>6. Do these guidelines and procedures include the following provisions:</td>
<td></td>
<td></td>
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<tr>
<td>Built in safety margins when setting standards in areas where significant uncertainty still exists.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Banning or restricting an activity whose impact on the environment is uncertain.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Promoting Best Available Technologies.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Implementing Cleaner Production and Industrial Ecology approaches (refer to Module 4 for more on these).</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Communicating with stakeholders about risks.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>R&amp;D related to the creation of more environmentally-friendly products, processes/services that could have significant long-term benefits.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>7. Have you ensured that an existing (or if necessary a new) managerial committee or steering group oversees the company's application of the precaution approach, with a particular focus on risk management activities relating to sensitive issues?</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>8. Have you implemented a structured stakeholder engagement process aimed at ensuring effective communication of information regarding uncertainties and potential risks; made use of mechanisms such as multi-stakeholder meetings, workshop discussions, focus groups and public polls combined with use of website and printed media? The following key considerations should guide a stakeholder engagement strategy:</td>
<td></td>
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<tr>
<td>Significant potential for mutual benefits.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Stakeholders should be viewed as potential assets and opportunities, rather than as liabilities and risks</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Understand that public perceptions may be driven by feelings not facts, and that instinctive feelings matter (the experience of Shell over Brant Spar is particularly relevant here).</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Continue to solicit input from stakeholders - and be adaptable.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Unsatisfied stakeholders must not be dismissed – rather show that their demands may conflict with other legitimate stakeholder needs.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Maintain effective communication with the media, recognising their interests in promoting a controversial story.</td>
<td>✔</td>
<td>X</td>
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<tr>
<td>9. Have you undertaken and provided support to independent scientific research on the issue involved, working with relevant national and international institutions? The responsibility for providing evidence lies with your organisation:</td>
<td></td>
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<tr>
<td>Your organisation, as the proponent of an activity, process, new technology, chemical or product will bear the responsibility for providing evidence regarding its safety. This is in contrast to the current norm, which requires the public to provide evidence of harm.</td>
<td>✔</td>
<td>X</td>
</tr>
<tr>
<td>Your organisation is, therefore, responsible for providing complete and accurate information on the potential human health and environmental impacts of the activity, as well as monitoring the activity over time and disclosing this information to the public.</td>
<td>✔</td>
<td>X</td>
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</table>
Your organisation is also responsible for costs incurred, if an activity is not performed in a safe or healthy manner. Industry assurance bonds or reclamation bonds are one way to ensure funds are available for a cleanup.

10. Have you joined industry-wide collaborative efforts to share knowledge and deal with issues relating to production processes/products around which high levels of uncertainty, potential harm and sensitivity exist?

11. In the context of a contentious project decision that needs to be taken, have you implemented these decision-making steps:

The first step is to assess whether in fact a precautionary approach is required. This requires that the potentially negative effects are identified, and that the scientific data relevant to these risks is evaluated. The precautionary approach is only invoked when, due to the insufficiency of the data or their inconclusive or imprecise nature, it is impossible to determine the risk in question with sufficient certainty.

Once it has been decided on the basis of this evaluation that the precautionary approach is required, then it is suggested that the following precautionary activities should be implemented:

1) Undertake an assessment of the alternative options, noting the environmental, health and economic costs and benefits of each approach (consider using the available tools). Guiding principles include:

- **Take anticipatory action** to prevent harm in the face of scientific uncertainty.
- **Explore alternatives**, including the alternative of “no action”:
  - For most activities, a range of alternative products or actions is available. It makes sense to choose the action or product that causes the least harm. The alternative of “no action” should also be considered when assessing the various alternatives. When alternatives are not readily available, it is necessary to take this into account and to begin developing such alternatives.
  - **Apply risk assessment** systematically (hazard identification, hazard characterisation, appraisal of exposure and risk characterisation), risk management and risk communication.

To help in decision-making, consider the following useful **tools** for gathering the necessary information on the potential issues and impacts associated with technological, process, planning and/or managerial changes (refer to Module 4 for more on each tool):

- **Environmental Risk Assessment** – establishes the potential for unintended environmental damage alongside other risks.
- **Life Cycle Assessment (LCA)** – explores the opportunities for more environmentally benign inputs and outputs in product and process development.
- **Environmental Impact Assessment** – ensures that the impacts of development projects are within acceptable levels.
- **Strategic Environmental Assessment** – ensures that impacts of policies and plans are taken into account and mitigated.

2) **Adopt a transparent, inclusive, and open decision-making processes** that involves interested parties in the study of the various risk management options. Guiding principles:

   - **Increase public participation in decision-making**:
   - **Ensure transparent, inclusive and open decision-making processes, as they are essential to increasing public involvement**.
   - **Provide public education about environmental and public health issues to local residents so they can evaluate alternatives**.
   - **In order to reach a good decision, residents must be empowered to assess potential short- and long-term impacts for a range of alternatives**.

3) **Implement an ongoing process of research and monitoring**, with the decision/s periodically re-examined, based on any new available information.

4) **Implement the proportionality principle**, such that the costs of action to prevent hazards are not disproportionate to the likely benefits in both the short and term.
MODULE 3: Understanding the Global Compact Environmental Principles

Session 2: Principle 8 – Environmental Responsibility

OBJECTIVES

The objectives of this session are to:
- develop a good understanding of the practical implications of implementing Principle 8, and
- test this understanding through the use of case studies.
BACKGROUND READING

Case Study 3-4: Novo Nordisk

*Keywords: triple bottom line, employee driven initiatives, employee involvement*

Novo Nordisk is a healthcare company and a world leader in diabetes care with the broadest product portfolio in the industry, including the most advanced products within the area of insulin delivery systems.

For the spirit of sustainable development to truly take hold in an organisation, it must be embedded in the daily working lives of each and every employee. This is the only way to ensure that the Triple Bottom Line is supported through every layer of the business. That is the key intention behind the company's TakeAction! employee programme. The programme was launched in January 2003 to provide employees of Novo Nordisk with a formal opportunity to initiate individual or team activities in the name of sustainable development. While Novo Nordisk employees have a long history of contributing to worthy causes in their local communities and around the world, TakeAction! provides a way to channel the energies of the many employees who wish to join together to take positive steps towards a more sustainable future.

Activities take place all over the world, including bikeathons or walkathons to raise money for people with diabetes or other healthcare needs. In one walkathon, employees of the South African affiliate raised USD 4,800 to establish a diabetes clinic.

Every initiative that helps embed sustainability into the organisation counts. This includes, for example, employees participating in World Diabetes Day events, exercising with colleagues as a way to stay healthy and help prevent the onset of type 2 diabetes, reducing paper consumption, and car pooling to save on GHG emissions. Employees working in Denmark are offered the opportunity to sponsor two different diabetes programmes via automatic donations from their pay cheques. In 2003, the employees raised DKK 53,300 for children with diabetes in Bangladesh and DKK 31,480 for people with diabetes in El Salvador.

A list of ideas for ways to take action is being generated by employees and is available on the internal TakeAction! website, which serves as a place for employees to share experiences and inspiration. An annual TakeAction! Award has been established. In 2003 the Award was presented to employees in Ukraine for their public awareness campaign ‘Beware of diabetes’.

As part of TakeAction! Novo Nordisk employees can also apply to participate in a three-week programme working at the diabetes centre at Muhimbili National Hospital in Dar es Salaam, which was funded partly by Novo Nordisk employees. The programme in Tanzania has attracted a great deal of interest among employees. Volunteers at the centre during 2003 contributed in various ways, including training nurses and doctors, setting up IT and accounting systems, and assisting in the laboratory. The employees keep a diary of their experiences, which is published on the TakeAction! website. Returning volunteers also share their experiences with colleagues.

When Novo Nordisk employees were asked in the 2003 survey how they felt about the vision and the values of the company, three out of four considered Novo Nordisk's results within the social and environmental area to be important for the future of the company. To many Novo Nordisk
employees, the translating of corporate values into the TBL approach contributes to their job satisfaction and supports their decision to remain with the company.

Case study adapted from: www.wbcsd.ch
Case Study 3-5: Yawal System – Poland

**Keywords:** environmental responsibility, waste and energy reduction, training, information dissemination

Yawal System is a medium sized company in the south of Poland that produces architectural aluminium constructions. It is part of a holding company with production plants in eastern and central Europe.

The company is driven by the opportunities and requirements that it expects to result from greater European integration. Its environmental strategy is being led by the shared beliefs of the management team and is supported by an enthusiastic workforce, which recognises the importance of working in a company with a responsible corporate culture and appropriate management systems and audit instruments.

The company has established the issues of waste and energy consumption as its key targets and has taken the following measures to develop environmentally responsible practices:

- Reduced the use of plastics (for wrapping aluminium) by 20% since October 2000;
- Decreased the use of paper by 30% since October 2000;
- Substituted the use of wooden baskets for wrapping aluminium profiles with steel baskets, which have a substantially longer life cycle;
- Conducted training for workers in the identification and management of environmental risk;
- Segregated all waste, and in particular hazardous waste, into separate streams;
- Developed indicators describing which areas of production are exposed to a high risk of environmental degradation, in association with a local non-governmental organisation and an academic institution;
- Consulted with local government about the scope and nature of the changes being made; and
- Disseminated the information and experiences gained with other local companies.

The company is working towards a programme of continuous environmental improvement and reports that the knowledge gained through its work to date has improved management systems across the board. In addition, communications with foreign investors have improved and local government representatives are beginning to recognise the importance of this approach.

*Case study adapted from: [www.wbcsd.ch](http://www.wbcsd.ch)*
Case Study 3-6: The Climate Neutral Network

**Keywords:** carbon footprints, customer brand loyalty, alliance of companies, zero emission, co-design, product certification, company-to-company market

A handful of companies are going beyond ‘energy efficiency’ to seek ways of reducing their carbon footprint. Over the past three years, the US-based Climate Neutral Network has built an alliance of companies that are learning how to build market share and customer brand loyalty by offering their customer’s products and services that achieve a net zero impact on the Earth’s climate.

Participating companies can become certified as ‘Climate Cool’ on achievement of complete reduction and offset of all carbon emissions. A company that chooses to become a Climate Cool enterprise agrees to reduce and offset all climate impacts for the full spectrum of its internal operations from the point at which raw materials are received to the point at which finished product is delivered.

*Products or services* can also be certified individually as Climate Cool. Product certification requires a reduction and offset of the greenhouse gases generated at each stage of the life cycle on a cradle-to-cradle basis: the sourcing of materials; manufacturing or production; distribution, use, and end-of-life disposal.

Shaklee Corporation, the first company to receive Climate Cool Certification, sees participation in the Network as an opportunity to leverage the company’s 40-year history of environmental focus and performance. Participation is a means of branding the organization and not just the individual products.

Organizations in the network are now actively collaborating to co-design new Climate Cool products and partnerships, and a creative and rapidly expanding company-to-company market is developing.

The Saunders Hotel group, also certified Climate Cool, was seeking lighting alternatives in their programme to attain certification for “cool rooms”, their Climate Cool accommodations. Saunders needed to develop a means of reducing the energy consumption of hotel lighting without sacrificing ambience. Philips Lighting worked with Saunders to design alternative bulbs. They came up with more energy-efficient alternatives that were also smaller in size and lighter in weight.

The Network more recently began certifying events that achieve a zero emission footprint. This includes a comprehensive calculation of the estimated emissions from an event using the Climate Neutral metrics that closely mirror the WBCSD and WRI Greenhouse Gas Protocol Corporate Accounting and Reporting Standard.

The first certification of this kind was the 2002 Winter Olympic Games in Salt Lake City. This includes measurement of greenhouse gases from such sources as athlete, official, and spectator travel to Salt Lake City, transportation around town, and the events and venues themselves, including even the burning of the Olympic torch. The offsets required were achieved through donations of greenhouse gas reductions from DuPont and Petro Source, and the effort was supplemented by the planting of 18 million trees. The reductions that DuPont is donating are from process related reductions of nitrous oxide, representing reductions beyond their internal commitment. In total, the emission reductions exceed the calculated emissions footprint of the Games by three times.
Norm Thompson made a commitment to become a Climate Cool enterprise by the end of 2005. They started working toward this goal by offsetting all the greenhouse gas emissions from the use of energy (electricity and natural gas) at all their facilities for 2001. Each year they made an additional part of their operations Climate Cool aiming to offset the entire enterprise by the end of 2005. Norm Thompson was able to offset their energy emissions through investments in their community. They made lighting retrofits possible in a number of different community facilities and upgraded the heating system at two local public schools. In addition to greenhouse gas reductions, these two projects have the added benefit of reducing energy bills for cash-strapped non-profit organizations.

Through an online greenhouse gas calculator, Bonneville Environmental Foundation (BEF) will make a variety of Climate Cool services available to individuals and small businesses. Through the calculator individuals can determine the greenhouse gas emissions from their household electricity and heating fuel consumption, their air travel, and car travel. They then have the option to offset particular activities, or their total lifestyle emissions through a tax-deductible donation to BEF whereby BEF will purchase and retire green tags associated with new renewable energy projects such as wind and solar. One hundred percent of the net revenues BEF realises from the Climate Cool donations of their website will be reinvested in new renewable resources.

*Case study adapted from: [www.wbcsd.ch](http://www.wbcsd.ch)*
Case Study 3-7: Sonae: Delta Cafés socially responsible coffee – East Timor

Keywords: socially responsible branding, capacity-building, environmental accountability, auditing

The Portuguese coffee company, Delta Cafés, was established in 1961 in a small 50-metre warehouse, which could only handle two 30kg roasters. In 1998, the Nabeiro/Delta Cafés Group was restructured and gave rise to 22 companies organised into strategic areas, with a turnover of 160m Euro.

As a result of the lengthy war of independence, East Timor’s infrastructure is almost non-existent and the majority of the population lives in poverty. The land, which is considered the best in the world for coffee bean production, was left untended and eroded. Any crop produced was thus of poor quality and could not be sold outside the limited market of Indonesia.

The country’s new president, Xanana Gusmão, saw foreign direct investment as a necessity to kick-start the economy and invited Delta to East Timor to assist with the revitalisation of the near moribund coffee business.

With no certified standard established for coffee growers, the farming communities of East Timor had no access to the global market. Delta believed that by investing in a potentially successful product, it could open up new markets and help rebuild the country while generating revenues.

Having analyzed the situation the following targets were agreed:

- Create a four-year project for capacity-building to enable coffee growers’ coffee to have a certification of origin “Timor Coffee”.
- Help develop coffee growers’ technical skills with the aid of specialists from Delta Cafés.
- Improve, rehabilitate and build educational infrastructures in the coffee growing regions, contributing directly to integrated development of the community.

Before the project began, Delta renovated the first of many schools to demonstrate their commitment. Seminars were held with local farmers to build their capacity, teaching them the fundamentals of quality coffee production.

Some 27 permanent employees were enlisted, with 350 extra for the harvest. The company sought to give these workers and their families the incentive to stay in the mountains and devote themselves to the maintenance of a high quality coffee crop.

This was the beginning of the “One coffee for Timor” campaign. For each 250 gram package of Delta Timor blend produced, Delta would re-invest 0.25 Euros in technology and training for the growers, building of support infrastructures, construction of schools, the provision of schoolbooks and materials, and clothes for the growers families. Civil education was also provided for teachers and parents, with the first kindergarten opened in 2001.

The coffee carries a special logo identifying it as having been produced in support of sustainable communities. Work was done to standardise technology and warehouses in line with Portuguese specifications; training was provided for the new machinery and in all the techniques for producing a better coffee crop.

Delta’s principles of the Business of Sustainability and Social Accounting at Source were as follows:
Integrity and transparency
Quality
Capacity-building
Fair trade
Environmental accountability and eco-efficient practice
Social accountability, working conditions and condemnation of child labour
Auditing

To guarantee the success, Sonae, the biggest retailer in Portugal, supported the project through efficient placement, promotion and launching of the coffee Delta Timor in all its stores all over the country. The project is also a commercial success for Sonae, increasing the coffee sales and the category profit, due to the product origin certification and quality.

Cooperatives are now being established, giving communities a stake in their local area. Partnerships with the national government, the UN and NGOs have been essential to the process, and Delta believes more can still be achieved.

This project is already turning a profit, in part due to the marketing strategy and the brand’s popularity with Portuguese consumers – and their willingness to pay more for a socially responsible branded product.

Case study adapted from: www.wbcsd.ch
Case Study 3-8: Washright Campaign (Europe)

**Keywords:** cleaner manufacturing, energy efficiency, LCA, code of good practice, multimedia awareness campaign, product innovation

Life Cycle Analysis (LCA) conducted by the International Association for Soaps, Detergents and Maintenance Products (AISE) LCA Task Force indicates that a high proportion of the overall environmental impact of household laundry detergents is caused during the use phase. Risk assessment and LCA conducted found that consumers control around 70% of total energy use, 90% of air emissions, and 60% of solid waste attributable to product impact across their entire life cycle. As a consequence, the way consumer uses products clearly influences the amount of emissions that constitute the overall impact.

The AISE seeks to address these environmental impacts through the AISE Code of Good Environmental Practice. The AISE Code is the European Soap and Detergent Industry’s response to the European Commission's Fifth Environmental Action Programme, which calls for economic operators to become more proactive in supporting sustainable development.

The benefits of the Code will be to reduce further the environmental load created by both the manufacture and use of these products. This will be achieved by engaging industry-wide commitment across Europe and applying scientific approaches to support further product innovation. It also recognises that real progress has to involve consumers in a way that is relevant to them. In that sense, this is a new, pioneering initiative promoting both sustainable development and sustainable consumption in a balanced way.

Manufacturers who subscribe to the Code (which is voluntary) were encouraged to formulate their household laundry detergent products and packaging and to consider certain measurable targets relating to reductions in energy consumption, packaging and poorly biodegradable-tonnage.

The AISE also suggested providing consumers with product information – pertaining to product use particularly. As a result a multimedia awareness and education raising campaign called “Washright” was developed.

As part of the campaign, manufacturers agreed to provide consumers with relevant instructions to guide them on how they could do their laundry in a more environmentally responsible manner through visual and informative mediums.

Specific washing messages were conveyed through a European media campaign as well as a product-labelling scheme. This was supported by a Washright set of visuals and the multi-lingual “Washright.com” website.

All companies supporting the industry initiative may display the Washright visuals, thus indicating to consumers their commitment to the program of reducing the environmental impact of household laundry detergents. These packaging visuals have, since 1998, started to include a “short reminder panel” that provides four helpful hints and explanations as to why such actions reduce environmental impact.

The Washright panel includes household tips to raise awareness of key messages on reducing packaging waste (retaining permanent or refillable packaging and buy refill packs where available);
avoiding under-filling of the machine; adapting the amount of detergent used in relation to the hardness of the water in the area, and using the lowest recommended temperature to reduce energy consumption.

As of March 2000, more than 90% of the European market has committed to the Code, representing more than 150 companies (including multinationals and their subsidiaries).

Since the implementation of the Washright campaign, consistent consumer communication material has been developed by AISE and placed on billions of laundry detergent packages throughout Europe.

Industry’s investment in a second wave of a successful pan-European television advertising campaign to communicate the Washright messages is now underway as a result of the first years success and industry’s commitment to that initiative.

Case study adapted from: www.wbcsd.ch
Case Study 3-9: adidas-Salomon

*Keywords:* supply chain management strategy, training, supply chain audits

The adidas sporting goods brand is famous across the world and, like any household name, it could potentially become the target of protests and media pressure if its parent company’s policies and practices fail to win public approval.

Using an external supply-chain has allowed adidas-Salomon to keep its costs down and remain competitive. However, the company’s supply chain is long and complex, relying on about 570 factories around the world. In Asia alone, its suppliers operate in 18 different countries. Moreover, its cost-saving use of external suppliers is not without risks: in particular, the company has less control over workplace conditions at its suppliers’ factories than it would have at company-owned sites.

Outsourcing therefore raises a broad range of issues and concerns for the company. Employment standards have to be evaluated throughout the supply-chain to ensure fairness and legal compliance on such matters as wages and benefits, working hours, freedom of association and disciplinary practices as well as on the even more serious issues such as forced labour, child labour and discrimination. Furthermore, health and safety issues, environmental requirements and community involvement also need to be considered.

Outsourcing supply should not mean outsourcing moral responsibility. Recognizing this, and having regard to the risks and responsibilities associated with managing a global supply-chain, adidas-Salomon has designed and implemented a comprehensive supply-chain management strategy.

That strategy is to source the company’s supplies from the cheapest acceptable sources rather than from the cheapest possible. The company has its own so-called “standards of engagement” (SOE) and the level of acceptability is based on the values of the company itself. Contractors, sub-contractors, suppliers and others are therefore expected to conduct themselves in line with adidas-Salomon’s SOE.

The strategy is based on a long-term vision of self-governance for suppliers - adidas does not wish to be forever in the position of looking over the shoulders of its suppliers.

The company has a 30-strong SOE team, most of whom are based in the countries where suppliers are located (Asia, Europe and the USA). They know the labour laws and safety regulations in their countries and are often able to interview workers in their own language.

Before a relationship is formed with any new supplier, an internal audit is carried out to ensure working conditions in that supplier meet adidas-Salomon’s SOE criteria. All business partners sign an agreement committing them to comply with the SOE and to take responsibility for their subcontractors’ performance on workplace conditions. The monitoring process is continuous as suppliers are audited at least once a year, and more often if serious problems are detected.

Training forms an even more important part of the process than monitoring because it goes beyond the policing role to one that will have a long-term impact. As of October 2001, some 200 SOE training sessions had been held for business partners during the course of the year, a significant increase on the 150 courses held the year before.
About 800 audits were conducted at different levels in the supply-chain during 2000. This involved interviewing managers and workers, reviewing the documentation and inspecting facilities. Since then, the audit process has continued.

Using the information gained from these audits, presentations are made to the management of the supplier, outlining any problems found and the consequential action points. Clearly defined responsibilities and timelines are then agreed with the site managers. Where serious problems are detected, a follow-up visit may be conducted within one to three months. If the supplier is unwilling to make the necessary improvements, adidas-Salomon may withdraw its business. This course of action is a last resort; the company prefers to stay in partnership and to work from the inside to help encourage improvements.

In 2000, adidas-Salomon adopted a system of scoring and reporting on its suppliers’ performance. This gave an overview of the supply-chain and highlighted the main issues and problem areas on a country-by-country basis, but an improved and extended system is now being developed. This will allow the company to publish even more detailed reports about the progress that it, as a company which manages large and complex supply-chains, has been able to make in the important areas of social and environmental performance.

Case study adapted from: www.wbcsd.ch
Case study 3-11: Funds-R-Us

An international financial institution’s private sector lending arm, Funds-R-Us (FRU) helps drive private sector investment in the developing world. It assists some of the world’s richest corporations by providing loans and equity investments to companies with operations in developing nations. Many of the organizations which it supports have highly questionable environmental track records.

Some of these are summarised below:

- **GasInc.** IFC provided close on $300 million to GasInc. to build a large oil pipeline in Central Africa. GasInc. has been one of the more aggressive opponents of the Kyoto Protocol, an international agreement to cut greenhouse gases. The company has been accused of several hundred violations of the Clean Air Act, has been fined for discharging hazardous chemicals above underground drinking water sources. In addition, more recently, about 50,000 barrels of oil spilled from a ruptured pipeline off the coast of Nigeria, affecting 120 coastline communities, home to some 500,000 people.

- **GoldDig** – a large mining company – has its operations in Peru. The company has been responsible for mercury spills, for destroying sacred Indian grounds, displacing people, breaking up families, eroding indigenous cultures and for river and coastal pollution elsewhere in the developing world. The company has a very poor reputation – primarily due to its blatant disregard for local communities.

- The FRU also provides support to the newly opened Rajibat coal mine in India. The mine will be producing 3.2 million tons of coal per annum. The project will disrupt ten local villages and relocate two of them. When burned, the coal will produce 8.62 million tons of carbon dioxide per year and exacerbate the global threat of climate change.

For the past few years, a corporate watchdog NGO has been on the trail of FRU, and has begun exposing some of their more controversial involvement in press releases, etc.

It is time for FRU to clean up their act.
EXERCISES

Exercise 3-2 – Environmental responsibility in practice

1. Slide 3 (copied below) identified a number of changes in management approach that are generally required if environmental responsibility is to be embedded in a meaningful manner within a company’s activities. For each of these proposed changes, try and identify some current activities in your company that reflect both the left hand column and the right hand column. Share and discuss these with your group. Are there examples of activities that others have identified that you could implement in your company?

<table>
<thead>
<tr>
<th>Inefficient resource use</th>
<th>Resource productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-of-pipe technology</td>
<td>Cleaner production</td>
</tr>
<tr>
<td>Public relations</td>
<td>Sound corporate governance</td>
</tr>
<tr>
<td>Reactive</td>
<td>Proactive</td>
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<tr>
<td>Management systems</td>
<td>Life-cycles, business design</td>
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<tr>
<td>Passive communication</td>
<td>Multi-stakeholder dialogue</td>
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<tr>
<td>Linear/throughput approach</td>
<td>Closed-loop approach</td>
</tr>
<tr>
<td>Confidentiality</td>
<td>Openness and transparency</td>
</tr>
</tbody>
</table>

2. Drawing on your own experiences, discuss the available mechanisms for raising awareness of environmentally responsible practice in your business/industry. Discuss this in your group, draw up a shortlist and report back to the class.

In doing this exercise, consider the following issues:

- Identify examples of awareness-raising both internally and externally, as well leading by example and informing, entertaining, analysing and educating differently.

- The use of different vehicles for awareness-raising such as
  - Sustainability reports
  - Company website (inter/intranet)
  - Company newsletter
  - Product information (eg. product declarations and eco-labels)
  - Consumer surveys and panels
  - Stakeholder dialogue

- Consider the extent to which these information and awareness-raising activities are a genuine and honest reflection of current activities, or whether they are being used for window dressing?
Exercise 3-3 – Reviewing the case studies

1. What would you consider as being the key to the success of the sustainability initiative described in case study 3-4? If you were to launch a similar initiative in your company, what would your suggestions for actions list include? Discuss in groups and report back to the class.

2. With reference to case study 3-5, what do you see as being the main reasons for the success of these initiatives? Do you think your company could carry out a similar set of actions with a similar degree of success? If not, why? Carry out this exercise on your own. Some delegates may be requested to report back to the class.

3. With reference to case study 3-6, do you see the potential for your company, services or products to become ‘Climate Cool’. If yes, explain how you would go about this. Discuss in your group and report back to the class.

4. In groups, and with reference to case study 3-8, discuss what would be the key challenges/hurdles in such an initiative, particularly given the broad based target audience (Europe-wide). Look at how these could be overcome.

Exercise 3-4 – Improving environmental performance

You are the recently appointed CEO of Funds-R-Us (Case Study 3-10). Faced with increasingly negative press about the various projects you support, you have to come up with appropriate guidelines to help improve FRU’s image and corporate sustainability track record. In groups, come up with a list of up to eight key recommendations.
Checklist: Practical Implications of Principle 8

The following brief checklist is intended to provide general guidance to companies in assessing the extent to which they have effectively integrated “environmental responsibility” within their corporate activities.

<table>
<thead>
<tr>
<th>OPTION</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you implemented a formal or informal environmental management system as a structured approach for effectively integrating environmental responsibility into core business practice?</td>
<td></td>
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</tr>
<tr>
<td>2. Have you identified and prioritised the various environmental aspects and impacts of the company. These may include (but are not limited to) a consideration of the following issues:</td>
<td></td>
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<tr>
<td>Resource use (e.g. energy, water, and raw materials)</td>
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<td>Liquid effluent discharge</td>
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<td>Air pollution (including greenhouse gas emissions)</td>
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<td>Solid waste and hazardous substances management</td>
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<tr>
<td>Noise and visual pollution</td>
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<tr>
<td>3. Have you set objectives and targets based on impacts (these targets should be SMART)?</td>
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<td>Specific – in terms of the aspect of work to which they relate</td>
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<td>Measurable – in terms of quantity and quality</td>
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<tr>
<td>Achievable – within work constraints</td>
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<tr>
<td>Relevant – to the aims and objectives of the company</td>
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<tr>
<td>Time constrained</td>
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<tr>
<td>4. Have you developed and communicated a corporate environmental policy that is relevant to the activities of the company and that provides a clear basis for the development and implementation of the objectives and targets? Key elements of a responsible policy that contribute to Environmental Responsibility include:</td>
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<tr>
<td>Applying a precautionary approach</td>
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<tr>
<td>Adopting the same operating standards regardless of location</td>
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<tr>
<td>Ensuring supply-chain management</td>
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<td>Facilitating technology transfer</td>
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<tr>
<td>Contributing to environmental awareness in company locations</td>
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<td>Communicating with the local community</td>
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<tr>
<td>Promoting pollution prevention and cleaner production practices</td>
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<tr>
<td>5. Have you ensured top management commitment and accountability? This may entail for example:</td>
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<tr>
<td>Ensuring representation at Board level for environmental issues</td>
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<tr>
<td>Assigning formal responsibilities to top management</td>
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<tr>
<td>Identifying the affected persons and key issues by asking:</td>
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<tr>
<td>What are the most critical environmental issues facing the company?</td>
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<tr>
<td>What are the main risks and opportunities associated with these issues?</td>
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<tr>
<td>Which line managers are most directly affected by these issues?</td>
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<tr>
<td>Have you quantified the financial implications of the risks/opportunities?</td>
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<tr>
<td>What are the resource implications of addressing the risks/opportunities?</td>
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<tr>
<td>What further information is needed to develop an environmental plan?</td>
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<tr>
<td>OPTION</td>
<td>Yes</td>
<td>No</td>
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<td>-----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>6. Have you developed and implemented procedures and guidelines aimed at assisting the company to achieve its specified objectives and targets?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>7. Have you developed sustainability indicators?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>8. Have you measured, audited, assessed and reported progress in the company's performance against these indicators? (Refer to assessment, auditing and reporting tools outlined below)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>9. Have you implemented incentives for employee environmental performance (for example including the achievement of performance objectives within the individuals' performance appraisal assessments)?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>10. Have you adopted relevant voluntary charters and codes of conduct (for example the Responsible Care Charter if a chemical company)?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>11. Have you included environmental considerations in supply chain management?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>12. Have you benchmarked your company against your peers?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>13. Do you have transparent and unbiased communication with stakeholders (refer to communication tools outlined below)?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
**Does your company use these tools for corporate environmental responsibility?**

<table>
<thead>
<tr>
<th>OPTION</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Introduce an Environmental Management Systems</strong> (ISO 14001, EMAS, etc.) to manage environmental risks and opportunities more systematically and efficiently and to help your enterprise:</td>
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<td></td>
</tr>
<tr>
<td>Identify and control the environmental aspects, impacts and risks relevant to the organisation</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Achieve environmental policy, objectives and targets, including compliance with environmental legislation</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Define a basic set of principles that guide your organisation's approach to its environmental responsibilities in the future</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Establish short medium and long-term goals for environmental performance, making sure to balance costs and benefits, for the organisation and for its various shareholders and stakeholders</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Determine what resources are needed to achieve those goals, assign responsibility for them and commit the necessary resources</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Define and document specific tasks, responsibilities, authorities and procedures to ensure that every employee acts in the course of their daily work to help minimise or eliminate the enterprise's negative impact on the environment</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Communicate these throughout the organisation, and train people to effectively fulfil their responsibilities</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Measure performance against pre-agreed standards and goals, and modify the approach as necessary.</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>2. <strong>Environmental Management Strategies</strong>:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaner Production, Sustainable Consumption and eco-efficiency</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Life-cycle management</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Design for the Environment/ Eco-design</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Product stewardship activities</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Product-services systems</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>Industrial ecology</td>
<td>✔️</td>
<td>❌</td>
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<tr>
<td>3. <strong>Use Environmental Assessment Tools</strong> to help to identify the risks and opportunities for your organisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Impact Assessment (EIA)</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Environmental Risk Assessment (ERA)</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Cleaner Production Opportunity Assessments</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Environmental Technology Assessment (EnTA)</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Life-Cycle Assessment (LCA)</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Total Cost Assessment (TCA)</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>4. <strong>Use Environmental Measurement and Auditing Tools</strong> including:</td>
<td></td>
<td></td>
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<tr>
<td>Environmental Performance Indicators</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Environmental Auditing</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Pollution and Waste Audits</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Supply Chain Audits and Assessments</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Ecological Footprints</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>5. Make use of the following <strong>Environmental Reporting and Communication Tools</strong> for internal and external communication with stakeholders:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Environmental / Sustainability Reports</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Stakeholder Engagement Activities</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Developing Partnerships for Progress</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Environmental Labelling Programmes</td>
<td>✔️</td>
<td>❌</td>
</tr>
</tbody>
</table>
Summary of steps – an example for an existing process/product/service

<table>
<thead>
<tr>
<th>OPTION</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Decide to manage environmental risks and opportunities by implementing an Environmental Management System.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>2. Develop a company policy and strategy that incorporates environmental responsibility. (e.g. Cleaner Production Strategy)</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>3. The strategy chosen will encompass or lead to one or more of the following: environmental auditing, pollution and waste audits, supply chain audits and assessments, ecological footprint, and environmental performance indicators.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>4. The result of this will be the identification of options for improved environmental responsibility</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>5. These options may require more detailed assessments to assist decision makers on determining their feasibility and long-term sustainability- e.g. design for environment, life-cycle assessment, eco-efficiency, industrial ecology, total cost assessments, environmental impact assessment and/or environmental technology assessment.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>6. The results of these can then be communicated by reporting on your existing ecological footprint/ your existing environmental performance indicators together with a report on your identified options for improved environmental responsibility as a result of the decisions you made from the information identified by these tools.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>7. The benefits to the company will be to inform decisions to reduce environmentally-related risks and identify opportunities for creative new ideas that save the company money, that open up new markets, that reduce liability, etc.</td>
<td>✔️</td>
<td>✗</td>
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</tbody>
</table>

Summary of steps – an example for a new process/product/service:

<table>
<thead>
<tr>
<th>OPTION</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A new business idea can be developed using tools such as Design for Environment.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>2. To ensure the precautionary approach in adopting a new idea, it can be assessed using EIAs, LCAs, EnTAs, TCAs to determine the risks.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>3. The accepted new activity can then be implemented and operated according to the strategies of CP/eco-efficiency/industrial ecology.</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>4. Once the business is up and running under an EMS, regular audits can be undertaken to ensure the business remains environmentally responsible and to identify further opportunities for continuous improvement (this may be voluntary or required by law/agreement/etc).</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>5. The EMS will help tie all the different aspects together by providing a structured approach.</td>
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MODULE 3: Understanding the Global Compact Environmental Principles

Session 3: Principle 9 – Environmentally Friendly Technologies

OBJECTIVES

The objectives of this session are to:
- develop an understanding of the practical implications of implementing Principle 9, and
- test this understanding through the use of case studies.
BACKGROUND READING

Case Study 3-11: Toyota

Keywords: innovation, hybrid technology, fuel efficiency

Through technological innovation, Toyota Motor Corporation has extended its focus from high quality, mass production and high efficiency to include next-generation transport systems, with the aim of creating modern vehicles that support and promote sustainable development.

Early in the 1990s, Toyota sought to answer two important questions: “What are the requirements of motor vehicles for the 21st century?” and “What sort of vision must Toyota have to meet the challenges of the new era?” To answer these questions, Toyota brought together staff members from various departments to evaluate possible themes for future automobiles, with a view to develop a totally new type of vehicle.

The group was driven by the notion that a vehicle for the 21st century must set an example by offering solutions to natural resource and environmental issues. At the same time, these solutions could not interfere with convenience and comfort. The group also wanted a car that would be fun to drive.

In January 1994, a full-fledged project began. By the end of 1994, the group realised that a hybrid system that Toyota had been developing in a separate project over many years might provide the powertrain for such a new type of car. The team’s work was unveiled in October, 1995, at the Tokyo Motor Show in the form of a car featuring two power sources: a highly efficient gasoline engine and an advanced electric motor.

However, the project team was still faced with many challenges in attaining their target of a 100% energy efficiency improvement. Related technical issues such as battery performance and power source management still had to be improved several-fold. It took two years, numerous test engines, and a great deal of effort before this goal was realised.

By the end of 1997, the “Prius” hybrid sedan was introduced to the market. Toyota had finally made a car that achieved twice the fuel economy, but released only one-tenth the CO, HC and NOX emissions and only half as much CO2 of conventional cars in its class.

Despite its precedent-setting hybrid technologies, the Prius, now sold in Japan and several other markets worldwide, looks like a conventional car and comes with a price tag similar to that of many popular cars. At its heart is the Toyota Hybrid System (THS), which features an efficient gasoline engine and an advanced battery-run electric motor. One or both are used to maximise fuel efficiency and minimise emissions, depending on driving conditions. The Prius never needs to be plugged in because the THS diverts output from the generator to recharge the battery whenever it is low. Also, a regenerative braking system captures excess energy during deceleration or whenever the driver applies the brakes. This recovered energy is also used to recharge the battery.

Toyota is confident that hybrid technologies hold the key to the future of the car. The company has thus given the development of hybrid systems the highest priority, proof of which was seen in the release of the Estima Hybrid minivan and the mild hybrid Crown luxury sedan in 2001. However, the company is aware that no single type of vehicle can meet the needs of all, and is therefore
pushing ahead with research on a wide range of vehicle propulsion technologies. Hydrogen-powered fuel cells, which emit only clean water and electricity, may become the ultimate power source of the 21st century. The hybrid technologies developed for and honed in the Prius have great potential to make the fuel-cell-powered vehicles of tomorrow even more efficient, ultimately contributing to a more sustainable future.

Case study adapted from: www.wbcsd.org
Case Study 3-12: Columbian tannery (Curtigran Ltda)

**Keywords:** eco-efficiency, employee training, TCA

The tanning industry is classified as a high impact sector. Emissions from tanneries not only degrade the environment and are highly odorous, they also have a negative impact on human health.

Curtigran Ltda is situated in Bogotá, Columbia. The company is one of 238 tanners of the San Benito zone, with a monthly output of 2,000 hides. Faced with loss of competitiveness due to inefficiency and wastage of raw materials through inefficient processing, the company was operating at 60% of total capacity, and thus had experienced a fall in profits. It became clear that the only way for the company to survive was to assess all areas of their operations and to substantially reduce pollution, and in so doing, to increase efficiency and profit levels. Curtigran, however, had neither the resources nor the expertise to undertake this survival strategy alone. Curtigran joined the PROPEL eco-efficiency pilot project targeting the tannery sector in 1994. PROPEL, in close co-operation with ASOCUR, had conducted a comprehensive assessment of the tannery sector.

Curtigran's main goals in participating in the PROPEL project were:

- To minimise waste and effluents, in order to reduce operating costs and improve competitiveness;
- To attain optimal use of raw materials, and reduce the amount of inputs ending up in waste streams;
- To obtain a five-year grace period for environmental compliance allowed to companies which participate in clean technology programmes, and;
- To improve its image within the local community.

The first step of the project involved an assessment of all areas of Curtigran's operations, which allowed the company to identify the main areas which needed to be improved. Problems were in the areas of production, merchandising and purchasing, finance and accounting. These included delays on payments to suppliers, late delivery of orders, low productivity and low employee morale.

The solutions developed with Curtigran and the other pilot enterprises in San Benito were based on awareness-creation and the provision of information that would lead to pollution prevention, as opposed to corrective, end-of-pipe solutions. Two main instruments were used to help Curtigran improve both its economic and environmental performance.

Firstly, a cost system was implemented. The cost system is a management tool which allowed Curtigran's managers to make quick decisions, with greater security, regarding the future operation of their business.

The second element of the eco-efficiency strategy, which allowed improvements to be made in the areas identified by the cost system, was the introduction of clean technologies in three areas of operations; dehairing, deliming, and pickling and tanning. Complete implementation, including the sectoral study and environmental impact assessment, took 27 months.

Faced with the lack of capital, lack of trained personnel, a poor internal communication system and
a fear of change and difficulties in moving on from the traditional manufacturing processes, the company needed assistance.

PROPEL provided considerable support in terms of technical expertise, training and financial investment.

The involvement of employees in the changes underway in the company was essential to the success of the eco-efficiency strategy in Curtigran. The 13 employees were involved in all the cleaner production choices. Employees and managers, from Curtigran and the other pilot enterprises, participated in a training programme organised by PROPEL.

ASOCUR co-operated with PROPEL by providing staffing and the infrastructure necessary to ensure the success of the training programme. The training covered the following areas:

- Improving team work between employees and supervisors;
- Development of management’s leadership skills;
- Use of the cost system for the accountants and managers;
- Production and productivity;
- Administration and management models;
- Stock control, and;
- Cost management.

The training course was also carried out in co-operation with the Training Department of FUNDES Colombia. The trainers were engineers from PROPEL and external consultants specialised in cost systems, administration and production. Following the training programme, PROPEL developed a video for both promotion and training. The video is available in both Spanish and English.

The pilot project tanners in San Benito reduced their overall operating costs by 11%, and pollution by 50%. Curtigran’s monthly income has increased by US$ 2,000 per month due to a better utilisation of raw materials with a greater yield of final product.

PROPEL’s experience has been that it is essential to carry out a comprehensive assessment of a sector’s difficulties before undertaking direct action, in particular regarding such areas as the social and cultural characteristics of the company managers and deficiencies of a sector’s infrastructure. Such analysis also helps to identify the internal and external structural factors which affect the company’s functioning, for example, the level of employee qualification and training.

PROPEL has also identified a link between the productivity of Latin American SMEs and environmental problems, and the lack or inaccessibility of information on strategies and techniques which can help companies become eco-efficient.

To overcome these obstacles, PROPEL is developing the capacity to manage eco-efficiency information by:

- Creating an Eco-Efficiency Documentation Centre.
- Launching a publication series to disseminate successful case studies and other information relevant to SMEs of sectors in which PROPEL is active.
- Making the information available electronically through the Internet to PROPEL’s affiliates, associates and collaborators both inside and outside Colombia.
The Colombian Ministry of the Environment is currently working on sectoral agreements which include a combination of command-and-control instruments and economic instruments. PROPEL is working closely with the ministry to ensure adequate and intelligent rules of the game, in particular in relation to the tannery sector. Greater support from local authorities and government is essential for helping SMEs to comply with environmental regulations.

Case study adapted from: www.inem.org
Case Study 3-13: Cleaner Production (CP) in a Czech slaughterhouse

**Keywords:** Cleaner Production, working group, employee motivation

High levels of water consumption and water pollution are common features of the slaughterhouse sector. Water purification is the key to survival for many slaughterhouses as environmental standards for water pollution become higher in the country. Another major problem for the sector is air emissions generated by the production of smoked meats, the use of ammoniac in freezing boxes, and the use of salt for protection of skins.

Masna Zlín is a medium-sized slaughterhouse located on the Czech-Slovak border. The company operates a facility for slaughtering meat stock and for the subsequent processing of pork and beef products. It is situated in an industrial area of the town Zlín - beside a residential area. Turnover is on average US$ 39 million per year, and exports to Slovakia US$ 3.7 million per year. The company produces over 80 standard meat products, smoked meats and boiled products.

Masna Zlín participated in a cleaner production project developed as a result of Czech-Norwegian co-operation, following a decision by the new company management appointed in 1992. The management team was appointed after privatisation of the former state enterprise “Masna prmysl Zlín”, and wanted to adopt a proactive approach in the face of environmental change.

The company was motivated by the need to:
- Improve environmental performance and to meet environmental standards;
- Improve corporate image, especially among customers, and;
- Obtain the support of a professional trained in systematic approaches to pollution prevention.

Within the context of the Czech-Norwegian Cleaner Production Project, a pilot project to minimise blood content in wastewater, and reduce water consumption was conducted for the company Masna Zlín in 1993 and 1994. The aim of this project was to create domestic capacities in cleaner production. The project was a part of the Interactive Postgraduate Course given at the Faculty of Technology Zlín (VUT), during which lectures were given by representatives of the Norwegian Society of Chartered Engineers (NSCE). Employees of Masna Zlín participated in this course and the implementation of cleaner production which followed served as on-the-job training for these employees.

The two specific goals of cleaner production implementation were:
- Reduction of water consumption by approximately 10 per cent in the entire facility;
- Reduction of water pollution to a level close to the limits set by the regulations on sewage operation.

The main area to be dealt with by the company was water pollution. Masna Zlín’s entire water consumption originates from drinking water sources. Water is used for washing of animals, sanitation and boiling. Hygienic standards exclude recycling of water in the production process as a cleaner production option. There was a high level of water pollution before cleaner production was implemented. Waste water was treated solely by mechanical end-of-pipe technology, which was insufficient to meet waste water environmental standards.

At the beginning of cleaner production implementation the company appointed employees to a project steering group and a project working group. The steering group had four members: the
company director, the production manager, the financial manager and the manager for environmental issues. The working group had six members, and was led by the manager for environmental issues, who was a participant in the Interactive Postgraduate Course at the Faculty of Technology Zlín (VUT). The other members of the working group were the maintenance foreman, the production engineer, the slaughtering lines foreman, the meat processing shop foreman, and an external specialist.

The working group was responsible for the following:

- Implementation of cleaner production methods;
- Collection of information on material and energy flows;
- Analysis and identification of bottlenecks in the production process;
- Development of cleaner production options;
- Feasibility studies, and;
- Preparation of an implementation plan.

After completion of a survey on water consumption in the company, it was found that its level of water consumption was close to the sector average. This led to the conclusion that the company was not wasteful in its water consumption, and that technological rather than organisational measures would be necessary for reduction of water consumption. However, organisational or good housekeeping measures were seen as the means of solving problems with the pollution content of waste water.

Methods of brainstorming were used to generate alternatives for reducing the water consumption and pollution levels. Multi-criteria analysis was used to choose the most suitable of these solutions. A list of criteria was defined, and each criterion was weighted from 1 to 10 according to its importance for management.

A crucial factor for overcoming the organisational and technical obstacles which were faced during implementation was the high level of motivation of top-management. The methods used within the cleaner production project (training, organising of steering and working groups, methodological guidance of the project by an external cleaner production consultant, etc.) were also very important in ensuring project success. Employees were motivated by financial incentives and awareness-raising campaigns. All employees were asked to participate actively in continuous improvement of environmental performance. Ten employees responded actively by making suggestions for improvements, including, for example, the purchase of equipment for cleaning the company sewage system.

Cost-savings resulted mainly from reduction in water pollution fees and the increased amount of blood for sale, which had previously been lost in waste water. These savings amounted to US$ 28,850 per year. The use of water containing ice for cooling meat resulted in a further reduction of water consumption by 3,600 m³/year and savings of US$ 2,500 per year. However, this measure was implemented only for a limited period of time and was stopped because of a lack of ice. The investments required to purchase new equipment for ice production were estimated to be too high. Pressing of packaging materials resulted in savings of US$ 7,690 per year, mainly as a result of reduction in transport costs, on an investment of US$ 1,730.

The installation of automatic utensil washers in the retail shops resulted in reduction of water consumption by 1,660 m³/year. Cost-savings were US$ 7,690 per year due mainly to reduced water consumption and use of chemicals for cleaning. The pay-back period was 20 months. In addition
to cost-savings, this measure also:
- Reduced the chemical load of waste water;
- Improved hygiene in the workplace;
- Reduced the amount of working space needed for carts;
- Reduced the biological load of waste water as a result of inserting a filter for fat and solid particles in the automatic washer.

Other cost-savings were also realised following installation of the automatic washer, but these were not quantifiable.

The installation of end-of-pipe technology in the waste water treatment plant used by the slaughterhouse reduced water pollution by approximately 1,100 mg/BOD per litre. Cost-savings resulting from reduction in waste water discharge fees were US$ 150,000 per year. The pay-back period was 3.5 months.

There is great potential for the duplication of Masna Zlín’s implementation project by other slaughterhouses in the Czech Republic, e.g. removal of blood and fat from workshop floor by other means than by water. The most important lesson learnt by Masna Zlín is that the implementation of cleaner production generates both environmental benefits and increased profit. The company learnt two main lessons to be considered in further implementation projects. Firstly, greater economic incentives should be given to motivate employees to both introduce and maintain environment management practices. The company expects that the pay-back period on these incentives will be short. The second lesson learned was that improvements at the waste water treatment plant should have been implemented before the cleaner production programme started. By assigning greater importance to cleaner production, the company could have saved a lot more resources.

Case study adapted from: www.inem.org
Case Study 3-14: Nokia Mediamaster 110 T

**Keywords:** environmentally friendly technology

The Nokia Mediamaster 110 T digital TV receiver is an example of a cost effective and environmentally friendly product.

The leading idea behind the Nokia Mediamaster 110 T design was minimizing the number of parts. The digibox consist only of two covers, a printed wiring board and four rubber feet pads. No buttons, hatches, screws or a metal rear panel are needed. Even the lens is integrated into one of the covers. Minimizing the number of parts saves cost in manufacturing, assembly and transportation. Easy assembly means also easy disassembly in the receivers’ end-of-life.

One of the 110 T covers is made of ABS and another one of polystyrene plastics, both of which can be recycled. The disassembly is easy and fast: because of the snaps, no tools are needed. The challenges in recycling are only the rubber feet pads and a sticker. Since the 110 T has an external power source, flame-retardants are not used.

The Nokia Mediamaster 110 T is targeted for summer houses, camping vans, or for a secondary television at home. It is a small device, and its weight is about one third of other Mediamaster models which provide more connectivity or capability. The thickness of the 110 T’s walls is about half of conventional designs. These thin walls mean a challenge for the moulding process. However, when materials are saved costs savings are achieved. In moulding energy is also saved, since less plastics means less melting and less cooling.

The package volume of the 110 T is about 40% of the earlier Mediamaster models’ volume. This means reduced transportation to assembly as there are only three components per digibox, and hence decreased costs and emissions. The transportation cost can be reduced this way by two thirds.

The 110 T’s energy consumption is low, at only 1 W in standby, compared to more usual levels of 5 W in other designs. The concept of the 110 T will be applied in Nokia’s future products when possible.

*Case study adapted from: www.nokia.com/nokia*
Case Study 3-15: Re-Define

**Keywords:** Eco-design, life cycle assessment, partnerships

The ‘Re-Define’ sofa and armchair, launched in Australia at the end of 2000, are the result of a demonstration project whose aim was to develop high-quality, ‘sustainable’ furniture. Though not yet available commercially, the manufacturer expects the entire cost of the project could be recouped from two years’ worth of sales.

The project, supported by a research grant from EcoRecycle Victoria in 1999, is a collaboration between three partners:

- Wharington International, an Australian company specializing in the manufacture of furniture frames and components;
- The Centre for Design at Royal Melbourne Institute of Technology (RMIT), a research group that specialises in business eco-efficiency as a source of innovation and responsible practice;
- MID Commercial Furniture, an Australian design practice headed by Danish architect Torben Wahl, which specialises in sustainable furniture design.

The aim of the Re-Define project was to develop a range of furniture whose environmental impacts were minimised across the entire life-cycle, including materials selection, manufacturing, distribution, use, re-use, recycling and disposal.

Seven distinct areas (see below) were identified in which traditional furniture can cause damage to the environment. In the case of furniture, these impacts are almost exclusively related to the manufacture and disposal phases, rather than to the use of the product.

1. The release of toxic chemicals from glues, dyes, paints, and so on, during both the manufacture and the use of the product;
2. The production of timber waste during manufacture;
3. Greenhouse gas emissions arising from steel and aluminum production;
4. The consumption of rainforest timber and scarce hardwoods;
5. The use of timber from poorly-managed plantations, resulting in soil erosion, water pollution and habitat damage;
6. The creation of solid waste when the product is discarded;
7. The use of synthetic materials that constitute toxic or hazardous waste once discarded.

The design brief for Re-Define was drawn up by RMIT, including details of materials, manufacturing processes and resource recovery. The requirements set out in the brief included:

- Minimise the quantity of material used;
- Avoid toxic or hazardous substances;
- Use metals with low ‘embodied energy’;
- Minimise the number of components and assemblies;
- Replace glue and screws with simple ‘push, hook, and clip’ assembly;
- Avoid solvent-based adhesives;
- Enable minor repairs to be carried out;
- Avoid colours or designs that will go out of fashion quickly.

The final product incorporates plastic internal shells made from ‘Recopol’ recycled resin, a material developed by Wharington International from the recycled casings of household appliances such as vacuum cleaners, telephones, computers, washing machines and refrigerators. Recopol
replaces more traditional internal components that are manufactured from plywoods, hardwoods, plantation timber and virgin plastic.

Each Recopol resin shell contains the equivalent of 45 recycled printer cases, or 39 kg of material that would otherwise have been incinerated or landfilled. At the end of its life, Wharington can even take back the shell for recycling.

Other features of the Re-Define range include:
- Foam cushions are shaped so as to minimise scrap cuttings, with waste foam sent for use in carpet underlay material;
- Stainless steel legs and mild steel bearers are 100% recyclable, and scrap from the manufacturing process is recycled;
- Metal components do not require any toxic coatings or finishings;
- Fabrics are made from recycled PET or natural wool;
- The nylon feet are designed to be recyclable;
- Fastenings are designed for easy removal and washing of the upholstery.

Forest products have been avoided, and Wharington claims that no toxic or hazardous materials are used at any stage of the manufacturing process. The product is designed to be easily maintained and repaired, in order to prolong its useful life.

According to Wharington, manufacturing the Re-Define range carries no cost premium compared with conventional furniture. Only the design phase incurred extra expenditure.

Although a Recopol shell is US$30-40 more expensive to produce than a plywood frame, it is substantially less labour-intensive. In addition, says Wharington, a resin shell is cheaper to pad and upholster than a plywood frame.

According to the company, ‘Re-Define highlights that eco-design can produce sophisticated commercial furniture that meets the rigorous standards required in the corporate and government sectors.’

Case study adapted from: wwwbsdglobal.com
Case Study 3-16: BT’s wind powered buildings

**Keywords:** renewable energy, EST, EnTA, technology transfer

BT — the UK’s largest industrial consumer of electricity — is sponsoring one of the most imaginative and cleanest ways of generating that electricity. Wind Dam is a project that aims to use wind on the top of high buildings to provide power for the buildings.

BT commissioned a report into the future of the renewable energy market in order to look beyond the short-term contracts currently used and explore longer-term solutions. It suggested that they look at direct support for the most promising new technologies.

The Wind Dam is designed to make the most of what wind there is and can easily generate enough power for the building underneath. It gained credence with a 1999 Department of Trade and Industry Smart Award which funded a feasibility study designed to show how the idea could be commercially viable.

Results from the prototypes look promising and it is estimated that the Wind Dam could power BT’s exchanges, significantly increasing the proportion of power derived from renewable and clean sources.

BT does not want to own the technology but recognises that it could be important to their future, which is why they have decided to sponsor Wind Dam — helping the Wind Dam team create a commercially viable project that will benefit us all.

BT’s sponsorship means that the project gets matching funds from the Government and helps to attract other sponsors. It means that the project can now go through proof of concept tests towards full development.

Market pressure for what the Wind Dam can deliver is considerable. The designers already have requests for 20 installations and this demand will increase as it becomes clear that commercial organisations will be unable to meet their carbon emission targets while maintaining economic growth.

Research by the Rutherford Appleton Laboratories finds that if a Wind Dam was placed on every building in the country capable of housing the technology, 46.4 terawatts of renewable energy would be generated — reducing CO₂ emissions by 19 million tonnes.

The key to meeting the market pressure quickly is money. The Wind Dam project is eligible for a further DTI Smart development grant of £200,000 to £450,000, but commercial match-funding would send it forward at speed, with the effort concentrated on technology and not fund-raising. This is why BT’s support is so important.

But it is only a part of what the company is doing to encourage progress in these areas. BT is researching the role that all renewable technologies — fuel cells, heat pumps, wind and solar — can play in developing its 21st century network. Of particular potential is wind power at Goonhilly — their main satellite earth station.

*Case study adapted from: www.bitc.org.uk*
Case Study 3-17: Climatex Lifecycle

Keywords: Eco-design; textiles

In 1993, William McDonough and Michael Braungart undertook a design assignment to create an attractive and functional fabric that could safely return to the environment at the end of its useful life. The project was commissioned by DesignTex and carried out at a Swiss textile mill, RohnerTextil AG. The resulting product, Climatex®Lifecycle™, is so safe that the fabric's trimmings can be used as mulch by local garden clubs.

McDonough and Braungart faced a challenge in identifying materials that were functional, ecologically sound, and socially just. A combination of free-range wool and ramie were selected for their comfort and moisture wicking properties, and because they could be safely abraded into the environment over the course of their use.

Partnering with Swiss chemical manufacturer Ciba and EPEA, the design team positively selected 38 chemical dyes, auxiliaries, and fixatives that met performance criteria and were not harmful to plants, animals, humans or ecosystems. The resulting fabric has garnered gold medals and design awards and has proved to be tremendously successful in the marketplace.

Climatex Lifecycle exemplifies what is possible with intelligent design: ecological soundness, social fairness, success in the marketplace, creativity rather than regulation, and an entirely new way of making and consuming. A design that is restorative rather than depletive, Climatex Lifecycle can be seen as the flag at the forefront of the next industrial revolution.

Case study adapted from: www.climatex.com
Case Study 3-18: Ford Motor Company

**Keywords:** Eco-design; energy management

The Ford Motor Company’s Rouge factory was built at a time when natural resources were regarded as infinite, and the design focus was improved workplace quality and pay. Today, our major concern is over natural resource depletion. But instead of abandoning the aging brownfield site, Ford is revitalizing the Rouge in ways that are good for business as well as the environment. In doing so, Ford is proving that environmentally sound manufacturing processes can, in fact, be profitable. Ford’s approach, often referred to as sustainable design, includes the following benefits:

- Lower annual energy costs
- Lower long-term maintenance costs
- Use non-toxic, easily recycled materials
- Create healthier work environments
- Improve employee productivity
- Attract talented recruits
- Improve market image
- Help protect the environment

By using emerging technologies, Ford is cleaning storm water, renewing degraded soil using natural processes and bringing daylight and fresh air back into the factory.

**The Living Roof**

Of all the innovations coming out of the revitalization of the Ford Rouge Center, nothing has attracted more interest than the living roof now growing on top of the new Dearborn Truck Plant final assembly building. At 454,000 square feet, it will be the largest living roof in the world, effectively turning the roof into a 10.4-acre garden.

**Cleaner storm water**

The living roof’s primary function is to collect and filter rainfall as part of a natural storm water management system. Working together, the living roof, porous pavement, underground storage basins, natural treatment wetlands and vegetated swales significantly reduce the amount of storm water flowing into the Rouge River, while also improving water quality.

**Cooler surroundings**

Planted with sedum—a drought-resistant perennial groundcover also known as stonecrop—the living roof helps reduce the urban “heat effect” created by acres of tarred and paved surfaces. It also insulates the building, reducing heating and cooling costs by up to 5 percent. The sedum traps airborne dust and dirt, absorbs carbon dioxide, and creates oxygen, all of which help improve air quality. The living roof also creates habitat for birds, butterflies and insects.

**Longer roof life**

By protecting the underlying roof structure from ultraviolet radiation and the thermal shock (expansion and contraction) caused by warm days and cool nights, the living roof is expected to last at least twice as long as a conventional roof. This could save millions of dollars in roof replacement costs.
Lightweight design
Sedum on the living roof is planted in a thin, four-layer, mat-like system instead of loose soil. Even when soaked with water, this innovative vegetation blanket weighs less than 15 pounds per square foot. A natural system like this one has the potential to save millions of dollars compared to installing and operating a traditional storm water treatment plant.

Using Plants to Restore Healthy Soils
Ford is experimenting with a biological process called phytoremediation to remove PAH compounds from soil near the old Rouge coke ovens. PAH compounds are polyaromatic hydrocarbons, a by-product of decades of steel manufacturing. Many years ago, large furnaces called coke ovens were used in the steel-making process. Phytoremediation uses plants, and the microbes attracted to their roots, to break down contaminants into harmless organic compounds which are absorbed into the roots. This process helps rid the soil of PAH compounds. It also filters storm water runoff, regenerates wildlife habitat, and beautifies the landscape. The phytoremediation test site at the Rouge represents one of the world’s most ambitious studies of this process. Compared to conventional cleanup methods, phytoremediation:
- is more environmentally beneficial than removing impacted soil and hauling it to a landfill, which merely moves the problem from one site to another;
- can cost less than excavating and land filling;
- is solar-energy driven;
- adds beauty to the landscape through use of native plants including prairie dock, cardinal flower, New England aster and other perennials that clean soil; and
- restores wildlife habitats.

Bringing in Daylight and Fresh Air
Natural processes are revitalizing the environment outside the Ford Rouge Center. They also are being used inside the final assembly building to make it a more desirable place to work. The building’s design considers the needs of people—as well as machinery — a legacy handed down from Henry Ford and architect Albert Kahn. Compared to the old assembly plant, the change is dramatic. Ten huge skylights — each one nearly 3,000 square feet — and 36 smaller skylights fill the building with natural light. Energy-efficient glass reduces glare and heat from the sun. On sunny days, the skylights allow up to half the building’s lights to be turned off. This reduces electrical energy usage. Using natural light also improves colour perception, reduces eyestrain, and improves mood. According to researchers, people who work in natural light are more productive. And, because poorly ventilated buildings can induce fatigue, the plant is heated and cooled by an innovative “big foot” air tempering system that replaces air in the building with fresh air every 30 minutes. This ductless system mixes warm air near the ceiling with cool air near the floor to create a more pleasant temperature at work level. The building itself acts as one giant air duct, creating a slightly positive air pressure that keeps out drafts when loading dock doors open. The system includes a one-million-gallon thermal water storage tank. During the summer, chilled water in the tank cools the building more efficiently and cost-effectively than using oversized mechanical equipment. Employees see and feel better in this comfortable working environment.

For further information see: http://www.mcdonoughpartners.com/projects/fordrouge/
EXERCISES

Exercise 3-5 – Introducing environmentally sound technologies

1. Conduct a hypothetical risk assessment of your current business or industry. Consider and discuss how CP and improved technologies (hard and soft issues) might reduce any risks you have identified.

2. Consider how CP is not sufficient for sustainable development and why there is a need for responsibility to extend to consumerism. Consider the implications for your business of the following statement: “Sustainable production and consumption are two sides of the same coin; you cannot have one without the other.”

3. For each of the case studies, delegates should consider the following:
   - Identify the possible barriers and drivers for introducing environmentally sound technologies and/or implementing cleaner production practices.
   - Note how for most of these case studies the companies (especially the SMEs) had external support in the form of funding and/or technical assistance for identifying and implementing environmental improvements (CP). Discuss how SMEs benefit from shared support. Is it possible to do it on your own? What are the barriers to doing it alone? What are the options for support?
   - What are the benefits of case studies – how can businesses share information and awareness through case studies? Do you think the successes of one industry applicable to other industries?
**Checklist: Practical Implications of Principle 9**

The following brief checklist is intended to provide general guidance to companies in assessing the extent to which they have effectively made provision for environmental technologies within their corporate activities.

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<th>OPTION</th>
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<td>1. Have you established a corporate or individual company policy on the use of ESTs?</td>
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<td>2. Have you formed partnerships between suppliers and contractors that use these technologies (for example have you obtained or provided information on the environmental performance of technologies used)?</td>
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<td>3. Have you examined investment criteria and the sourcing policy for suppliers and contractors to ensure that tenders stipulate minimum environmental criteria?</td>
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<td>4. Have you co-operated with industry partners to ensure that ‘best available technology’ is available to other organisations?</td>
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<td>5. Have you increased internal awareness of the benefits of ESTs?</td>
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<td>6. Have you improved company culture and practices to facilitate ESTs?</td>
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<td>7. Have you investigated ways to make existing technologies become more ‘environmentally sound’ by changing the management and operation practices associated with the technology – for example implementing stricter control measures or changing washing procedures to minimise waste?</td>
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<td>8. Have you refocused research and development towards technology, service and product design for sustainability?</td>
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<td>9. Have you introduced life cycle assessment (LCA) in the development of new technologies and products, so as to take into account impacts in manufacture, use and at the end of life of the product?</td>
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<td>10. Have you benchmarked against any guidelines outlining Best Available Technologies?</td>
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<td>11. Have you identified alternative ESTs?</td>
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<td>12. Have you made information available to stakeholders that illustrate the environmental performance and benefits of using ESTs?</td>
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<td>13. Do your ESTs encompass total systems that include know-how, technical procedures, goods and services, equipment, and organisational and managerial procedures?</td>
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<td>14. Do you use an appropriate method for evaluating technology options in terms of their environmental and related impacts to ensure that the process of implementing a process technology will result in the best environmental and related outcomes?</td>
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<td>15. In order to make the best use of ESTs, have you analysed and chosen technologies based on your needs and development priorities, and then adapted these technologies to specific local conditions?</td>
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<td>16. Have you made use of the following tools to assist in the development and implementation of ESTs?</td>
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The decision regarding which alternative technology to use for an existing or new process can be assisted by an **Environmental Technology Assessment (EnTA)** – an analytical tool designed to assist the sustainability decision-making processes related to technology adaptation, implementation and use. Use EnTA to assess implications of a technology and guide selection of technology. Use EnTA as a scoping tool at the pre-investment stage, before the development of a formal/full technology proposal.

Use **Environmental Impact Assessments** to identify and predict the environmental impacts of a project, policy or similar initiative and to provide a basis for decision on acceptability of the likely impacts. Use EIA prior to decision on whether or not the initiative should proceed.
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<th>OPTION</th>
<th>Yes</th>
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<td>Use <strong>Environmental Risk Assessment</strong> to estimate and compare risks to</td>
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<td>the environment and public health in order to determine the environmental</td>
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<td>consequences of the initiative under consideration. Use ERA at any time,</td>
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<td>as determined by the initiator.</td>
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<td>Use <strong>Life Cycle Assessments</strong> to evaluate the environmental burdens</td>
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<td>associated with a product, process or activity, explicitly over the</td>
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<td>entire life cycle. It can be used at any time – from RandD to assess</td>
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<td>alternatives to once implemented to determine options for improvement</td>
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<td>of existing technologies.</td>
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<td>Use <strong>Cleaner Production Opportunity Assessments</strong> to identify all</td>
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<td>techniques that can minimise environmental impacts of existing</td>
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<td>processes that may include the adaptation of existing technologies or</td>
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<td>the purchase of new technologies.</td>
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<td>Each assessment tool can in fact complement the other tools, and be</td>
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<td>used to help focus the different phases of the technology development</td>
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<td>and implementation, thereby promoting a better understanding of the</td>
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<td>effect a technology has upon the environment.</td>
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<td><em>(Refer to Module 4 for more detail on each of these tools)</em></td>
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MODULE 4: From Principles to Practice

Session 1 – Steps to Sustainability

OBJECTIVES

The objectives of this session are to:

- Briefly review some of the procedural requirements for companies to participate in the Global Compact.
- Understand some of the critical steps that companies can take towards effectively implementing the three environmental principles of the Global Compact.
- Examine some practical case studies that illustrate what various leading companies have done in terms of promoting environmentally responsible behaviour.
- Review the benefits of participating in the Global Compact’s Global Learning Forums.
Seven Steps to A Greener Company: From Green Trimmings to a Green Soul

by Guy Dauncey

When a company claims to be “green,” how can you tell just how green it is? I always lean towards encouraging whatever progress a business has made, rather than dwelling on the work that remains undone. I know that there are many in the business world who sincerely want to make a difference. On the other hand, many companies want to convince us that their disposable diapers are greener than the next ones, or that if you buy their products, all the birds will sing and Mother Nature will be happy.

To help you rate your local company, and to help companies assess their own progress, I have devised a seven-step evolutionary scale of company greening. Most companies have been thinking environmentally for only two or three years. As you will see from the scale, the process of “deep greening” involves some very profound shifts that cannot happen overnight. So my advice is be patient - and gently encourage a company to do more.

Step One: Green Trimmings: The company makes a symbolic nod in the right direction and offers five green products among 5,000 ungreen ones, coupled with a big green marketing push.

Stage Two: Green Cuffs: As well as its small green product line, the company orders in-house paper recycling and stocks up with environmentally sound cleaning liquids. “Switch-off” reminders are placed by light switches and the company runs a regular column on the environment in the company newsletter.

Stage Three: Green Clothes: The company commissions an in-depth environmental audit, appoints an environmental vice president, adopts an environmental mission statement, and includes an environmental section in its annual report. Management institutes permanent changes in such areas as waste management, packaging, transportation, paper use, pollution control, employee involvement, eliminating ozone-depleting substances, etc. They develop a solid green product line and adopt a policy on social responsibility.

Stage Four: Green Body: The company redesigns its product line to eliminate toxins and non-recyclables at the source. They do a complete materials-use analysis, with a view to long-term sustainability and recyclability. They examine and overhaul their purchasing policy to ensure that they are supporting sustainability down the line. They adopt a policy on global responsibility.

Stage Five: Green Brains: The company develops and implements a long-term business plan designed to achieve environmental sustainability and effects a strategic redeployment of its assets and resources into sustainable products and activities (for example, shifting from oil to solar). This entails a major shareholder education plan to protect themselves from hostile takeover bids.

Stage Six: Green Heart: The company undertakes the transfer of its company stock from the open “value-free” marketplace, where all that matters is the financial bottom line, into stock ownership funds guided by social, environmental, and global responsibility standards. It develops a community co-ownership program for local plants and branch offices.

Stage Seven: Green Soul: At this final stage, the company embarks on a conscious evolution of its overall goals, policies, practices, and processes, to shift into a mode of enlightened responsibility. This involves asking the question: “How will this benefit the planet, the environment, the community, the customer, and the work team?” and incorporating the answers into every action.

As the company does this, it will discover that it is experiencing an unparalleled release of synergy and co-creativity in the pursuit of higher goals.

Guy Dauncey is the author of After The Crash, The Emergence of the Rainbow Economy, published by Green Print (1996), and is the environmental consultant on the Bamberton project.
Case Study 4-1: Interface

**Keywords:** Environmental management; product and process change

Interface, Inc. CEO Ray C. Anderson has combined environmentalism with dedication to his company’s success, and proven that being green can also be profitable for big business.

When Anderson started Interface, Inc., in Atlanta, Georgia, in 1973, he wasn’t concerned about the environment. He’d earned a degree from Georgia Institute of Technology, worked for over fourteen years in various positions at Deering-Milliken and Callaway Mills, and was out to make his own carpet business the biggest in the world. He succeeded, turning Interface into a billion-dollar-a-year company. But there was a price. Every year his factories produced hundreds of gallons of wastewater and nearly 900 pollutants.

Then Anderson read Paul Hawken’s book, *The Ecology of Commerce*. The book suggested that industry was systematically destroying the planet, and the only people in a position to stop the destruction were the industrialists themselves. The book’s argument prompted him to turn Interface, Inc. into an environmentally friendly enterprise.

He began by taking steps to reduce the company’s waste and conserve energy by recycling. At its plant in LaGrange, Georgia, Interface used to send six tons of carpet trimmings to the landfill every day. By June of 1997, it was sending none. At Guilford of Maine, a division of Interface, new computer controls installed on boilers not only reduced carbon monoxide emissions by 99.7%, but also improved the boilers’ efficiency, decreasing waste and increasing profits.

Anderson also spread the word to other companies and to consumers worldwide. He funded the Alliance to Save Energy, helping children design energy-saving campaigns for their schools, and through his frequent speaking engagements and his book, *Mid Course Correction: Toward a Sustainable Enterprise: The Interface Model*, helped prove to other businesses they could protect the environment while increasing profits.

Anderson’s efforts have begun to pay off. Sunco Bank of America, Polaroid, and General Motors now regularly consult with The Coalition for Environmentally Responsible Economics. Xerox Corporation now leases many of its business machines, recycling old equipment and parts instead of discarding them.

Meanwhile, Anderson continues to move Interface toward his goal of complete sustainability, making products in a way that will not rob future generations of raw materials or energy resources. Interface is using solar and wind power in the place of fossil fuels and is planting trees to offset the pollution caused by trucks transporting its carpet. The company has even found a way to make carpet out of corn. The carpet tiles, made in cooperation with Dow Chemical and Cargill, an agricultural products company, were unveiled in June, 2000. John Wells, president of Interface Americas, says plant-derived products could make up as much as 10% of Interface, Inc.’s business over the next three years.

Ray C. Anderson’s contributions have not gone unnoticed. He’s been lauded by government, environmental, and business groups alike. In 1997, Anderson was named co-chairman of President Clinton’s Sustainable Development Council. In 1996, he received the Inaugural Millennium Award from Global Green, presented by Mikhail Gorbachev, and won recognition from *Forbes Magazine*.
and Ernst and Young, which named him Entrepreneur of the Year. Anderson recently received honorary doctorates from two respected universities, and in January 2001, he took home the George and Cynthia Mitchell International Prize for Sustainable Development.

Anderson acknowledges there is still much work to be done, even within his own company. Interface, Inc. is only about a quarter of the way to its ultimate goal - a goal employees refer to as “the peak of Mount Sustainability.” Still, Anderson believes the tide has turned irrevocably in his favour. As he told Ottowa Citizen, “It’s a wave that’s forming. I have no way of knowing how fast or how big the wave will be, but businesses that don’t move in this direction won’t survive.”

Case study adapted from www.myhero.com
EXERCISES

Exercise 4-1 – Understanding stakeholder interests

Divide yourselves into groups of about 10 (if possible from the same company, or similar industries). In your groups, compile a list of stakeholders that you consider to have an interest in the development of your company’s environmental performance relating to a specific issue. (Note: if you are not all from the same company, then the trainer will provide you with a particular company and/or scenario to consider). Divide yourselves into even smaller groups representing these different stakeholders, with one group/individual playing the role of the company.

Each group should then:

- Brainstorm the general interests and values of their stakeholder group
- Brainstorm the changes that their particular stakeholder group would like to see to the company’s policy and activities
- Develop a possible negotiating strategy aimed at achieving these changes

Groups should bear in mind the likely strategy of other groups, and should consider whether it would be advantageous to seek alliance with one or more of the other groups. Each group will make a final presentation of their viewpoint, after which general discussion will be held.
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MODULE 4: From Principles to Practice

Session 2: The Sustainability Toolkit

**OBJECTIVES**

The objectives of this session are to:

- Identify some of the more prominent sustainability tools and management approaches.
- Consider which tool/s to use and when.
- Review some of examples through the use of case studies.
BACKGROUND READING

Case Study 4-2: Deloitte Touche Tohmatsu (Global)

Keywords: Lifecycle analysis (LCA), consumer choice, ethical database

Consumers are beginning to think about the entire lifecycle of the products they buy. Many want to know where they come from and how they, or their parts and materials, are going to be disposed of or recycled. They want certainty that what they buy has been produced in accordance with international norms and human rights standards, international labour standards and internationally acknowledged principles for the protection of the environment.

Some corporations, particularly those close to the consumer, are working on meeting this demand for information, by, for example, developing ethical guidelines for their operations at home and abroad and for the manufacturing of their products. At the same time, governments are developing initiatives to monitor and report to the public on companies’ behaviour. Many of the initiatives overlap and there is no consensus about the best way to collect and report on the data available.

In Denmark, Deloitte and Touche has been working with Danish Consumer Information (DCI), a public body informing consumers about a variety of issues related to products and services in the market. The DCI has developed an “ethical database” to allow companies to provide consumers with information over the Internet about company products and services. This is increasingly important in a world where image and brand are key competitive devices. Participation is voluntary and offers the company an opportunity to demonstrate its commitment to corporate social responsibility.

Rather than seeing the ethical database as a threat to their image, companies consider it an opportunity to promote their work with corporate social responsibility and to link this work to their brands, says Jens Schierbeck, director for corporate social responsibility at Deloitte and Touche, Denmark. The long-term vision is to place terminals in every shop to enable the consumer to obtain information about a product and a manufacturer before deciding to buy the product.

For the 30 companies participating in the pilot phase, the database offers profiling, branding, and risk management on both national and international markets. The consumer, in turn, is given assurance about the reliability of the data provided through frequent random sampling performed by a third party auditor.
Case Study 4-3: Sonae (Thailand)

Keywords: Partnerships for sustainability; Eco-labelling

Thailand Business Council for Sustainable Development (TBCSD) was established in 1993 by the former Prime Minister of Thailand, H.E. Anand Panyarachun. The council consists of representatives from 32 leading business organizations and operates as a non-profit organization to promote sustainable development. TBCSD offers constructive policy and implementation support to encourage business leadership to catalyze change towards sustainable development. Thailand Environment Institute provides the Secretariat support for the TBCSD and works closely with members and counterparts to implement and provide support for TBCSD initiated projects.

The Thai Green Label project was initiated in October 1993 by the TBCSD in association with the Ministry of Industry, the Ministry of Science, Technology and Environment and other business sectors.

The scheme came from the idea that consumers have the power to purchase products that do not damage the environment during their manufacturing, use or disposal. Selection of a product should be weighed against its impact on the environment, as well as on price, performance and other attributes. Thus, a demand for environmentally sound products will persuade business to develop these products to fulfil consumers’ need. The Thai Green Label applies to products and services, not including foods, drinks, and pharmaceuticals. Products or services which meet the Thai Green Label criteria can carry the Thai Green Label. Participation in the scheme is voluntary and the scheme is open to both domestic and foreign suppliers.

The scheme was developed to promote the concept of resource conservation, pollution reduction and waste management. The purposes of awarding the green label are:

- To provide reliable information and guide customers in their choice of products.
- To create an opportunity for consumers to make an environmentally conscious decision, thus creating market incentives for manufacturers to develop and supply more environmentally sound products.
- To reduce environmental impacts which may occur during manufacturing, utilisation, consumption and disposal of products.

The green label criteria have been developed under the guidance of the following principles:

- An environmental assessment of the product using life cycle consideration, taking into account all aspects of environmental protection, including the efficient use of raw materials and focusing on opportunities to achieve significant reductions in detrimental environmental impacts.
- Solving specific issues of high national priority, e.g. reduction of waste production and minimization of energy and water consumption.
- Capability to meet proposed criteria with reasonable process modification and/or improvement.
- Possession of appropriate test methods.
The Thai Green Label takes into account the impact on the environment of a product, and the potential of achieving environmental improvements in its production. It also draws on existing criteria set by other countries’ ecolabelling schemes and alternative technologies.

In the first six years of the project more than 200 individual products have received the Green Label award.

Case study adapted from: www.wbcsd.ch
Case Study 4-4: DuPont

**Keywords:** Zero targets, innovation

Founded in 1802, DuPont is a science company, delivering science-based solutions from operations in 70 countries with 83,000 employees. In its 200 year history, the company has undergone several transformations, evolving from an explosives company to a chemical company and now to a science company.

The DuPont mission is to achieve “sustainable growth” which is defined as creating shareholder and societal value while reducing footprint throughout the value chain. Paul Tebo, vice president for safety, health and environment, has been a driving force behind implementing sustainable growth within DuPont. Tebo has been spreading the vision to DuPont businesses worldwide, setting challenging targets based on the elimination of all injuries, illnesses, incidents, wastes and emissions throughout the value chain. In short, ‘the Goal is Zero’. The critical aspect of the goal is that businesses must still grow while driving towards zero.

The Goal is Zero impacts on each of DuPont’s core strategies - from improving productivity, to increasing knowledge intensity and finally to delivering new products through integrated science. The mission of sustainable growth is creating alignment between business strategies and societal expectations and the Goal of Zero is driving new innovations within the company.

Innovations include progress on reducing waste and emissions at DuPont sites. A global team developed new technology for the manufacture of Terathane brand PTMEG, a key raw material for Lycra. The innovation increased yields, resulting in additional revenues of $4 million while eliminating 4.4 million pounds of waste per year.

Another team developed and implemented methods to reduce approximately three million pounds of annual releases of HFC-23 through process optimization. The innovation saved $20 million in capital investment and reduced greenhouse gas emissions on a CO₂ equivalent basis by 40 billion pounds. In Asturias Spain, the Sontora business determined that second quality material could be used productively rather than be waste. With the assistance of Dupont and some other local organizations, a group of unemployed women formed Novatex S.A. to take the second quality Sontora and produce one-time use products for medical and laboratory applications. Novatex is now a stable business with 13 direct and sustainable jobs for women using material that was formerly waste.

The real benefit to growth has been in those Goal of Zero innovations that have gone beyond DuPont sites to include customer impacts. A Packaging and Industrial Polymers team in Europe created a peelable lid system for packaging application that eliminates solvent emissions from lacquer coatings. This innovative product reduces packaging material and improves taste and odour impartation. As a result of this effort, DuPont has gained a 10 percent share of the lidding market and reduced more than 1,000 tons of methyl acetate solvents per year in Europe. A DuPont of Canada team instituted a new business model with Ford Canada. Instead of selling gallons of paint, DuPont sold painted cars. Over the four-year term of the program, Ford’s emissions were reduced by 50%. A Crop Protection team established a vision to help the poorest people in the world to continue to grow cotton with less risk to their safety and health. According to official figures in Benin alone, 37 people died from misapplication of older types of cotton insecticides. In looking to enter this new market, the West African DuPont team developed a safer product that...
reduced application rates by a factor of 10, designed appropriate packaging, and then trained officials, distributors and farmers on the safe use of the product.

While the sustainable growth transformation and the attainment of zero goals throughout the whole value chain will take time, already the zero challenge is driving new innovations through the business globally. Many DuPont teams are beginning to recognise the opportunities that meeting zero targets presents, turning sustainability challenges into business opportunities. Similar examples are emerging from every DuPont business. The challenging targets are forcing DuPont businesses to rethink products and approaches and come up with new innovative solutions to drive the sustainable growth transformation.

*Case study adapted from: www.wbcsd.ch*
Case Study 4-5: Bovince Ltd (UK)

Keywords: Sustainability reporting, ISO 14000

Since it was established in the early 1990s, environmental reporting has tended to be the preserve of large corporations and multinationals. In this respect Bovince Limited is unusual. The screen process and digital printing company, based in the UK, is a family-owned business which employs no more than around 60 people.

Bovince specialises in the printing of large-format advertising posters, as well as advertising panels for buses and bus shelters. The company’s site in London is regulated by the local borough council under the terms of the Environmental Protection Act 1990.

By the company’s own admission, its activities have a potentially heavy impact on the environment, and more so than other types of printing process. The operation uses large amounts of energy, materials and solvents, and as a by-product it creates both solid wastes and discharges to water.

Environmental reporting at Bovince began in 1995, the same year that the company gained the BS 7750 environmental standard. In the following year it was accredited under the European Eco-Management and Auditing System (EMAS), and in January 1997 Bovince was awarded ISO 14001 certification.

In both 2000 and 2001, Bovince was named winner of the Association of Chartered Certified Accountants (ACCA) environmental reporting award in the small and medium-sized enterprises (SMEs) category. In common with many other corporate reporters, Bovince had by then broadened the scope of its corporate reports to cover social aspects as well as environmental.

A central theme in Bovince’s reports is what the company terms the ‘Bovince Tree of Sustainability’. This has nine ‘branches’, each representing a particular aspect of the company’s commitment to sustainable development. They are waste production, airborne emissions, effluent, energy consumption, cyclic processes, transport impacts, people and learning, business and society, and sustainable growth.

These nine categories provide the basis for measuring sustainability within the company. According to Derek Hall, Bovince’s works, quality and environmental manager, they will continue to be used in future annual reports, albeit in a format that more closely mirrors the guidelines set out by the Global Reporting Initiative.

Bovince is firmly wedded to the notion that sustainability can go hand-in-hand with improved commercial performance – the well known ‘triple bottom line’ of environmental protection, social responsibility and financial prosperity.

Corporate reporting gives Bovince ‘a standard to work to’, he says.

Within the framework of Bovince’s Tree of Sustainability, a number of specific actions have been taken in recent years to reduce the company’s environmental impact. Efforts to minimise the use of solvents have included investing in an automatic screen washer which uses solvent more efficiently than the manual process it replaced. Similarly, the introduction of distillation equipment means that more efficient use can now be made of solvents.
A new cyclic process has meanwhile been introduced for developing and fixing images onto the printing stencils – allowing the developer and fixer to be re-used.

The introduction of ‘direct to screen’ projection has enabled Bovince to eliminate several stages from its production process, reducing both the amount of photographic material used and the discharge of waste chemicals such as silver nitrate.

In 1999, Bovince took a further step to reduce its emissions of volatile organic compounds (VOCs) by introducing water-based ink. Another, more straightforward measure has been to encourage staff to replace lids on ink tins after use. This has obvious health and safety benefits, too.

On the back of these and other initiatives, Bovince has been recognised as a ‘best practice site’ for solvent control under the British government’s Environmental Technology Best Practice Programme.

To reduce its waste levels, Bovince sends as much of its waste paper as possible for re-use in school art and craft projects. Empty tins are sent for granulation, while used films are sent for solvent recovery.

Environmental and social standards are extended to the 250 or so companies that supply Bovince with resources and services. Compliance with a set of standards is continually checked. In 1999, Bovince set up an annual ‘Award for Excellence’ to reward outstanding performance among its suppliers.

The Bovince sustainability report pays more than lip service to social responsibility. It sets out staff training policies under the heading ‘educational sustainability’, and puts on record that the company recently secured ‘Investor in People’ status for its commitment to staff development.

Outside the organization, the report lists several community projects to which Bovince donates time and resources. For example, the company is located in an area of high unemployment, and offers work experience to local school pupils. In addition, in 1999 the company signed up to the East London Partnership - a privately-funded institute promoting regeneration in some of London’s most deprived boroughs.

*Case study adapted from: www.bsdplobal.com*
Case Study 4-6: Kalundborg, Denmark

Keywords: Industrial Ecology

One of the best-known examples of industrial ecology can be found in Kalundborg, a small industrial zone 120km west of Copenhagen in Denmark. Over time, this unplanned industrial park has evolved from a single power station into a cluster of companies that rely on each other for material inputs.

The project began in 1972 and by 1994, 16 contracts had been negotiated. The extent of the material and energy exchanges in 1995 was about 3 million tonnes a year. Estimated savings totalled US $10 million a year, giving an average pay-back time of six years.

The core participants are:
- Asnaes, Denmark’s largest coal-fired power station;
- An oil refinery owned by Statoil;
- A pharmaceuticals plant owned by Novo Nordisk;
- Gyproc, Scandinavia’s largest plasterboard manufacturer;
- The municipality of Kalundborg, which distributes water, electricity and district heating to around 20,000 people.

The symbiosis has grown over the years to include partners from other districts, as well as farmers.

The participants exchange materials and energy for mutual benefit, on the basis that by-products from one business can be used as low-cost inputs by the others.

For example, treated wastewater from the Statoil Refinery is used as cooling water by the Asnaes power station. Meanwhile Statoil and Novo Nordisk purchase ‘waste’ process steam from the power station for their operations. Surplus heat from the power station is used for warming homes in the surrounding area, as well as in a local fish farm.

The power station produces other valuable by-products including 170,000 tonnes a year of fly ash, which is used in cement manufacturing and road building. The wallboard company, Gyproc, uses the power plant’s fly ash to obtain gypsum, a by-product of the chemical desulphurization of flue gases. Gyproc purchases about 80,000 metric tons of this material each year, meeting almost two-thirds of its requirement.

Surplus gas from the Statoil refinery, which used to be flared off, is now delivered to the power station and to Gyproc as a low-cost energy source. Local farmers, meanwhile, make use of Novo Nordisk’s by-products as fertilisers. Industrial enzymes and insulin are created through a process of fermentation, the residue from which is rich in nutrients. After lime and heat treatment, it makes an excellent fertiliser. Some 1.5 million cubic metres a year are delivered to local farmers, free of charge.

Originally, the motivation behind the clustering of industries at Kalundborg was to reduce costs by seeking income-producing applications for unwanted by-products. Gradually, though, industry managers and local residents realised that they were generating environmental benefits as well.

This project has enabled its participants to achieve substantial cost savings and to improve their
resource efficiency. Gyproc has recorded a 90-95% saving in oil consumption after switching to gas supplied by the adjacent refinery.

In addition to these reductions, the use of the excess heat from Asnaes for household heating has eliminated the need for about 3,500 oil-burning domestic heating systems.

Case study adapted from: www.bsdglobal.com
Case Study 4-7: Hitega (Chile)

**Keywords:** Cleaner Production

Hitega (Hilados y Tiejidos Garib) is a Chilean textile mill producing dyed yarn and fabric made of polyester and rayon. It produces more than 1,000 tonnes a year of dyed material and a similar quantity of non-dyed, finished fabric.

The production process requires several changes of water, and the use of dye, bleach and other chemicals. The company identified several ‘cleaner production’ opportunities, in relation to the improvements in the use of water and energy, and the amount of suspended solids in the effluent stream.

Hitega used three techniques to improve the plant’s water management: recycling the softened water used to cool the dye bath; recycling the water supply for the air conditioners in the spinning and weaving rooms; and improving softener regeneration and service.

To become more energy-efficient, Hitega developed a maintenance plan for leaking steam traps. Screens were installed in dye room drains to reduce the amount of suspended solids in effluent.

The resulting environmental benefits of these initiatives were water, energy and chemical conservation, and reduced emissions and effluent-borne solids. Most of the measures adopted had pay-back periods of two years or less. The recycling of dye cooling water, for example, cost $750 but delivered a saving of $400 a year.

Case study adapted from: wwwbsdglobal.com
Case Study 4-1258: IBM’s recycled-resin personal computer

**Keywords:** Product stewardship

In March 1999, IBM introduced the IntelliStation E Pro, the first personal computer (PC) in the world that has all of its major plastic parts made of 100 percent recycled resins. According to Inder Wadhera, an IBM senior plastics engineer who helped develop the new PC, using all recycled resins “hasn’t cost one extra cent.” In fact, switching from virgin to recycled plastics made one part in the new unit 20 percent less expensive to manufacture.

The IntelliStation is the first of many IBM products that will incorporate recycled plastics. IBM's Austin facility is developing two models that each contain about 25 percent recycled plastic. “Eventually every division will use recycled resins,” Wadhera said.

Because these highly engineered recycled plastics are new, IBM must carefully test each resin for long-term performance and safety. Also, it is harder to use recycled resins in parts of the computer that are visible, or “appearance parts,” since people expect their computers to look evenly coloured and unblemished. To address the issue of colour irregularities, IBM's new 100-percent recycled resin PC is completely black.

The main barrier to using recycled resins is limited supply. Debbie Horn, lead engineer of the Environmentally Conscious Products team for the IBM Server Group in Rochester, Minnesota, explained that for plastic parts, IBM always specifies a recycled-content resin and a virgin resin, so that manufacturing is not delayed if a resin is unavailable.

The recycled plastics come from four main sources: one is pre-consumer and three are post-consumer. The pre-consumer source is IBM's own manufacturing process. When plastics are poured into moulds, the leftovers are broken off and sent to be reground by an IBM supplier into new resins.

One of the resins that IBM needs for its new PC is polycarbonate. Post-consumer sources for this resin include the large, refillable water bottles that are used in office water coolers, and the shatter-resistant window panes, the type often found in schools. Once the metals are stripped, the plastic from old compact discs and CD-ROMs can also be recycled.

IBM is beginning to explore another source of recycled resins — old computers that have been returned under warranty or through collection programs established in response to government requirements in Europe and Asia. IBM has Materials Recovery Centres worldwide, including one in Endicott, New York, that disassemble old computers and process millions of pounds of plastic. The company is trying to use some of the recovered resins to produce new computers, but they have encountered several problems. For example, the products that are returned to the Materials Recovery Centres vary in age, and contain an assortment of plastics types. Some of the plastics are no longer used by IBM since the company instituted its Environmentally Conscious Product Design protocols.

*Case study adapted from: www.moea.state.mn.us/stewardship/productstewardship.cfm*
Case Study 4-9: Elk Falls pulp mill (Canada)

**Keywords:** Total Cost Accounting

The Elk Falls pulp mill owned by Fletcher Challenge is located on Campbell River, on the east coast of Vancouver Island in British Columbia. The mill began operation in 1952 as a single-line newsprint plant. It is now a world-scale Kraft pulp and newsprint complex, shipping products to customers around the world. The mill employs over 1,000 people and plays a major role in the local economy.

In 1996, management at the Elk Falls mill was considering a retrofit of the main power boiler. Power boiler 5 uses a horizontally mobile ‘travelling’ grate on which the combustion of hog fuel takes place. As a result of incomplete combustion, the boiler produces large amounts of unburned carbon or fly ash, which creates costs in terms of landfill, boiler maintenance, and permitting. Overall, the annual operating cost of the boiler is in excess of $6 million.

These high costs led the managers at Elk Falls to investigate the feasibility of retrofitting power boiler 5 with a ‘bubbling fluidised bed boiler’ (BFBB). This consists of a layer of homogenised sand particles injected with air. The effect created by the air injection is to mix the hog fuel with oxygen. The more efficient combustion associated with BFBB leads to a huge reduction in fly ash production, and hence lower operating costs overall.

An internal study of the profitability of BFBB, conducted in 1996, concluded that the financial returns from a retrofit were insufficient to satisfy the company’s existing policy regarding capital expenditures. However, the environmental manager at Elk Falls felt that the internal study had overlooked many of the potential benefits associated with the retrofit.

To allow a more comprehensive financial analysis, a total cost assessment (TCA) was carried out.

Traditional pollution control initiatives consist of ‘end of pipe’ solutions, and focus on treating waste products rather than reducing their creation. In recent years, many of these technologies have been replaced by measures collectively known as pollution prevention, or ‘P2’.

Pollution prevention initiatives seek to anticipate and mitigate the production of wastes by examining the processes which lead to their creation. However, many P2 projects are rejected because financial evaluations are incomplete, time horizons are insufficient, or the required return on investment requirements is too great.

Traditional accounting methods tend to ‘pool’ costs into a limited number of accounts. This means that costs such as insurance, regulatory fees and maintenance, which are associated with specific outputs and activities, may be partially hidden, and often allocated on the basis of a single overhead rate.

A modified approach is required in order to understand more clearly the costs and benefits which have an impact on the bottom line.

The financial components considered in the TCA included landfill costs, boiler operation and maintenance, environmental permitting costs, and intangible costs. Savings would be realised in landfill costs due to the large reduction in fly ash. Meanwhile a lower concentration of fly ash in the
boiler’s flue gases lowered maintenance costs. This in turn would increase boiler availability, and reduce the plant’s reliance on other energy sources.

As well as drastically cutting fly ash emissions, the lower combustion temperatures of a BFBB also result in lower particulate, nitrogen oxide and sulphur dioxide emissions. When investing in pollution abatement equipment such as a BFBB, the Canadian government allows firms to write off their capital costs over the first three years of operation.

The results of the TCA indicated a payback period of just over two years - close to the company’s requirement of a two-year payback period on capital investments. The net present value (NPV) of the BFBB was estimated to be $25 million, using a discount rate of 8%. Therefore the total future saving as a result of the BFBB operation would be more than twice the initial outlay of $10 million. Thus the installation of a BFBB was judged to be not only environmentally beneficial but also a financially sound investment.

*Case study adapted from: www.bsdglobal.com*
Case Study 4-10: BHP Billiton

Keywords: Life Cycle Analysis

All products in BHP Billiton’s Stainless Steel Materials portfolio have life cycles that begin with the extraction of raw materials and progress through manufacturing to consumption and finally disposal or reuse of the end products. Throughout the product life cycles, inputs include resources and energy, while outputs include air emissions, water, wastes and commercial products, many of which play useful roles in our everyday lives. This year BHP Billiton completed a study to help them better understand the environmental strengths and weaknesses of their processing operations and the environmental impacts and benefits of stainless steel (made from their products) during its life cycle.

Conducted with the BHP Billiton Newcastle Technology Centre, the study was undertaken to determine how changes in eco-efficiency of the plant operation since 1998, and the proposed introduction of new technology as part of future expansion, could deliver improvements in the environmental performance of stainless steel made from nickel and chrome products.

The impact assessment is based on the following inventory values:
- Resource energy
- Greenhouse gas emissions
- Oxides of nitrogen
- Oxides of sulphur
- Suspended particulate material
- Acidification potential
- Nutrification potential
- Photochemical ozone formation potential
- Solid waste

The study found that, when compared with the current mining and refining process, the expanded Yabulu Refinery would significantly reduce the environmental impacts of nickel production.

The company has conducted and been involved with previous LCA studies on nickel and chrome products, including the Nickel Development Institute (NiDi) worldwide nickel LCA study and the pilot project performed at the BHP Billiton Newcastle Technology Centre for the purpose of establishing a baseline stainless steel case study.

In addition to details of LCA studies, the company has information on health, safety and environmental issues associated with their products available on-line. This system provides BHP Billiton businesses with access to relevant current and proposed legislation, life cycle inventory and assessment information, safety data sheets on different materials, and health and environmental data on all their products.

Based on this and other relevant information, the company provides advice on the responsible use of their products to immediate customers, end-users and other interested parties. This advice includes information on product use, storage, transport, recycling and disposal.

Ultimately, by taking a whole-of-life view of its products, BHP Billiton aims to ensure that they are sustainable and valuable to its customers and shareholders.
At the end of their product life, stainless steel and most nickel and chrome alloys are recycled into new stainless steel, which usually contains around 50 per cent recycled material. Properly applied, materials containing nickel and chrome can help maintain and improve the quality of life and provide sustainable product solutions.

*Case study adapted from: www.bhpbilliton.com*
Case Study 4-11: RMC

**Keywords:** Benchmarking, auditing

Employing over 29,000 staff worldwide and with annual turnover of some £4.8 billion, RMC is the world’s largest supplier of ready mixed concrete, Europe’s largest aggregates producer and the world’s 10th largest global cement producer.

Due to the decentralised and far-flung nature of its operations and business units, RMC Group has developed a unique annual benchmarking process that uses the BiE Index as a core element. The audiences for this process are the environment managers in each country, the individual business and country managers, the Board Environment Committee, Board Executive Committee and the Group Main Board.

Annually, since 1999, each audience is presented with a clear overview of how the countries and major business units are progressing in terms of improved environmental management. The elements of this overview consist of three strands:

1. The BiE Index score for each business (original ten “engagement” questions);
2. The external “environment” in which each business operates;
3. The size of the business unit within the Group in terms of annual sales.

Typically, some 35 businesses across 22 countries participate in the assessment – incorporating all of RMC’s business interests in 16 European countries, 3 countries in the Americas, 2 countries in the Middle East, and 2 countries in Asia and Australia.

Each participant completes the BiE Index questionnaire in December. The questionnaire is scored in January and the results are fed back in March. The BiE scores are subsequently correlated with the size of the business in terms of annual sales and the external environment within which the business operates. The latter is derived by assessing a basket of environmental drivers in each country (or states in the case of the USA) - these cover single or multi media regulation and its effectiveness, access to justice, national NGO interest, national media interest, local community action, fiscal incentives and eco-taxes. This 3-D analysis is then communicated up through the Group. The Group Board receives the final version in late Spring as part of the annual Board Environment Report.

Internally, assessment of the drivers enables RMC to conduct an efficient review of the engagement of management in the countries and major businesses, the environment the operation is working in, and the risk significance of the business to the Group. These assessments are fundamental to ensuring that senior managers and directors can prioritise action where it is most effective.

The three numeric strands for each country are then converted to a ‘traffic light’ system to improve communication, simplify the scores and avoid unnecessary debates about fractions of a percent difference in individual scores. This system enables each country to see how it scored in comparison with other RMC businesses. The results are also consolidated into an assessment of how well RMC overall has improved its engagement and thus the level of its risk management and impacts worldwide.
For the BiE Index strand of the process, RMC sets an internal pass mark of 70%. In 1999 the average score across all business units was 25%, within a range from 5% to 95%. By the end of 2002 the average score was 60%.

Like many assessment systems, there are inherent risks with incompleteness or incompatibility of data between levels within an organization. From practical experience, RMC can demonstrate that it is possible to obtain different results by carrying out the assessment at various levels. This is not a surprise as large companies often struggle to link boardroom policy and aspiration with day-to-day practice at site level, particularly when insufficient time is available to move the policy to practice or when buy-in is inconsistent across the organization. Nonetheless, used in the right way and with appropriate caveats, linking the BiE Index score with a measure of the external drivers and the size of the business unit in commercial terms has proven an invaluable tool in raising awareness throughout the RMC Group, building understanding and commitment at many levels, and helping focus improvement on priority businesses and tasks.

The benchmarking process employed by RMC is one of a number of initiatives that the Group is undertaking to reduce its environmental impact globally. Working on the adage: “If you can’t measure it, you can’t manage it” RMC uses tools, including the BiE Index, to provide a measure of improvements in environmental performance. The integration of environmental data collection into RMC Group’s business reporting and auditing process has enabled progress towards best practice goals. For example, with verifiable CO₂ emissions data available from 1990 to 2001, RMC Group is developing forecasts and scenarios to 2012.

By combining the BiE Index with two other measures, RMC has created a valuable management tool that provides a good top-down assessment of the state of environmental management across its many businesses. This is underpinned by more sophisticated performance-based audits in individual countries and sites, including from 2003, cross border audits. Overall, the RMC process remains true to the spirit of BiE but has taken it to another level of usefulness.

Case study adapted from: www.bitc.org.uk
Case Study 4-12: Cardboard packaging (Thailand)

**Keywords:** LCA

The use of cardboard is on the increase in Thailand, particularly in use as packaging. Cardboard boxes are very simple products, but behind them are a comprehensive series of processes. The processes are organised in a loop with continuous input of virgin material (tree) and continuous output of used material (used boxes). Each process in the circle causes emissions to the environment and contributes to environmental impacts such as global warming, acidification, eutrophication, oxygen depletion and photochemical ozone formation (smog).

This case study considers an analysis of a cardboard box produced, used and recycled in Thailand. Based on measurements, estimations, assumptions and simulations, the cardboard box has been analysed, using life cycle assessment, in all production steps from wood production to landfill disposal.

The exact fraction of cardboard boxes which are ending up in landfills in Thailand is unknown, but even at a low estimated land filling rate of 20%, methane emissions from anaerobic degradation of the paperboard appears to constitute a major potential source of global warming and smog formation in the box’s life cycle. Contributions to acidification are to a large extent due to transportation, paper forming and virgin pulp production as a result of $\text{SO}_x$ and $\text{NO}_x$ emissions from engines, heat and power plants. The main sources of eutrophication and oxygen depletion are the cleaning steps in the recycling processes of cardboard factories as well as thickening and paper pressing in papermaking processes. This is due to washout of organic matter and nutrients from the pulp. Other major sources of smog formation are the drying processes in the cardboard factory as a result of coal-based steam production.

In order to reduce the overall environmental impacts from cardboard in Thailand, a number of suggestions have been given below.

- **Reuse the box as many times as possible:** In many cases cardboard boxes can be used repeatedly, limiting the production of new boxes and associated environmental impacts.

- **Recycle the cardboard when the box cannot be used anymore:** Old and worn out boxes can be collected, sorted and used as raw material for new cardboard. Recycling of the cardboard saves impacts from all pulp production processes and should be applied whenever possible.

- **Do not put cardboard in landfill:** Land filling is not a suitable disposal method for cardboard because the material is converted into methane which contributes to global warming and smog formation. Contributions to global warming and smog formation can be reduced dramatically if the land filling of cardboard is limited.

- **Implement landfill gas collection and treatment systems:** Landfills which receive cardboard and other organic matter in spite of the above recommendations should be equipped with proper landfill gas collection and treatment systems to limit impacts from methane and other gaseous emissions.

- **Reduce electricity consumption in the cardboard factory:** Electricity consumption contributes significantly to environmental impacts in the box’s life cycle. Contribution to global warming, smog formation and acidification could be reduced if electricity use in all factories was reduced by implementation of “cleaner production” in the factories.
Avoid N-compounds in sizing additive: It has been difficult in this study to find information about chemicals applied during the lifecycle of the cardboard box due to confidentiality. However, it has been observed that some sizing additives contain nitrogen (e.g. ammonium sulphate) which supposedly contributes to eutrophication when the paperboard box is recycled. Hence, replacing N-based sizing additives whenever possible should be considered provided that impacts from substitutes are not worse.

Limit the use of clips and sticky tapes in paperboard boxes: Clips and sticky tapes applied in boxes become solid waste when the box is recycled. Box designers should consider how to limit the use of clips and sticky tapes during both production and use without compromising box quality. This would also limit impacts from clips and sticky tapes production, which have not been considered in this study.

Establish cleaner paperboard collection systems: Presently in Thailand, boxes are disposed off with other waste, meaning that they have to be cleaned on arrival at the recycling factory. Collecting boxes separately from other waste will reduce the cleaning required and hence electricity consumption in the factory. Furthermore, the need to import recycled cardboard with less contamination can be reduced.

Case study adapted from: www.howproductsimpact.net/box/
EXERCISES

Exercise 4-2 – Identifying environmental tools

With reference to the experiences in your own company identify which of the various environmental tools discussed in this session you have used in the recent past. Identify some of the key learning points associated with the implementation of each tool (you may wish to focus only on one or two of these tools), and share these with the colleagues in your small groups.

- What was the underlying motivation for introducing the tool in your company? Was there a particular champion who may have driven the introduction of this tool?
- What was the anticipated outcome of the tool? Has this objective been met? If not, why not?
- What do you think should be done differently for the tool to be more effective?

(See also exercise 4-3)

Exercise 4-3 – Reviewing the case studies

Each delegate should choose one of the case studies contained in their manuals, read through it, and then present a summary of this case study to the other delegates. After presenting the case study, delegates should consider some of the key learning points that have arisen from this study, focusing in particular on the implications of the case study for their respective companies.
Exercise 4-4 – Benefits and barriers of environmental tools

The following table lists some of the principal types of environmental tools that have been reviewed in this module. Using this table – and with reference to the experiences in your own company – identify which of the various environmental tools you have used in the recent past. For each of these tools, highlight some of the benefits that have achieved for your company, and identify some of the key barriers that may have been encountered. For those tools that have not yet been used in your company and/or which you have not had direct experience with, identify what you see as potential benefits and barriers that may typically be associated with each tool.

<table>
<thead>
<tr>
<th>TOOL</th>
<th>SUMMARY</th>
<th>CASE STUDY</th>
<th>BENEFITS REALISED FOR THE COMPANY</th>
<th>BARRIERS ENCOUNTERED</th>
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<tbody>
<tr>
<td><strong>Environmental management tools</strong></td>
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<tr>
<td>Environmental Management Systems</td>
<td>The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining an environmental policy</td>
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<tr>
<td>Internal training and communication</td>
<td>The provision of structured training programmes aimed at building capacity and awareness on the benefits and techniques of environmental management.</td>
<td>Case study 3-3</td>
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<tr>
<td>Cleaner production strategy and management programme</td>
<td>The continuous application of an integrated preventive environmental strategy to processes, products and services so as to increase efficiency and reduce risks to humans and the environment.</td>
<td>Case study 3-11 and 4-7</td>
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<tr>
<td>Eco-Efficiency</td>
<td>Eco-efficiency is a management philosophy which aims to achieve “more with less” by making efficiency improvements within existing processes.</td>
<td>Case study 3-12</td>
<td></td>
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<tr>
<td>Sustainable production and consumption</td>
<td>It includes interventions that influence consumption patterns (e.g., product stewardship, product labelling and information and product design).</td>
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<tr>
<td>Life cycle management</td>
<td>An integrated concept for managing the total life cycle of products and services towards more sustainable consumption and production patterns.</td>
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<tr>
<td>TOOL</td>
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<tr>
<td>Environmental management tools</td>
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</table>
| Design for environment                   | An integrated concept for managing the total life cycle of products and services towards more sustainable consumption and production patterns. Design changes may apply to:  
   - raw materials  
   - manufacturing process  
   - product use  
   - end-of-life                                                                                                                          | Case study 3-14 |                                   |                      |
<p>| Product services systems                 | Developing a marketable mix of products and services that are jointly capable of fulfilling a client’s need – with less environmental impact.                                                                 |            |                                   |                      |
| Product stewardship (also known as shared responsibility, and extended producer responsibility) | Product stewardship is where all parties involved in the production, selling or use of a product take responsibility for the full environmental and economic impacts that result from the production, use and disposal of that product. | Case study 4-8 |                                   |                      |
| Industrial ecology                       | Industrial ecology aims to mimic natural ecosystems in industry. It looks at promoting the symbiotic co-location of industries so that waste from one industry can serve as a raw material input into another. | Case study 4-6 |                                   |                      |
| Environmental impact assessments         | Provides a description of accepted levels of performance and/or prompts the setting of performance targets. Identifies proven means for modifying behaviour to reach these performance targets.                           |            |                                   |                      |
| Environmental risk assessments           | A structured process for describing a hazard, identifying the potential for exposure to the hazard, estimating the risk or likelihood of a negative effect based on the hazard and exposures and considering uncertainties associated with the hazard. |            |                                   |                      |</p>
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<tr>
<td>Environmental technology assessments</td>
<td>Helps decision-makers assess the potential impact of using a new or existing technology. The assessment considers the costs of the technology, the monetary benefits, and its environmental, social and political impacts.</td>
<td>Case study 4-10 and 4-12</td>
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<tr>
<td>Cleaner production opportunity assessments</td>
<td>A systematic approach to identifying opportunities for implementing cleaner production/eco-efficiency measures in a company.</td>
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<tr>
<td>Life cycle assessments</td>
<td>Provides a systematic approach to measuring resource consumption and environmental releases throughout the entire life cycle of a product or service – from resource extraction, raw material transport, manufacture, distribution and use, to final disposal.</td>
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<tr>
<td>Total cost assessments</td>
<td>TCA captures costs and savings that are generally ignored by traditional approaches, with the aim of allowing environmental investments to compete more successfully for limited capital funds. TCA helps to ‘level the playing field’ for investments in environmental improvements and pollution prevention.</td>
<td>Case study 4-9</td>
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<tr>
<td><strong>Environmental monitoring and auditing tools</strong></td>
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<tr>
<td>Environmental auditing</td>
<td>A systematic, documented verification process for objectively obtaining and evaluating audit evidence to determine whether specified environmental activities, events, conditions, management systems or information about these matters confirm with audit criteria, and communicating the results of this process.</td>
<td>Case study 3-7</td>
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<tr>
<td>Supply chain audits</td>
<td>Provides the means for monitoring progress in the performance of suppliers against the host company’s environmental and/or social criteria.</td>
<td>Case study 3-9</td>
<td></td>
<td>Prompts the setting of performance targets</td>
</tr>
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</table>
## Environmental performance indicators

Indicators are a form of quantified information that is presented as broad-brush aggregated data that provides decision-makers and interested parties with an indication of performance trends. These may include input, output and outcome indicators, and may be aggregated into a smaller set of composite indicators.

## Environmental communication and reporting tools

**Corporate environmental / sustainability reporting**

Disclosure by a company of its environmental (and often also its overall "sustainability") performance. Many companies report against a set of core indicators (including those contained in the GRI guidelines) as well as against issues of concern identified by external stakeholders.

Case study 4-5

**Stakeholder engagement**

The process of interaction between an organisation and its stakeholders, beyond the one-way communication of data. Such engagement may be undertaken in order to gather information and ideas, build and strengthen relationships and trust, improve decision-making and enhance the company’s reputation.

Case study 3-3
The list below offers a broad range of training programmes and kits in the environmental management arena. These should help add to what you have learnt on the course obtained and integrate into the ideas and information you have obtained. Also listed below are some other publications that will be useful.

**General**

**The Efficient Entrepreneur Programme**
Lead by UNEP/Wuppertal Institute. Includes calendar and guidebook which help small companies (SMEs) to measure and improve business performance month by month.  
[www.efficient-entrepreneur.net](http://www.efficient-entrepreneur.net)

**Cleaner Production**

**Cleaner Production: A Training Resource Package**
This package focuses on CP. It assists individuals who wish to teach the techniques and ethos of cleaner production at educational institutions, but it is also applicable to training at government and company level. [http://www.uneptie.org/pc/cp/library/catalogue/cp_training.htm](http://www.uneptie.org/pc/cp/library/catalogue/cp_training.htm)

**Sectoral Workbooks**
- Pulp and Paper Mills  
- Leather Tanning  
- Breweries  
- Textile Wet Processing  
- Lead-Acid Battery Recycling

Available from UNEP DTIE website or on CD ROM. More information for PDFs can be found on:  

**Capacity Building in Training Centres**
Training Package 1 includes three components:  
- Integration of Sustainable Production and Consumption  
- The Application of Environmental Technology Assessment (EnTA)  
- Using Cleaner Production to Facilitate the Implementation of Multilateral Environmental Agreements

Training Package 2 focuses on how to establish and operate a CP Centre including background on CP, training on the tools used by Centres, and information/advice concerning other key operational issues.

**Trainer’s guide**
Introduction to Cleaner Production concept and practice, Introduction to capital budgeting and funding of capital projects, Profiting from Cleaner Production, and Funding Cleaner Production projects.

**Short executive presentations** ‘Profiting from Cleaner Production’ for government, industry, and financiers (includes CD-ROM). More information can be found at [http://www.financingcp.org/training/training.html](http://www.financingcp.org/training/training.html).
**Profiting from Cleaner Production: Checklists for Action**

This support document gives a set of checklists for businesses, government and banks to facilitate financing Cleaner Production investments. More information for PDFs and other materials can be found on: [http://www.financingcp.org/training/training.html](http://www.financingcp.org/training/training.html)

**Life Cycle Assessment**

**Life Cycle Assessment: What It Is and How to Do It**

An introduction to LCA, covering its main characteristics and applications, where and why it is used and other tools associated with it. This report provides a useful structure for anyone interested in this teaching approach. More information on: [http://www.uneptie.org/pc/pc/tools/lca.htm](http://www.uneptie.org/pc/pc/tools/lca.htm)

**UNEP, Life Cycle Management Programme**

[http://www.uneptie.org/pc/sustain/lcinitiative/lcm_program.htm](http://www.uneptie.org/pc/sustain/lcinitiative/lcm_program.htm)

The UNEP DTIE Life Cycle Management Programme is oriented to the application of life cycle approaches. How can LCA and life cycle thinking be brought into practice of business and be related to policy decision-making? The LCM programme creates awareness and improves skills of decision-makers by producing information materials, establishing forums for best practice, and carrying out training programmes in all parts of the world.

**UNEP, Life Cycle Initiative training material**

[http://www.uneptie.org/pc/sustain/lcinitiative/training.htm](http://www.uneptie.org/pc/sustain/lcinitiative/training.htm)

- The **Life Cycle Inventory** programme refers to the second phase of LCA and aims at increasing the access to and quality of LCI databases. The LCI programme improves global access to transparent, high quality life cycle data by hosting and facilitating expert groups whose work results in (web-based) information systems.

- The **Life Cycle Impact Assessment** programme refers to the third phase of LCA and deals with the evaluation of environmental impacts, (e.g. climate change and toxicity) of products and services over their whole life cycle. The LCIA programme increases the quality and global reach of the life cycle indicators by promoting the exchange of views among experts whose work results in a set of widely accepted recommendations.

**Eco-design**

**Eco-design: A promising approach to sustainable production and consumption**

This manual provides basic information to support education programmes in eco-design. More information from: [http://www.uneptie.org/pc/pc/tools/ecodesign.htm](http://www.uneptie.org/pc/pc/tools/ecodesign.htm)

**Sustainable Consumption**

- UNEP/UNESCO: YouthXchange, training kit on responsible consumption, 2002
  [http://www.youthexchange.net](http://www.youthexchange.net)

- UNEP, Production and Consumption tools
  - [http://www.uneptie.org/pc/pc/tools/ems.htm](http://www.uneptie.org/pc/pc/tools/ems.htm)

- UNEP, Sustainable Procurement Activities
  - [http://www.uneptie.org/pc/sustain/design/green-proc.htm](http://www.uneptie.org/pc/sustain/design/green-proc.htm)
Talk the Walk – Advancing Sustainable Lifestyles through Marketing and Communication


Sustainability Reporting

High 5! – Introducing SMEs to sustainability reporting and the GRI”

This handbook was developed using a multi-stakeholder consultative process convened by the Global Reporting Initiative (GRI) in response to many requests for a “beginner’s guide”. It offers a step-by-step guidance and practical how-to advice on using the GRI Sustainability Reporting Guidelines, so that SMEs can easily and effectively create sustainability reports that bring value to their businesses and communications practices. Available from: http://www.globalreporting.org/workgroup/sme/intro.asp

Environmental Technology Assessment

An interactive, e-learning package designed to increase dissemination, aid promotion and facilitate the application of Environmental Technology Assessment (EnTA).

http://www.unepzie.org/pc/pc/tools/enta.htm

APELL

A Training Resources Package : Management of Industrial Accident Prevention and Preparedness – This package provides material to give an introduction to the issues of industrial accidents and APELL. It includes background papers, references, overhead slides, case studies and work exercises. More information:

http://www.unepzie.org/pc/apell/publications/related_pubs.html

Tourism

Sowing the Seeds of Change: An Environmental Teaching Pack for the Hospitality Industry – This is a comprehensive information pack for developing and expanding the environmental curriculum in hotel schools, produced with the International Hotel and Restaurant Association and EUHOFRA. More information on: http://www.unepzie.org/pc/tourism/library/training-hotel.htm

Thematic Publications, Brochures

The above training manuals are supported by a library of UNEP documents on various technology and policy issues, as listed in the brochures below – available on:

http://www.unepzie.org/pc/pc/library.htm

Hazardous Waste

Training Resource Pack for hazardous waste management in developing economies. More info on:

http://www.unepzie.org/pc/hazardouswaste/menu.htm

Hazardous Waste Policies and Strategies – a trainer’s manual

UNEP/ISWA (1991) Included in Training Resource Pack referenced above; also on:

http://www.unepzie.org/pc/hazardouswaste/ssmenuD2.htm
Landfill of Hazardous Industrial Wastes – A trainers’ manual

Risk Management of Contaminated Industrial Land
Included in Training Resource Pack referenced under APELL; also on http://www.uneptie.org/pc/hazardouswaste/ssmenuD5.htm

Environmental Management System (EMS) Training Resource Kit 2nd Edition (UNEP/FIDIC/ICC)
Allows trainers to conduct courses in environmental management systems and offers guidance on adapting the kit to local conditions and culture. More information on: http://www.uneptie.org/pc/mining/library/publications/manual.htm

UNEP/FIDIC / ICLEI Urban Environmental Management: Environmental Management Training Resources Kit
This offers local authorities a systematic approach to integrate environmental considerations into all aspects of their activities. More information on: http://www.unep.or.jp/ietc/Announcements/EMSkit_launch.asp

Produced by DTIE Economics and Trade Unit. Also available on: http://www.unep.ch/etu/publications/EIAMan_2edition.htm
Environmental Technology Assessment (EnTA) – is a tool for improving the quality of decision-making, building consensus among stakeholders and keeping assessments focused. Teaching material can be developed from EnTA on-line, found on: http://www.unep.or.jp/ietc/Publications/index.asp

Environmental Technology Assessment (EnTA) in Sub-Saharan Africa – a UNEP EnTA Leadership
More information: http://www.unep.or.jp/ietc/Publications/index_Integrative.asp

The Environmental Management Navigator
The package includes materials for training of SMEs on selecting and applying appropriate tools for improved environmental management and performance. For more information: http://www.em-navigator.net/

Resources for Life Cycle Assessment and Life Cycle Management:
http://www.uneptie.org/pc/pc/tools/lca.htm

Environmental Management of Industrial Estates: Information and Training Resources
This manual shows the potential environmental impacts of industrial estates, introduces the strategies and tools that are available for managing these impacts, and provides case studies collected from real practices around the world. It also proposes some modules for training workshops and a collection of overhead presentations. A list of further reading and contacts is included.
Also available on: http://www.uneptie.org/pc/ind-estates/support-tools/Kit.htm
Final Report on Joint Conference on Engineering Education and Training for Sustainable Development

This report has been prepared for the sponsors and participants of the conference. The collected papers are held by UNEP DTIE in Paris. Some of the material is also available on the Conference website available from here: http://www.enpc.fr

Training Publications from other DTIE Branches

Additional useful training materials useful can be found at http://www.uneptie.org/energy/act/re/RETS/index.htm http://www.areed.org/training/index.htm

OzonAction

Training resources awareness materials, guidelines, resource modules and reports can be found on: http://www.uneptie.org/ozonaction/

Energy

Information useful for training and education on environmentally sound technologies and services can be found on http://www.unep.fr/en/branches/energy.htm

Chemicals

Information useful for training and education can be found on: http://www.chem.unep.ch/publications.htm

Economics and Trade

Information useful for workshops and seminars can be found on: http://www.unep.ch/etu/etp/acts/manpolis/index.htm

International Environmental Technology Centre (IETC)

Information on materials useful for teaching can be found on: http://www.unep.or.jp/ietc/Publications/index.asp

Training on tools for SCP:

http://www.unep.org/pc/cp/library/training/cdgpac/cpsc.htm
MODULE 5: Environmental Initiatives and Institutions

OBJECTIVES

The objectives of this session are to:

- Undertake a brief overview of a broad range of environmentally-related sustainability initiatives (including codes of practice, management standards and general principles).
- Improve your understanding on the inter-relationship between these different initiatives.
- Briefly identify a range of sustainability institutions (business, academic and NGOs).
KEY ENVIRONMENTAL INITIATIVES – UNDERSTANDING THE RELATIONSHIP

Sustainability management standards, codes of conduct and sectoral business initiatives abound – and many of them have been developed over the last decade. Almost all have been developed with input from business, government, labour bodies and non-governmental organisations (NGOs).

One of the best ways to distinguish between them all is in terms of their scope and objective. The next few slides will provide a brief overview of some of the main codes of practice, principles, management standards, specifications and reporting guidelines.

The following selection of significant international environmental initiatives will be outlined in the following pages (divided into the categories below):

- **Global Principles / Codes of Practice**
  - The UN Global Compact
  - The OECD Guidelines for Multinational Enterprises

- **Management System Specifications**
  - ISO 14001
  - EMAS
  - SIGMA

- **Guidelines on reporting and stakeholder engagement**
  - The Global Reporting Initiative (GRI)
  - The AccountAbility AA 1000s

- **Sectoral-specific initiatives**
  - Forest Stewardship Council
  - Marine Stewardship Council
  - London Principles
  - Equator Principles
  - UNEP/Industry sector initiatives
  - UNIDO/UNEP National CP Centres

GLOBAL PRINCIPLES AND CODES OF PRACTICE

**UN Global Compact:** As detailed in this course.

**OECD Guidelines for Multinational Enterprises:** The Organisation for Economic Co-operation and Development (OECD) is a group of 30 developed nations, in which the participating governments discuss, develop and perfect economic and social policy. The OECD Guidelines for Multinational Organisations:

- Are non-legally binding recommendations addressed by governments to multinational enterprises operating in or from adhering countries.
- Are designed to ensure that multi-national organisations conduct their business in accordance with the policies of the countries within which they operate.
- Provide voluntary principles for responsible business conduct on issues such as employment and industrial relations, the environment, bribery and corruption, human rights, consumer interests, information disclosure, competition and taxation.
Were published in 1976 and were revised in 2000, with more of a focus on sustainable development issues as well as including all the core labour conventions of the ILO.

While these Guidelines differ from most of the others considered below – in that they are for governments, rather than companies, to commit to – they nevertheless make a significant contribution to CSR activities. If implemented effectively, they have the potential to demonstrate the efficacy of self-regulation and to contribute to shifting company-stakeholder relationships from the adversarial to the more solutions-focused.

**ICC Business/Sustainable Development Declaration:** was formally launched by the International Chamber of Commerce in April 1991 at the Second World Industry Conference on Environmental Management in Rotterdam, and continues to be widely applied and recognised around the world. The Charter was issued in response to the World Commission on Environment and Development report, and sets out 16 principles for environmental management by individual corporations and business organisations. The Charter covers environmentally relevant aspects of health, safety and product stewardship. Its objective is ‘that the widest range of enterprises commit themselves to improving their environmental performance in accordance with the principles, to having in place management practices to effect such improvement, to measuring their progress, and to reporting this progress as appropriate, internally and externally’. The Business Charter has been published in over 20 languages, including all the official languages of the United Nations.

**MANAGEMENT SYSTEMS SPECIFICATIONS**

Underlying any company initiative aimed at promoting sustainable development is the implementation of a structured management system. In the last decade a number of voluntary management standards have been developed. These provide a systematic means of addressing environmental, social, and health and safety concerns, while also enabling companies to obtain internationally recognised certification that may have valuable marketing benefits.

When management systems are designed and implemented effectively, they can:

- Help companies identify and prioritise their key environmental and/or social impacts in a structured and systematic manner
- Provide a framework for setting clear objectives and targets for managing these impacts
- Ensure that structured processes and procedures are in place for measuring and monitoring performance

While noting the potential benefits of environmental management system specifications (as outlined above) it is important also to appreciate some of the criticisms and concerns that have been raised regarding their use.

Key criticisms include the fact that:

- They focus efforts on incremental improvements rather than on the redesign and rethinking – “doing what you do, right” rather than “doing the right thing”.
- They are often quite rigid and bureaucratic.
- They can be very complex, requiring detailed document control procedures.
- There is often inadequate provision for the integration of stakeholder input.
- Their efficacy can depend on the quality and thoroughness of the certification and accreditation bodies (in this regard it is useful to reflect on the fact that the experience in implementing EMS specifications may differ significantly from country to country, with some regions placing far greater emphasis on environmental performance aspects than others.
which tend to rely more predominantly on the implementation of management procedures).

- There is a difference between process and performance standards/indicators.

Examples

- **ISO 14001**: The cornerstone of the ISO series – and the benchmark standard for environmental management systems – is the ISO 14001 EMS Specification. ISO 14001 focuses on broad organisational processes and describes how a company should manage its organisational system so that it monitors, measures and continually improves on its environmental performance.

- **EMAS**: Similar to ISO 14001, the EMAS standard is a non-regulatory, voluntary standard for environmental management systems and auditing. The key difference to ISO 14001 is that EMAS requires the publication of an externally verified statement of environmental performance. EMAS is also only applicable within the European Union.

- **SIGMA**: The SIGMA Project was formed in June 1999, as a partnership between the British Standards Institute, Forum for the Future and AccountAbility, with sponsorship from the UK Department of Trade and Industry and the Department of the Environment, Transport and the Regions. The project has been working towards helping organisations improve their performance on social, economic and environmental issues. The objective is to create a strategic management framework for sustainability, to be applied across the board, for ultimate adoption at European and international level. The aim is to develop the ‘next generation’ tools and standards for the economic, environmental and social aspects of sustainability, drawing together existing initiatives and placing them within a holistic framework. Any eventual output could then be managed by ISO at the international level.

The ISO 14000 Series

The ISO 14000 series has been developed by the ISO environmental management committee ISO/TC 207, which was set up in 1993 following preparatory consultations held under the umbrella of the Strategic Advisory Group on Environment (SAGE). Today the ISO 14000 involves a series of standards that help companies to establish and maintain a structured and systemic effort to improve their environmental performance. It does this with the goal of continual performance. ISO’s technical committee ISO/TC 207 works closely with the committee ISO/TC 176, responsible for quality management and assurance, to ensure compatibility between the ISO 14000 series and the ISO 9000 family of quality management standards.

The series with its organisation-oriented and product-oriented parts includes the following:

- Environmental Management Systems and Communication: ISO 14001, ISO 14004 and ISO 14063)
- Environmental Auditing (ISO 14010 series and ISO 19011)
- Environmental Performance: ISO 14030 series
- Environmental Labels and Environmental Declarations (ISO 14020 series)
- Life Cycle Assessment (ISO 14040 series)
- Environmental Aspects (ISO Guide 64 and ISO/TR 14062)

These standards can be used independently or together.
Key implications for a certified EMS (ISO 14001)

ISO 14001 includes core elements in five categories with requirements that range from environmental policy, environmental assessment, objectives and targets, training and communication, to review and auditing. It includes fifty-two “shall” (action) requirements, for example under the core element “Check” (checking and corrective action), it includes the element “Monitoring and Measurement” with the requirement that the “organization shall establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have significant impact on the environment”.

With respect to basic concepts used in ISO 14001, an important distinction is that made between environmental aspects and impacts. Environmental impact refers to any change to the environment that results wholly or partially from the organization’s activities, products or services. The environmental management system does not directly influence the environmental impacts. It is focused on the causes of the environmental impact, for which ISO 14001 uses the term “environmental aspect”. The latter is defined as an “element of an organization’s activities, products or services that can interact with the environment”. ISO 14001 does not require an organization to consider all their aspects, but only those that are considered significant. Adding some guidance, ISO 14004 states that significance is associated with environmental concerns such as the scale, severity, duration and probability of the impact, as well as by other business concerns such as potential regulatory or legal exposure. Some of the aspects may not be directly caused by the organization, but by suppliers, contractors or by clients when using the products. In this respect ISO 14001 requires that the management system of an organization considers not only the aspects of its own operations, but also those which it can influence.

In practice the ISO 14001 registration programme allows company facilities to (i) install a management system that over time generates significant advantages, including lowered emissions or waste and lessened risks, (ii) conform to new approaches or methods for environmental management and new environmental legislative requirements, (iii) send a signal to stakeholders that the operator of the facility is showing commitment to environmental responsibility, and (iv) help the company to retain or gain new consumers.

In principle the standard is applicable to any organization that, in addition to implementing and improving an environmental management system, wishes to:

- Assure itself of its conformance with its stated environmental policy,
- Demonstrate such conformance to others,
- Seek certification or registration of its management system by an external organization, and
- Make a self-determination and self-declaration of conformance with the international standard.

The environmental management system is part of the broader system of management in the company, with other subsystems on quality, occupational health and safety, security and economy. This poses the company with the challenge of integration and coordination as it seeks to find appropriate connections between its physical system boundaries and organizational or functional system boundaries.

In countries that do not have a tradition of environmental legislation going back many years or that have weak enforcement of legislation, the introduction of the standard with registration would probably require more physical process changes from companies. The cost of investing in the implementation of ISO 14001 – which may range from US$ 25,000 to US$ 128,000 – is rewarded by savings generated.

ISO has suggested a number of conditions as determining how quickly and how effectively the
return for an organization’s investment in ISO 14001 occurs. They include:

- The status and level of sophistication of its existing management system.
- The degree of environmental challenges it faces.
- The amount and quality of resources it has access to.
- Its state of preparedness.
- The knowledge, skill and ability of its staff.
- The expectations of its stakeholders.
- Its current status of compliance with legal requirements.
- The level of verification required by the organization to meet market requirements or the expectations of stakeholders.

While ISO 14001 has been criticised for being mainly a *process standard* that is weak at addressing *performance standards*, its strength is in laying the basis for improvement, with the establishment of procedures, documentation and operational control, as well as embedding environmental care in the company through training and putting in place an integrated system. ISO 14001 has made its mark with a total of almost 23,000 registrations within the first four years following its launch in 1996.

**GUIDELINES ON REPORTING AND STAKEHOLDER ENGAGEMENT**

An important development in the last ten years has been the rapid increase in corporate reporting on non-financial performance. This section will provide an overview of two of the most important initiatives relating to reporting and stakeholder engagement.

**The Global Reporting Initiative (GRI):** The Global Reporting Initiative (GRI) was established in 1997 by the Coalition on Environmentally Responsible Economies (CERES) and UNEP. The aim was to elevate sustainability reporting to the same level as that of financial reporting, ensuring that it has the same levels of credibility, rigour, timeliness and verifiability. The GRI is now an independent organisation, based in the Netherlands, and recognised as a United Nations Environment Programme (UNEP) Collaborating Centre.

In 1999 the GRI published the first draft Sustainability Reporting Guidelines, which were revised in 2002. The 3d revised Guidelines will be launched in October 2006. By end of 2005, there were over 700 GRI self-declared reporters, mainly based in Europe, North America and Asia. The GRI:

- Provides guidance on the format and content of reports
- Provides assistance on how to normalise and verify data
- Contains a comprehensive set of organisational, management system and performance parameters
- Encourages companies to set targets and commitments
- Strongly encourages the adoption of a stakeholder engagement process.

The GRI complements the Global Compact by providing participants with an instrument to demonstrate accountability with respect to the Global Compact's ten principles in their annual communications and reports. External stakeholders, especially investors and civil society, are also able to use GRI reports to assess how companies are implementing the principles.

*For further information on the GRI see [www.globalreporting.org](http://www.globalreporting.org)*

**The AA 1000 Series:** Launched in 1999, the AA1000S is a best practice standard for a stakeholder-based approach to social and ethical accounting, auditing and reporting. It was developed by the UK Institute of Social and Ethical Accountability (AccountAbility). The AA1000S:
Guides the establishment of an inclusive stakeholder engagement process aimed at identifying key issues and priorities.

- Defines performance metrics and targets.
- Contributes to the development of accounting, auditing and reporting systems.
- Contains the principles of a quality standard as well as a set of process standards that cover planning, accounting, auditing and reporting.
- Makes reference to and builds on previous management system initiatives such as ISO 9001 and ISO 14001.
- Seeks to encourage social and ethical accounting, auditing and reporting practices that are inclusive, complete, material and regular.

For further information on AccountAbility 1000 see [www.accountability.org.uk](http://www.accountability.org.uk).

**The Stakeholder Engagement Manual:** Published by UNEP, AccountAbility and Stakeholder Research Associates in 2005, this practitioner’s package provides companies with practical guidance on how to approach stakeholder engagement to deliver lasting impact. The manual with its two volumes provides case study examples and reminders of what works and what doesn’t.

For the complete text visit [www.accountability.org.uk](http://www.accountability.org.uk) or [http://www.unep.fr/outreach/home.htm](http://www.unep.fr/outreach/home.htm)

### SECTORAL-SPECIFIC INITIATIVES

The next section introduces a number of prominent environmental initiatives that have been developed by different industry sectors.

**The Forest Stewardship Council (FSC):** is an international, non-profit NGO that was founded in 1993 in response to growing international concerns regarding deforestation as well as increasing consumer demand for a credible wood-labelling scheme. The FSC:

- Promotes responsible management of the world’s forests through forest certification and product labelling.
- Comprises national working groups in 28 countries, and is supported by a number of NGOs including WWF, Greenpeace, and Friends of the Earth.
- Covers all types of forest (tropical, temperate and boreal).
- Evaluates, accredits and monitors independent certification organisations, which then certify individual forest management practices.
- Has 10 Principles of Forest Stewardship by which forests are inspected.

To acquire FSC certification, a forest must be managed in an environmentally appropriate, socially beneficial and economically viable manner. Forests that meet these strict standards are given FSC certification and the timber is allowed to carry the FSC label. The FSC label is currently found on over 10,000 product lines including household and garden furniture, kitchen, bathroom and general houseware, wall paper and flooring, and paper and pencils.

For further information on the FSC see [www.fscoax.org/](http://www.fscoax.org/).

**The Marine Stewardship Council:** is an independent, global, non-profit organisation that was set up to promote sustainable fisheries and responsible fishing practices. The MSC was established in 1997 as a joint initiative between WWF and Unilever. The MSC became fully independent from both organisations in 1999, and is currently funded by a range of organisations, including charitable foundations and private companies.

In terms of the scheme, fisheries that have adopted environmentally responsible management practices may use a distinctive blue label for their products. The certification, which is undertaken by independent, accredited certification bodies, is intended to be equally valid for all types of
fisheries, irrespective of size and location. The principles and criteria cover marine fish and invertebrates, but exclude harvest of other marine species, aquaculture and freshwater fisheries. The criteria are intended to ensure that the fish products come from well-managed sources. The MSC is guided by three key principles for sustainable fishing: avoiding over-fishing or depletion of exploited populations; maintaining the structure, productivity, function and diversity of the relevant habitats; and respecting local, national and international laws and standards.

The standard was developed over a period of two years, following an international consultative process with scientists, fisheries experts, environmental organisations and other interested parties. For further information on the Marine Stewardship Council see http://www.msc.org/

The international chemical industry’s Responsible Care programme was first developed in Canada in 1995 to address public concerns about the manufacture, distribution and use of chemicals. It is an internationally recognised framework for voluntary environmental, health and safety improvement that is currently implemented in 46 countries. The initiative attempts to foster the adoption of corporate values that emphasise a long-term commitment to community and occupational health and safety and to environmental protection.

Responsible Care incorporates eight fundamental features including a formal commitment on behalf of each signatory company to a set of Guiding Principles signed by the CEO. This commitment involves progressive development of indicators against which improvements in performance can be measured. A core feature of the initiative is the six Codes of Management Practices dealing with the following issues:

- Community Awareness and Emergency Response
- Pollution Prevention
- Process Safety
- Distribution
- Employee Health and Safety
- Product Stewardship

Companies that adopt Responsible Care are encouraged to implement effective measures for engaging with their neighbouring communities, including, for example, through the establishment of community awareness and emergency response (CAER) committees. At an international level, efforts are currently underway to promote the adoption of Responsible Care in new countries with significant chemicals production, as well as to improve the existing implementation assurance process.

The FTSE4Good Index Series: was launched in July 2001 as an investment tool for investors interested in socially responsible investment. Since its launch, over 250 companies have entered the index, in many cases having to adapt their practices to do so.

The selection criteria and methodology for the FTSE4Good are based on common themes from ten sets of declared principles. Both the philosophy and the FTSE4Good inclusion criteria are regularly revised and updated through a widespread market consultation process, so as to ensure that the criteria reflect recent developments in CSR and SRI practice. To be eligible for inclusion, companies need to meet prescribed standards in three areas: environmental sustainability, universal human rights and developing positive relations with stakeholders. The index series excludes companies involved in tobacco, weapons and nuclear power industries.

For further information on the FTSE4Good see www2.ftse.com/ftse4good/
The London Principles of Sustainable Finance is a voluntary code of seven principles that propose conditions under which financial market mechanisms can best promote the financing of sustainable development. The Principles are intended as a framework to allow financing institutions and policy-makers to identify where future innovation is needed in order to improve the way the financial system as a whole finances sustainable development. The Principles apply to all aspects of finances and not just value-based investment and specific financing and banking niches.

The Equator Principles are a voluntary set of guidelines for managing the social and environmental issues related to the financing of development projects. The principles were first adopted on 4 June 2003 by ten leading international banks from seven countries. The banks will apply the principles globally to project financing in all industry sectors, including mining, oil and gas, and forestry. The banks that first adopted the Equator Principles underwrote approximately $14.5 billion of project loans in 2002, representing approximately 30% of the project loan syndication market globally. The initial banks were ABN AMRO Bank, N.V., Barclays PLC, Citigroup, Inc., Credit Lyonnais, Credit Suisse Group, HVB Group, Rabobank, Royal Bank of Scotland, WestLB AG, and Westpac Banking Corporation.

The Equator Principles are based on the policies and guidelines of the World Bank and International Finance Corporation (IFC), and will be applied by the Banks to all loans for projects with a capital cost of $50 million or more. In adopting the Principles, a bank undertakes to provide loans only to those projects whose sponsors can demonstrate their ability and willingness to comply with comprehensive processes aimed at ensuring that projects are developed in a socially responsible manner and according to sound environmental management practices.

The Principles use a screening process for projects that is based on the IFC’s environmental and social screening process. Projects are categorised by the banks as A, B or C (high, medium or low environmental or social risk). For A and B projects (high and medium risk), the borrower is required to complete an Environmental Assessment addressing the environmental and social issues identified in the categorisation process. After appropriate consultation with affected local stakeholders, category A projects, and category B projects where appropriate, will prepare Environmental Management Plans which address mitigation and monitoring of environmental and social risks.

The Equator Principles were created in response to criticism coming from environmental and social pressure groups that bank loans have often contributed to the contamination and impoverishment of the developing world. While some activists have cautiously welcomed the initiative, others have remained sceptical regarding its implementation. A number of other banks have expressed interest in signing up to the Equator Principles and it is envisaged that the guidelines will become the industry standard.

For further information on the Equator Principles see www.equator-principles.com/

The Greenhouse Gas Protocol Initiative (GHG Protocol) was established in 1998 as a partnership between the World Business Council for Sustainable Development and the World Resources Institute to develop internationally-accepted accounting and reporting standards for greenhouse gas emissions from companies. The GHG Protocol brings together leading experts on greenhouse gas emissions to develop these standards. The GHG Protocol has split the development of the standards into two components:

- Corporate GHG Accounting and Reporting: Corporate Inventory Module – This component is developing a step-by-step guide for companies to account for and report their GHG emissions.
- Project GHG Accounting and Reporting – This component is developing a guide for
accounting and reporting emissions from projects that are developed to offset GHG emissions.

*For further information on the GHG Protocol see* [www.ghgprotocol.org](http://www.ghgprotocol.org/)

**WEF Greenhouse Register Initiative (2004)** In cooperation with leading businesses and environmental organizations, the World Economic Forum has created the Global Greenhouse Gas (GHG) Register to promote corporate GHG emission transparency. Companies are invited to participate in the Global GHG Register, which is a tool for corporations to record their GHG emissions on a public website.

*For further information on the WEF Greenhouse Register Initiative see* [http://www.weforum.org/site/homepublic.nsf/Content/Global+Greenhouse+Gas+Register](http://www.weforum.org/site/homepublic.nsf/Content/Global+Greenhouse+Gas+Register)

**Joint UNEP / Industry Sector Initiatives:** The following initiatives have been created between UNEP and industry whereby companies agree to develop environmentally sound practices along the lines of the Rio principles. Some are well established while others are in the process of being developed:
- UNEP Finance Initiative [http://www.unepfi.org](http://www.unepfi.org/)
- Tour Operators Initiative for Sustainable Development [http://www.toinitiative.org](http://www.toinitiative.org)
- Global e-Sustainability Initiative [www.gesi.org](http://www.gesi.org)
- Advertising and Communication Initiative [www.unepfi.org/pc/sustain/advertising/advertising.htm](http://www.unepfi.org/pc/sustain/advertising/advertising.htm)

**UNIDO/UNEP National Cleaner Production Centres (NCPCs):** Cleaner Production can only be sustained in a country if capacity is in place to adopt it. True appreciation of Cleaner Production and its application can only come about if the concept is promoted by professionals in the beneficiary country itself and adjusted to the local conditions. The role of UNEP’s National Cleaner Production Centres (NCPCs) is to promote, coordinate and facilitate Cleaner Production activities within each country. Their purpose is to build local capacity to implement Cleaner Production in developing countries and economies in transition.

There are 24 UNIDO/UNEP NCPCs in the following countries: Brazil, China, Costa Rica, Czech Republic, El Salvador, Ethiopia, Guatemala, Hungary, India, Kenya, Korea, Lebanon, Mexico, Morocco, Mozambique, Nicaragua, Slovak Republic, South Africa, Sri Lanka, Tanzania, Tunisia, Uganda, Vietnam and Zimbabwe.

NCPCs target primarily to transfer know-how and not to transfer only technology. The centres, and the Cleaner Production assessors trained by them, do not deliver ready-made solutions. They train and advise their clients on how to find the best solutions for their own specific problems. The basic services:
- Raise awareness of the benefits and advantages of Cleaner Production.
- Demonstrate that Cleaner Production works through in-plant Cleaner Production assessments and demonstration projects.
- Train local experts and build local capacity for Cleaner Production.
- Help to obtain financing for Cleaner Production investments.
- Disseminate technical information.
- Provide policy advice to national and local governments.

UNEP assists NCPCs to develop and expand their capacities and services through capacity building. It provides training packages on Cleaner Production and related topics at: [http://uneptie.org/pc/cp/library/catalogue/cp_training.htm](http://uneptie.org/pc/cp/library/catalogue/cp_training.htm)
BUSINESS ORGANISATIONS ON THE ENVIRONMENT

This section looks at a selection of business institutions involved environmental management and related activities:

**The World Business Council for Sustainable Development (WBCSD):** is a coalition of over 130 international companies that provides a business perspective on sustainable development issues and whose primary goal is to encourage high standards of environmental management in business. It conducts research, promotes collaboration, and publishes information to help companies and industry sectors best manage sustainable development issues.

The WBCSD produces many reports and guides on issues ranging from biodiversity to eco-efficiency/metrics that help inform the business and non-business community about the sustainable business approach to the issues and to promote elevated standards. It conducts research, promotes collaboration and publishes information to help companies and industry sectors develop significant improvements in environmental areas and to better understand social issues. WBCSD also produces the Trade and Environment Bulletin each quarterly. The WBCSD’s website features all of its current work, including reports, stakeholder dialogue summaries, case studies, educational initiatives, an interactive discussion page, links to other websites and a list of available publications.

For further information on the WBCSD see www.wbcsd.ch

**The Management Institute for Environment and Business (MEB):** part of the World Resources Institute, is dedicated to educating current and future business leaders by working with business schools to integrate environmental and sustainability issues into the core curriculum, and to provide direct industry outreach and training. It builds bridges between academia and companies by helping to integrate environmental topics into business school curricula, and helps companies develop management practices and skills that result in significant progress in the development of environmental technologies and practices. MEB educates business leaders through these programs:

- Educational Services: Manages the BELL (Business Environment Leadership and Learning) programme, which concentrates on educating business school students about environmental concerns. A related programme, LA-BELL, focuses its efforts on Latin America.
- Outreach Services: Manages the SPLASH (Strategic Partners Learning About Sustainability Horizons) program, which promotes business practices that assist companies in their efforts towards sustainability. Operates the Sustainable Forestry Project, which helps businesses understand and integrate sustainable forestry practices through corporate partnership and other methods.
- Information Services: Publishes a quarterly newsletter and occasional reports covering a range of topics. Past reports include corporate environmental metrics and the “greening” of business school curricula. Produces case studies on environmental topics for use in business schools.
- Events: Holds an annual BELL conference bringing together academics, companies and other experts. Hosts an annual Sustainable Enterprise Summit, focusing on leading-edge themes related to corporate sustainability.

For further information on the WBCSD see www.wbcsd.ch
ACADEMIC/RESEARCH INSTITUTIONS

The following section provides an overview of prominent academic and research bodies involved in environmental management and related sustainable development activities:

*Forum for the Future* is a sustainable development charity which works in partnership with leaders in business, central, regional and local government, in higher education, the media and the voluntary sector. Its philosophy is based on finding economic, social, technological and environmental solutions to build a more sustainable society. These solutions can deliver not only a healthy environment, but a better quality of life, strong communities, and practical answers to poverty and disempowerment. The Forum forges strategic alliances between people and organisations across all the key sectors. Through its partnership approach, Forum for the Future can wield influence where it is needed most - with decision-makers and opinion-formers, predominantly in the UK.

Through its Business Programme, the Forum works closely with 17 Foundation Corporate Partners, representing a range of different sectors, to help them adopt sustainability strategies right across their business. In the broader Forum Business Network, the focus is on how companies can learn from each other, with the Forum’s help, sharing best practice. Projects include helping companies to inspire their staff, engage with stakeholders, and develop strategies on fast-emerging fields such as corporate social responsibility, carbon management and renewable energy.

Forum for the Future publishes a number of reports and position papers on many aspects of sustainable development. Research, consultancy and building cross-sectoral partnerships enable our partners and other key-decision makers to work towards sustainability. The group also publishes a bi-monthly magazine – “Green Futures” – which provides a comprehensive overview of sustainable development issues in the UK.

The Forum’s site offers a comprehensive overview of all Forum activities and contacts. The Forum is revising the site to add downloadable publications, links, and additional resources to the site.

*For further information on Forum for the Future see* [www.forumforthefuture.org.uk](http://www.forumforthefuture.org.uk/)

*The Natural Step:* is a non-profit international organization dedicated to building an ecologically and economically sustainable society. The Natural Step offers a scientifically based framework that serves as a compass for businesses, communities, academia, government entities and individuals working to redesign their activities to become more sustainable. At its core is a set of four “systems conditions” that describe the scientific underpinning of all environmental problems and their solutions.

The Natural Step uses the system conditions as the basis for helping companies and other institutions align their operations with the principles of sustainability. In the United States, The Natural Step assists organizations and corporations that embrace sustainability by:

- **Events:** Holding seminars, executive briefings, annual conferences, workshops, and presentations across the nation.
- **Training:** Conducting training inside companies and for groups of corporate, governmental, and non-profit leaders promoting the four systems conditions of sustainability and how they can be harnessed to create sustainable enterprises.
- **Information Services:** Producing a variety of tools to help companies and organizations educate employees, suppliers, customers and others about sustainability principles.

The Natural Step website features the science, history and regional activities of the organization,
as well as a list of available merchandise, recent news reports about the organization, and a calendar of upcoming events.

For further information on the Natural Step see www.naturalstep.org/

The World Resources Institute (WRI) is a Washington DC-based environmental research and policy organisation that creates solutions to protect the Earth and improve people's lives. The work of the WRI focuses on four key goals: protecting the Earth’s living systems, increasing access to information, creating sustainable enterprise and opportunity, and reversing global warming. The organisation strives to catalyse change through the establishment of partnerships that implement innovative, incentive-based solutions founded upon objective data, harnessing the power of markets to ensure change. They provide – and help other institutions to provide – objective information and practical proposals for policy and institutional change aimed at fostering environmentally sound and socially equitable development.

For further information on the WRI see www.wri.org/

The Wuppertal Institute, established in 1991 by the government of North Rhine-Westphalia in Germany, is an interdisciplinary and practice-orientated institute that seeks to mediate between politics, economy and the sciences in communicating the concept of sustainable development as defined at the 1992 Rio Earth Summit. The Institute's underlying working guideline is “more wealth, less natural resource use.” It has been active in developing and promoting such concepts as Factor Four and eco-efficiency.

For further information on the Institute see www.wupperinst.org

Institut du Développement Durable et des Relations Internationales (IDDRI), established in 2001, operates a network of representatives from the scientific community, companies, and government agencies to together identify and respond to key issues of concern. Its principal objectives are to contribute to informed decision making at an international level, to foster networking, communication and reflection on key sustainability issues, to undertake research work, and to inform private and public decision-makers and economic and social actors. Key themes include climate change, biodiversity, agriculture, and forestry, as well as transversal issues such as international governance, financing of sustainable development, environmental and social responsibilities, uncertainty and precaution. Key outputs include the dissemination of information and analysis through publications, participation in seminars, training and through the internet.

For further information on the IDRICC, visit www.iddri.org

ENVIRONMENTAL NGOS

Greenpeace: is an environmental NGO, with a presence in 40 countries across Europe, the Americas, Asia and the Pacific. Established in 1971, Greenpeace focuses on what are seen as the most crucial threats to the planet’s biodiversity and environment. Key campaigns include climate change, the protection of ancient forests, oceans, whaling, genetic engineering, nuclear power, toxic chemicals and sustainable trade. To maintain its independence, Greenpeace does not accept donations from governments or corporations but relies on contributions from individual supporters and foundation grants.

For further information on Greenpeace see www.greenpeace.org

WWF is a global organisation founded in 1961 and currently comprising a network of 52 offices operating in more than 90 countries. WWF International, located in Gland, Switzerland, serves as
the central “secretariat” that co-ordinates the activities of the individual national offices. Originally
knows as the World Wildlife Fund its name was changed in 1986 to the World Wide Fund For
Nature to reflect the broader scope of its activities. In 1980 WWF launched the World Conservation
Strategy urging greater efforts at conserving the world’s natural resources, and introducing
the concept of sustainable development which was later given greater prominence in the Brundtland
Report. WWF has identified a set of global priorities, covering six key issues: marine protection,
freshwater species, climate change, toxics, ecoregions, and forests.
For further information on WWF International see www.panda.org.

Friends of the Earth International (FoEI) is a world-wide federation of autonomous national envi-
ronmental organisations that campaign on various environmental and social issues with the aim of
“catalysing a shift toward sustainable societies.” This federation strives to preserve the Earth’s
ecological, cultural and ethnic diversity, increase public participation and democratic decision-
making, promote social, economic and political justice at the local, national, regional and interna-
tional levels, and promote sustainable development. FoEI was founded in 1971 by four
organisations from France, Sweden, England and the USA. The current federation of 68 groups
grew from annual meetings of environmentalists from different countries who agreed to campaign
together on certain crucial issues, such as nuclear energy and whaling.
For further information on FoE International see www.foei.org.

Conservation International is a U.S.-based, non-profit, international organization. CI applies
innovations in science, economics, policy and community participation to protect the Earth’s rich-
est regions of plant and animal diversity in the hotspots, major tropical wilderness areas and key
marine ecosystems. With headquarters in Washington, D.C., CI works in more than 30 countries
on four continents.
For further information on CI see www.conservation.org/xp/CIWEB/about

The World Conservation Union (IUCN) is a unique Union with members from some 140 countries
include over 70 States, 100 government agencies, and 750-plus NGOs. More than 10,000 interna-
tionally-recognised scientists and experts from more than 180 countries volunteer their services to
its six global commissions. Its 1000 staff members in offices around the world are working on some
500 projects. For more than 50 years this ‘Green Web’ of partnerships has generated environmen-
tal conventions, global standards, scientific knowledge and innovative leadership.
For further information on IUCN see http://www.iucn.org/

Rainforest Alliance is a leading international conservation organization. Its mission is to protect
ecosystems and the people and wildlife that live within them by implementing better business
practices for biodiversity conservation and sustainability. Companies, cooperatives, and landown-
ers that participate in their programs meet rigorous standards for protecting the environment,
wildlife, workers, and local communities. The Rainforest Alliance is based in New York City, with
offices throughout the United States and worldwide.
For further information on Rainforest Alliance see www.rainforest-alliance.org

CELB (Centre for Environmental Leadership in Business) was established by Conservation
International and Ford Motor Company. Companies with a global presence have an opportunity to
shift the impact of their activities from environmental harm to ecological stewardship. As business
acquires more influence worldwide and public support for conservation grows, companies are
discovering new incentives to demonstrate environmental leadership. To catalyze this transformation, CELB was formed to engage the private sector worldwide in creating solutions to critical global environmental problems in which industry plays a defining role.

For further information on CELB see www.celb.org/xp/CELB/about/

CIEL (Centre for International Environmental Law) is a public interest, not-for-profit environmental law firm founded in 1989 to strengthen international and comparative environmental law and policy around the world. CIEL provides a full range of environmental legal services in both international and comparative national law, including: policy research and publication, advice and advocacy, education and training, and institution building.

For further information on CIEL see www.ciel.org
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Environmental Principles
Training Package

APPENDICES
Appendix 1 – Implementing the UNGC Environmental Principles: A Framework for Action

The table in this Appendix is intended to provide a useful framework for understanding the interdependencies and linkage between the three UNGC environmental principles, the various environmental management tools and the different training modules. The interrelationship between each of these elements is presented using the UN Global Compact Performance Model as an underlying framework for action. The Performance Model was introduced in some detail in Module 4, Session 1.

<table>
<thead>
<tr>
<th>STEP</th>
<th>Module</th>
<th>Principle</th>
<th>Tool</th>
<th>People most affected</th>
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</thead>
<tbody>
<tr>
<td><strong>STEP 1: FORMING THE VISION</strong></td>
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<tr>
<td>Are environmental issues integrated into the company’s overall vision statement and strategy development?</td>
<td>Module 3: Sessions 1, 2, 3 Module 4: Session 2</td>
<td>7, 8 and 9</td>
<td>Environmental Management Strategies Communication Tools</td>
<td>Senior management</td>
</tr>
<tr>
<td>Has the company actively assessed and understood the business case for effective environmental management?</td>
<td>Module 2 Module 4: Session 2</td>
<td>7, 8 and 9</td>
<td>Environmental Assessment Tools (e.g. Risk and Opportunity Assessments)</td>
<td>Senior management</td>
</tr>
<tr>
<td>Has the CEO and/or other senior business executives communicated the importance of environmental management to the business?</td>
<td>Module 3: Session 2 Module 4: Session 2</td>
<td>8</td>
<td>Communication Tools Environmental Management Systems</td>
<td>CEO and business executives</td>
</tr>
<tr>
<td>Does anyone at company board level have formal responsibility for environmental issues?</td>
<td>Module 4: Session 1 (Enablers)</td>
<td>8</td>
<td>Environmental Management System</td>
<td>Company board level</td>
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<tr>
<td>TOOLBOX:</td>
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<tr>
<td>Review the three UNGC principles</td>
<td>All of the above</td>
<td>All of the above</td>
<td>All of the above and use checklists in Module 3</td>
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<tr>
<td>Analyse major economic, social and environmental world trends (look to the Millennium Development Goals for 2015) <a href="http://www.developmentgoals.org">www.developmentgoals.org</a></td>
<td>All of the above</td>
<td>All of the above</td>
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<tr>
<td>Use the SIGMA Management Framework to structure thinking, vision, strategic direction <a href="http://www.projectsigma.com">www.projectsigma.com</a></td>
<td>All of the above</td>
<td>All of the above</td>
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<td><strong>STEP 2: IDENTIFY LEADERSHIP</strong></td>
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<td>Has a coordinator/sustainability champion been identified? (s/he should have a senior management position and work closely with other managers)</td>
<td>Module 4: Session 1 (Leadership)</td>
<td>8</td>
<td>Environmental Management System</td>
<td>Senior management Sustainability champion</td>
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<td>STEP</td>
<td>Module</td>
<td>Principle</td>
<td>Tool</td>
<td>People most affected</td>
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<td>Have partnerships been formed (for example with NGOs, research bodies, and/or consulting companies) to gain knowledge/innovation on the way forward?</td>
<td>Module 4: Session 3 Module 5</td>
<td>8</td>
<td>Stakeholder Engagement</td>
<td>Middle management Public Relations</td>
</tr>
<tr>
<td>Are regular listening and dialogue sessions held?</td>
<td>Module 4: Session 2</td>
<td>8</td>
<td>Internal training and communication Stakeholder Engagement</td>
<td>Public Relations Middle management</td>
</tr>
<tr>
<td>Who in the company currently has authority to issue policies?</td>
<td>Module 4: Session 1</td>
<td>8</td>
<td>Environmental Management System</td>
<td>Senior and middle management</td>
</tr>
<tr>
<td>Who has responsibility for environmental issues?</td>
<td>Module 4: Session 1</td>
<td>8</td>
<td>Environmental Management System</td>
<td>SHE Management</td>
</tr>
<tr>
<td>TOOLBOX:</td>
<td></td>
<td>All of the above and use checklists in Module 3</td>
<td>All of the above</td>
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<tr>
<td></td>
<td>• Apply the Business Case Matrix to show how sustainability factors enhance business success (<a href="http://www.sustainability.com">www.sustainability.com</a>)</td>
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<td>• Apply the Corporate Responsibility Assessment Tool to help the company manage, measure, improve and report on CSR practices (<a href="http://www.crttool.com">www.crttool.com</a>)</td>
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<td>• Translate the three principles into practical language of the company</td>
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<td></td>
<td>• Draw on the GC Learning Forum</td>
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<tr>
<td>STEP 3: EMPOWERMENT</td>
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<tr>
<td>Is the focus of recruitment, training and career progression aligned to the vision and leadership priorities?</td>
<td>Module 4: Session 1 and 2</td>
<td>8</td>
<td>Internal training and communication</td>
<td>Senior management and human resources</td>
</tr>
<tr>
<td>Have individual and team performance targets been set?</td>
<td>Module 4: Session 1 and 2</td>
<td>8</td>
<td>Environmental Management System Eco-efficiency Cleaner Production Environmental Monitoring (Environmental Performance Indicators)</td>
<td>Senior and middle management Department heads and supervisors</td>
</tr>
<tr>
<td>Is there a rewards/incentives system for environmental performance throughout the company?</td>
<td>Module 4: Session 1 and 2</td>
<td>8</td>
<td>Cleaner Production Eco-efficiency Environmental Performance Indicators Environmental Management System</td>
<td>Senior and middle management</td>
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<tr>
<td>STEP</td>
<td>Module</td>
<td>Principle</td>
<td>Tool</td>
<td>People most affected</td>
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<tr>
<td>Have participatory exercises been carried out aimed at developing the corporate environmental policy and mission statement?</td>
<td>Module 3 and Module 4</td>
<td>7, 8 and 9</td>
<td>Environmental opportunity and risk assessment, Environmental management strategy, Environmental management system</td>
<td>Senior and middle management</td>
</tr>
<tr>
<td>Are environmental management issues included in the company’s training programmes, at all levels from shop-floor tool-box talks, to executive development programmes?</td>
<td>Module 4: Session 1 and 2</td>
<td>7, 8 and 9</td>
<td>Cleaner Production, Internal training and communication, Environmental management system</td>
<td>All levels from senior management to shop-floor, Training department</td>
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<tr>
<td><strong>TOOLBOX:</strong></td>
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<tr>
<td>● Ensure employees work through the self-guided Chronos e-learning tutorial <a href="http://www.sdchronos.org">www.sdchronos.org</a></td>
<td>All of the above</td>
<td>All of the above</td>
<td>All of the above and use checklists in Module 3</td>
<td>All of the above</td>
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<tr>
<td>● Trainers and company managers should utilise the EMS training resource kit <a href="http://www.uneptie.org">www.uneptie.org</a></td>
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<tr>
<td>● To help select the most suitable environmental management tool for the company, use the Environmental Management Navigator package for SMEs <a href="http://www.em-navigator.net">www.em-navigator.net</a></td>
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<tr>
<td>● On the role unions and employee representatives can play, see UNEP / Ecologic report with case study examples under ‘Business / Labour’ at <a href="http://www.unep.fr/outreach/bi/index.htm">http://www.unep.fr/outreach/bi/index.htm</a></td>
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<tr>
<td><strong>STEP 4: DEVELOP POLICIES AND STRATEGIES</strong></td>
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<tr>
<td>Has a company environmental policy (that is distinctive to the company culture) been drawn up and been made available to all?</td>
<td>Module 4: Session 1 and 2</td>
<td>7, 8 and 9</td>
<td>Environmental management strategy, Internal training and communication, Environmental reporting</td>
<td>Senior management to shop-floor, Training department</td>
</tr>
<tr>
<td>Have specific environmental objectives and targets been set to add clarity to the company environmental policy? (These may relate for example to the quantity of raw materials used, quantity of emissions, waste produced per ton of finished product, efficiency of material and energy use, number of environmental incidents, % waste recycled, % recycled material used in packaging, and so on)</td>
<td>Module 4: Session 1 and 2</td>
<td>7 and 8</td>
<td>Cleaner production opportunity assessment, Environmental management system, Environmental monitoring and auditing, Environmental performance indicators</td>
<td>Senior and middle management</td>
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<tr>
<td>STEP</td>
<td>Module</td>
<td>Principle</td>
<td>Tool</td>
<td>People most affected</td>
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<tr>
<td>Are the objectives realistic and achievable from a business perspective?</td>
<td>Module 4: Session 1 and 2</td>
<td>7 and 8</td>
<td>Total Cost Assessments, Cleaner Production Opportunity Assessments, Eco-efficiency</td>
<td>Senior management, Finance</td>
</tr>
<tr>
<td>Are they focused on risk reduction and liabilities?</td>
<td>Module 4: Session 2</td>
<td>7</td>
<td>Environmental Risk Assessment, Environmental Impact Assessment, Life Cycle Assessment</td>
<td>SHE Management, Senior and Middle Management</td>
</tr>
<tr>
<td>Are they quantified and measurable over time?</td>
<td>Module 3 and Module 4</td>
<td>7 and 8</td>
<td>Environmental monitoring and auditing</td>
<td>Middle management</td>
</tr>
<tr>
<td>Do they meet the expectations of your stakeholders?</td>
<td>Module 4</td>
<td>8</td>
<td>Stakeholder engagement, Environmental reporting</td>
<td>Board, Public relations, Senior management to shop floor</td>
</tr>
<tr>
<td>Have you considered all relevant laws and regulations?</td>
<td>Module 3 and Module 4</td>
<td>7 and 8</td>
<td>Environmental management system, Environmental auditing and monitoring</td>
<td>SHE Management, Legal Department</td>
</tr>
<tr>
<td>Have you considered the potential business advantage of each possible change?</td>
<td>Module 2 and Module 3</td>
<td>7 and 8</td>
<td>Cleaner Production Opportunity Assessment, Total Cost Assessment</td>
<td>Senior and middle management</td>
</tr>
<tr>
<td>Have you considered potential technical or operational constraints?</td>
<td>Module 4</td>
<td>7, 8, 9</td>
<td>Cleaner Production Opportunity Assessment, Environmental Technology Assessment, Supply Chain Assessments</td>
<td>Technical and operations management</td>
</tr>
<tr>
<td>Have you considered the views and expectations of interested parties outside the company (customers and suppliers)? Have partnerships with other groups been forged?</td>
<td>Module 4</td>
<td>7 and 8</td>
<td>Stakeholder engagement, Sustainability reporting, Supply chain audits and assessments, Industrial ecology</td>
<td>Public relations, Market research, Senior and middle management, Procurement and sales</td>
</tr>
<tr>
<td>Are all the staff involved? Is there an employee suggestion process with clear follow through?</td>
<td>Module 4</td>
<td>7 and 8</td>
<td>Internal communication and training, Environmental Management System</td>
<td>Senior management to shop floor, Training department</td>
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<td>STEP</td>
<td>Module</td>
<td>Principle</td>
<td>Tool</td>
<td>People most affected</td>
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<tr>
<td>TOOLBOX:</td>
<td>All of the above</td>
<td>All of the above</td>
<td>All of the above and use checklists in Module 3</td>
<td>All of the above</td>
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<tr>
<td>● Use tools such as life-cycle assessment, resource flow audits and environmental reviews to identify key areas for change</td>
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<td>● Hold workshops to help forge partnerships with scientific groups, academia, environmental groups to strengthen knowledge base, increase access to information etc.</td>
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<td>● Forge partnerships with suppliers to develop sustainable solutions to problems</td>
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<tr>
<td>● Use the International Declaration on Cleaner Production for guidance on how to implement CP in the company</td>
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<td><a href="http://www.uneptie.org/cp/declaration">www.uneptie.org/cp/declaration</a></td>
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<tr>
<td>STEP 5: ALLOCATE RESOURCES (time, knowledge, technology and finance)</td>
<td>Module 2 and Module 4</td>
<td>7, 8 and 9</td>
<td>Cleaner Production Opportunity Assessment Total Cost Assessment Environmental Technology Assessments</td>
<td>Technical, operational and financial management</td>
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<tr>
<td>Have the following issues been considered:</td>
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<td>The affordability of solutions</td>
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<td>What improvements will result and how they relate to the designated priority</td>
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<td>Whether the options are practical and feasible taking into account staff capacity</td>
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<td>Does the plan include the following:</td>
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<td>A clear description of objectives, targets and actions to reach them</td>
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<tr>
<td>Description of the people and departments involved</td>
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<td>Budget allocation</td>
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<td>Identified capacity and training needs</td>
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<td>Time period and deadline</td>
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<td>Description of monitoring system and corrective measures</td>
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<tr>
<td>Module 4</td>
<td>8</td>
<td>Environmental Management System Environmental Monitoring and Auditing Internal Communication and Training</td>
<td>Senior management to shop floor SHE management Training department</td>
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<tr>
<td>STEP</td>
<td>Module</td>
<td>Principle</td>
<td>Tool</td>
<td>People most affected</td>
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<tr>
<td>TOOLBOX:</td>
<td>All of the above Module 4: Session 3 Module 5</td>
<td>All of the above</td>
<td>All of the above and use checklists in Module 3</td>
<td>All of the above</td>
</tr>
<tr>
<td>STEP 5: PROCESSES AND INNOVATION</td>
<td>Module 4</td>
<td>7, 8 and 9</td>
<td>Environmental Management Strategy, Environmental Management System</td>
<td>Senior management Design department, Research and Development Technical and operations management Training department</td>
</tr>
<tr>
<td>Are the key processes that create improvement understood by all employees?</td>
<td>Module 4</td>
<td>8 and 9</td>
<td>Cleaner Production Opportunity Assessment, Internal Communication and Training Environmental Management System</td>
<td>Senior management to shop floor Training Department</td>
</tr>
<tr>
<td>Has the product's life-cycle been analysed in order to identify opportunities to reduce material and resource costs?</td>
<td>Module 4</td>
<td>7 and 8</td>
<td>Life Cycle Assessment, Supply Chain Audits, Cradle-to-cradle design, Total Cost Assessment</td>
<td>Research and Development Design SHE management.</td>
</tr>
<tr>
<td>Have tools and processes been formalised through an EMS approach such as ISO 14001?</td>
<td>Module 4</td>
<td>8</td>
<td>Environmental Management System</td>
<td>SHE management Training department</td>
</tr>
<tr>
<td>STEP 6: IMPACT ON VALUE CHAIN</td>
<td>Module</td>
<td>Principle</td>
<td>Tool</td>
<td>People most affected</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
<td>-----------</td>
<td>------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Are you working with suppliers and customers on environmental issues?</td>
<td>Module 4</td>
<td>7, 8 and 9</td>
<td>Supply chain audits and assessments, Industrial ecology, Eco-labelling, Product stewardship, Extended producer responsibility, Product-services systems</td>
<td>Public relations, Procurement and sales, Research and Development, Design</td>
</tr>
<tr>
<td>Has a stakeholder advisory panel been formed in the communities around your primary operations (where appropriate)?</td>
<td>Module 4</td>
<td>7 and 8</td>
<td>Stakeholder engagement</td>
<td>Public Relations, Senior Management, Legal department</td>
</tr>
<tr>
<td>Have you initiated programmes to improve supplier performance and share rewards?</td>
<td>Module 4</td>
<td>8</td>
<td>Supply chain audits and assessments, Life cycle management, Industrial ecology, Product-service systems, Product stewardship, Eco-labelling, Communication and reporting tools</td>
<td>Procurement, Senior and middle management</td>
</tr>
<tr>
<td>STEP</td>
<td>Module</td>
<td>Principle</td>
<td>Tool</td>
<td>People most affected</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-----------</td>
<td>------</td>
<td>----------------------</td>
</tr>
</tbody>
</table>
| TOOLBOX: | Sector-wide codes of practice  
Supplier and customer audits  
Product life-cycle stewardship  
Supply chain management standards  
Product labelling | All of the above and  
Module 4: Session 3  
Module 5 | All of the above | All of the above |

<table>
<thead>
<tr>
<th>STEP 7: IMPACT ON EMPLOYEES</th>
<th>Module</th>
<th>Principle</th>
<th>Tool</th>
<th>People most affected</th>
</tr>
</thead>
</table>
| Have you looked at the impact of these changes on employee satisfaction and morale? | Module 4: Session 1 | 8 | Internal communication and training  
Environmental auditing | Human resources SHE management |
| Do you continue to hold regular listening and dialogue sessions? | Module 4: Session 1 | 7 and 8 | Internal communication and training  
Environmental management system | SHE management Human resources and training |

| TOOLBOX: | Design and implement employee surveys  
Stakeholder Engagement Manual [http://www.unep.fr/outreach/home.htm](http://www.unep.fr/outreach/home.htm) | All of the above and  
Module 4: Session 3  
Module 5 | All of the above | All of the above |

<table>
<thead>
<tr>
<th>STEP 8: IMPACT ON SOCIETY</th>
<th>Module</th>
<th>Principle</th>
<th>Tool</th>
<th>People most affected</th>
</tr>
</thead>
</table>
| Have you considered needs/perceptions of: local community, human rights, labour and environmental organisations, business networks, rating consultancies? | Module 4: Session 1 and 2 | 7 and 8 | Stakeholder engagement  
Environmental reporting  
UNEP APELL | Public relations Legal department SHE management |

| TOOLBOX: | Ensure site opinion surveys  
Form local and corporate advisory panels  
Use the ETHOS indicators on CSR [www.ethos.org.br](http://www.ethos.org.br)  
Introduce APELL to achieve prevention of and preparedness for accidents [www.uneptie.org/apell](http://www.uneptie.org/apell)  
Stakeholder Engagement Manual [http://www.unep.fr/outreach/home.htm](http://www.unep.fr/outreach/home.htm) | All of the above and  
Module 4: Session 3  
Module 5 | All of the above | All of the above |

<table>
<thead>
<tr>
<th>STEP 9: REPORTING</th>
<th>Module</th>
<th>Principle</th>
<th>Tool</th>
<th>People most affected</th>
</tr>
</thead>
</table>
| Has the CEO submitted the general statement on the company’s activities in support of the GC? | Module 4: Session 1 and 2 | 8 | Environmental management strategy  
Sustainability reporting  
Stakeholder engagement | CEO Public Relations SHE management |
<table>
<thead>
<tr>
<th>STEP</th>
<th>Module</th>
<th>Principle</th>
<th>Tool</th>
<th>People most affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does this include a description of how activities have integrated GC principles into company practice?</td>
<td>Module 3</td>
<td>7, 8 and 9</td>
<td>Environmental management system Sustainability reporting</td>
<td>CEO, SHE management, Public relations</td>
</tr>
<tr>
<td>Does the company have procedures in place for reporting on its environmental performance to relevant affected stakeholders?</td>
<td>Module 4</td>
<td>7 and 8</td>
<td>Environmental management system Stakeholder engagement Environmental reporting</td>
<td>Public relations, SHE management</td>
</tr>
<tr>
<td>Is there clarity on the types of environmental performance data to be reported?</td>
<td>Module 4</td>
<td>7 and 8</td>
<td>Environmental monitoring and auditing Life cycle assessments Environmental management system Environmental performance indicators Environmental / sustainability reporting</td>
<td>SHE manager, Training department, Public relations</td>
</tr>
</tbody>
</table>

**TOOLBOX:**
- Use the Global Reporting Initiative guidelines
  www.globalreporting.org
- Use the Accountability 1000 Framework
  www.accountability.org.uk
- Refer to the Manual on Eco-Efficiency Indicators
  www.unctad.org/isar

| All of the above Module 4: Session 3 Module 5 | All of the above | All of the above and use checklists in Module 3 | All of the above |
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### Appendix 2 – The UNGC Environmental Principles and selected GRI performance indicators

The following table lists selected core performance indicators from the 2002 GRI Sustainability Reporting Guidelines against the three Global Compact environmental principles.

<table>
<thead>
<tr>
<th>Global Compact Principles</th>
<th>GRI Core Indicators: Report Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Category</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
</tr>
<tr>
<td>Principle 7</td>
<td>A precautionary approach</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Indicators: Materials</td>
</tr>
<tr>
<td></td>
<td>EN2</td>
</tr>
<tr>
<td></td>
<td>EN3</td>
</tr>
<tr>
<td></td>
<td>Environmental Indicators: Energy</td>
</tr>
<tr>
<td></td>
<td>EN5</td>
</tr>
<tr>
<td></td>
<td>Environmental Indicators: Water</td>
</tr>
<tr>
<td></td>
<td>EN7</td>
</tr>
<tr>
<td></td>
<td>Environmental Indicators: Biodiversity</td>
</tr>
<tr>
<td></td>
<td>EN9</td>
</tr>
<tr>
<td></td>
<td>EN10</td>
</tr>
<tr>
<td></td>
<td>EN11</td>
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<tr>
<td></td>
<td>EN12</td>
</tr>
<tr>
<td></td>
<td>EN13</td>
</tr>
<tr>
<td></td>
<td>Environmental Indicators: Emissions, Effluents and Waste</td>
</tr>
<tr>
<td></td>
<td>EN15</td>
</tr>
<tr>
<td></td>
<td>Environmental Indicators: Products and Services</td>
</tr>
<tr>
<td></td>
<td>Environmental Indicators: Compliance</td>
</tr>
<tr>
<td></td>
<td>Vision and Strategy</td>
</tr>
<tr>
<td>Principle 9</td>
<td>Environmentally friendly technologies</td>
</tr>
</tbody>
</table>

**Notes:**
- EN5: See GRI Water Protocol.
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Appendix 3 – Communication on Progress

GLOBAL COMPACT GUIDANCE ON COMMUNICATION ON PROGRESS

### Basic Facts about Communication on Progress (COP)
- A COP is an annual description of actions taken in support of the Global Compact, made available to stakeholders.
- It is expected of all companies participating in the Global Compact.
- All COPs will be prominently displayed, or linked to, on the Global Compact website.
- Companies failing to communicate progress will be regarded as inactive and will be identified as such on the Global Compact website.
- The new UN Global Compact 2005 Practical Guide to Communication on Progress, New York: UNGC (http://www.unglobalcompact.org/content/cops/pock_guide.pdf) is a valuable reference on this topic.

Global Compact participants are expected to communicate with their stakeholders on an annual basis about progress in implementing the Global Compact principles through their annual reports, sustainability reports or other corporate communications. Participants are also expected to submit a short description and a URL link to these communications on the Global Compact and/or Global Compact local network website.

To safeguard the integrity of the initiative as a whole, only those participants who communicate progress will be allowed to continue their participation in the Global Compact.

Communications on Progress (COPs) should include the following three elements:
- Statement of continued support for the Global Compact in the opening letter, statement or message from the Chief Executive Officer, Chairman or other senior executive.
- Description of practical actions that participants have taken to implement the Global Compact principles during the previous fiscal year.
- Measurement of outcomes or expected outcomes using, as much as possible, indicators or metrics such as those developed by the Global Reporting Initiative.

**Note:** COPs should be integrated in participants’ already existing communications with stakeholders, such as annual reports or sustainability reports. In the event that a participant does not publish an annual report or a sustainability report, a COP can be issued through other channels where employees, shareholders, customers and other stakeholders expect to read about the company’s major economic, social and environmental engagements.

**Link to and Description of COPs**
Participants are expected to submit a brief description and, where an online version exists, a URL link to their COP on the Global Compact website and/or Global Compact local network website. In the event that an online version of the COP does not exist, participants can submit an electronic version of their COP as an attachment with a description of how they are communicating the content to their stakeholders. More detailed information on how to enter the link to and description of COPs is available on the Global Compact website (http://www.unglobalcompact.org) under “About the Global Compact” “How to Participate” “Further Documents” (The login for submission is “ungc”, the passcode is “action”).
The Global Compact Office accepts COPs in all languages by allowing companies to post links to their respective reports on the Global Compact website and/or Global Compact local network website. The development of local Global Compact networks will offer opportunities to facilitate this process. COPs are important demonstrations of participants’ commitment to the Global Compact and its principles. It is also a tool to exercise leadership, facilitate learning, stimulate dialogue and promote action.

**SUGGESTED MODEL 1**

Global Compact Communication on Progress Integrated into Existing Reports

**Who should use this model?**

Participants who publish one or more of the following prominent public annual reports (including web-based reports):
- Sustainability reports, including GRI-based sustainability reports*
- Financial reports
- Integrated financial and sustainability reports

**How should participants communicate progress?**

Participants should integrate the three elements of Communication on Progress in their public annual reports, in the following way:
- The *statement of continued support for the Global Compact* should be integrated in the opening letter, statement or message from the Chief Executive Officer, Chairman or other senior executive. Ideally, the statement should also indicate that the report contains a Communication on Progress.
- The *description of practical actions taken and process of implementation used* should be formatted as a dedicated section in the annual report, providing a summary with reference to more details in the report or other sources of company information.
  - For example, this section can be formatted as a table listing the Global Compact principles and corresponding relevant sections of the report. This section can also be formatted as a summary of actions under each principle with reference to more details in the report, including performance indicators.
- Measurement of outcomes or expected outcomes. Performance indicators used in the report and relevant to the implementation of the Global Compact principles should be highlighted, either by cross-referencing the indicators with the principles or by referring to those indicators in the description of actions and process. This can also be done by adding to the description of actions a reference to relevant performance indicators.
  - If the information provided in the Communication on Progress has been assured, it is suggested that the company also provides details on how this was accomplished.

*Note for GRI Reporters: GRI reporters should consider cross-referencing GRI indicators with the Global Compact principles, either in the dedicated Global Compact section, or in other sections of the report. GRI reporters are also encouraged to describe the process of implementation of the principles when addressing GRI Reporting Elements 3.4, 3.6, 3.7, 3.11, 3.12, 3.16, and 3.19 and to provide a summary of that information, with reference to more detail in the report, in the dedicated Communication on Progress section of the report.
SUGGESTED MODEL 2
Global Compact Communication on Progress as a Self-Contained, Comprehensive Document

Who should use this model?
This is the default model for all participants who DO NOT communicate publicly and annually through a sustainability or a financial report.

How should participants communicate progress?
This is a model for a self-contained, comprehensive document that contains the three required elements of a Communication on Progress:

- A Statement of continued support for the Global Compact from the Chief Executive Officer, Chairman or other senior executive should be made as an introduction to the self-contained, comprehensive Communication on Progress.
- Description of practical actions taken and process of implementation used.
  - Participants should provide, under each Global Compact principle or category of principles, a full description of actions taken and processes used to integrate the principles into the company’s operations.
- Measurement of outcomes or expected outcomes. Participants should include performance indicators in their Communication on Progress, to substantiate practical actions taken and process used to implement the Global Compact principles. Participants should also provide a cross-reference between Global Compact principles and these performance indicators.
  - If the information provided in the Communication on Progress has been assured, it is suggested that the company also provides details on how this was accomplished.

Where should a “Communication on Progress” be published?

- Step 1. If you maintain a company website, you should publish your Communication on Progress on your website. If not, go to Step 2.
- Step 2. If you do not maintain a company website, you should issue your Communication on Progress through other stakeholder communication channels. In addition, an electronic copy of the Communication on Progress should be posted on the Global Compact website, with a description of other means used to communicate progress.
## Template for Links to Communication on Progress on the UNGC Website

This template shows the information you will be asked to provide when submitting a link to your Communication on Progress to the Global Compact website:

<table>
<thead>
<tr>
<th><strong>Company name:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Title of the submission (70 characters limit)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Please insert the name of the document used to communicate progress and the period covered (e.g. Sustainability Report 2003).</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
</tr>
</tbody>
</table>

1. **What actions has your company taken to communicate with stakeholders on its progress in implementing the Global Compact inside its business?** (2500 characters limit) Please describe the format used to communicate progress (e.g. annual report, sustainability report; website; company bulletins etc); the nature of those communications; the main corporate citizenship issues tackled in the report and their relation with Global Compact principles (please provide the most relevant page numbers in the report). Please provide information on any indicators used in communicating with stakeholders on sustainability issues (e.g. GRI), as well as external verification process.

2. **What was the outcome/result of efforts to communicate progress? What response have you received from your efforts to communicate progress? What are your plans for future communications on progress to stakeholders?** (2500 characters limit)

<table>
<thead>
<tr>
<th><strong>Country(ies) covered in the communication on progress (global is also an option):</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Five search words (keywords) describing the submission:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Contact information of company representative:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong></td>
</tr>
<tr>
<td><strong>Email:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Direct URL links to the company communication on progress (e.g. annual report/CSR report, or other communication):</strong></th>
</tr>
</thead>
</table>
Appendix 4 – References and Further Reading


Reed, D.J. (2001) *Stalking the Elusive Business Case for Corporate Sustainability* Washington: Sustainable Enterprise Perspectives World Resources Institute


Websites

Useful UNEP sites (introduced by www.unep.fr from 2006 onwards)

On corporate environmental and social responsibility:
http://www.unep.fr/outreach/home.htm

On sustainable production and consumption:
www.uneptie.org/pc/cp/library/catalogue/cp_training.htm
www.uneptie.org/pc/sustain/icinitiative/training.htm
www.uneptie.org/pc/tools/ems.htm
www.uneptie.org/pc/tools/supplychain.htm

On state of the global / regional environment, climate and biodiversity data:
http://www.unep.org/dewa/index.asp
http://www.grida.no/
http://www.unep-wcmc.org/

On collaborating centres, convention secretariats, regional offices:
http://www.unep.org/

Various business and sustainability, other relevant sites
AccountAbility www.accountability.org.uk
Amnesty International www.amnesty.org
Business for Social Responsibility www.bsr.org
Business in the Community http://www.bitc.org.uk/environment/index.html
Canadian Centre for Philanthropy and the Conference Board of Canada www.imagine.ca
Chronos E-learning Tutorial www.sdchronos.org
Confederation of Norwegian Business and Industry www.nho.no/csr
Corporate Social Responsibility Europe www.csreurope.org
Danish Institute for Human Rights www.humanrights.dk / www.humanrightsbusiness.org
Ethical Trading Initiative www.ethicaltrade.org
Ethos Institute www.ethos.com.br
European Foundation of Quality Management www.efqm.org
Fair Labour Association www.fairlabor.org
Global Environmental Management Initiative http://www.gemi.org/index.htm
Global Reporting Initiative website: www.globalreporting.org
International Alert www.international-alert.org
International Chamber of Commerce www.iccwbo.org
International Federation of Consulting Engineers www.fidic.org
International Finance Corporation www.ifc.org
International Labour Office www.iло.org
International Organization of Employers www.ioe-emp.org
International Standards Organization www.iso.org
Natural Step website: www.naturalstep.org/
Office of the High Commissioner for Human Rights www.unhchr.org
Organization for Economic Cooperation and Development www.oecd.org
Respect Europe www.respecttable.com
SIGMA www.sigmaproject.com / www.forumforthefuture.org.uk
Social Accountability International www.sa-intl.org
SustainAbility International www.sustainability.com
The Natural Step www.naturalstep.org
The Prince of Wales International Business Leaders Forum www.iblf.org
Transparency International www.transparency.org
United Nations Development Programme www.undp.org
United Nations Conference on Trade and Development www.unctad.org
United Nations Environment Programme www.uneptie.org
United Nations Department of Economic and Social Affairs, Division for Sustainable Development www.un.org/esa/sustdev/
United Nations Global Compact Office www.unglobalcompact.org
United Nations Industrial Development Organization www.unido.org
World Bank www.worldbank.org/privatesector/csr
World Business Council for Sustainable Development www.wbcsd.ch
World Resources Institute www.wri.org
Worldwide Fund for Nature www.wwf-uk.org
Wuppertal Institute for Climate, Environment and Energy www.wupperinst.org

Specific environmental tools and initiatives

Note: the following sites are in addition to the numerous websites provided throughout the Manual.

Contains a virtual library of pollution prevention information from Canada

Clean Technologies in U.S. Industries – www.usaep.org/resources/reports/rep_cleantech_text.html
A brief overview of the U.S. textile industry, with an emphasis on pollution prevention

Cleaner Textile Production Idea Catalogue – www.nu.ac.za/cleanerproduction
A number of options for Cleaner Production in textile wet processing (with illustrations) prepared by DANCED

A tailor-made programme for the environmental certification of small and medium sized enterprises and public administration, an innovative example from Norway.

Environmental Navigator for SMEs – www.em-navigator.net
Capacity building package on environmental tools aimed at small and medium sized enterprises

Enviro$en$s (Envirosense) Cooperatives – http://es.epa.gov/cooperative/
Provides access to Pollution Prevention and Cleaner Production resources found on the Internet

Enviropolating – www.enviropolating.co.za
Information on metal finishing opportunities, with an emphasis on the South African experience
European Environmental Agency – http://ew-news.eea.eu.int/Industry/Cleaner
Background information on CP and voluntary initiatives

A non-profit organization of North American companies dedicated to fostering environmental, health and safety excellence worldwide through the sharing of tools and information in order for business to help business achieve environmental excellence. Tools developed by GEMI include the Sustainable Development Planner, Business and Climate, Water Sustainability, Forging New Links Supply Chain and HSE Web Depot.

Greenprofit – www.greenprofit.net
GreenProfit features practical information on hundreds of pollution prevention measures and many examples of their application in industry and other sectors, as well as a comprehensive links page

International CP Co-operative – http://es.epa.gov/cooperative/topics/casestudies.html
The International CP Co-operative contains links to numerous case studies, with a predominant focus on business case studies based in the US


National Pollution Prevention Roundtable – www.p2.org/
The home-page of the National Pollution Prevention Roundtable in the US

Pollution Prevention Resource Exchange – www.p2rx.org
National network of regional cleaner production centres in the United States, providing pollution prevention information and networking opportunities to States, local governments and technical assistance providers.

An introduction to CSR for small and medium sized enterprises, developed in the UK

The International Cleaner Production Information Clearing-house is a collection of CP databases with examples of technical and policy applications, abstracts of available publications, lists of expert contact institutions etc

Information on environmental risk assessment issues

Info on the WRRC, and particularly useful P2 information on all kinds of (industrial) sectors

World Bank Pollution Prevention and Abatement Handbook
Appendix 5 – Evaluation Forms

The following evaluation forms have been included in each Delegates’ Manual. The first form should be completed by the delegates at the end of each day, while the second form should be completed at the end of the entire course.

**END OF DAY EVALUATION FORM**

Name: 

Date: 

Company: 

Module: 

*The most useful thing I learned today was:* 

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

*The least useful aspect of the day was:* 

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
What I most want to learn more about is:


Other comments:


END OF COURSE EVALUATION FORM

This course evaluation will help us develop a more effective course for future delegates. In Part 1, please give us your overall views on the course. In Part 2, please comment on and rate the elements of the course on a scale of 1 to 4. Additional comment may be given on the reverse side of the page.

PART 1:

I think the most useful parts of the course were:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

I think the least useful parts of the course were:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

I will have difficulty applying:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

My overall feelings about the course are:

<table>
<thead>
<tr>
<th>Waste of time</th>
<th>Limited value</th>
<th>Mixed feelings</th>
<th>Helpful / Learnt a lot</th>
<th>Extremely valuable</th>
</tr>
</thead>
</table>
### PART 2:

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparatory work</td>
<td></td>
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<tr>
<td>Talks/lectures</td>
<td></td>
<td></td>
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<tr>
<td>Exercises</td>
<td></td>
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</tr>
<tr>
<td>Handouts</td>
<td></td>
<td></td>
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<tr>
<td>Trainer</td>
<td></td>
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<tr>
<td>Organisation</td>
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</tr>
<tr>
<td>Venue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall benefit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
"How can your company take on new risks and opportunities in a responsible manner? How do you apply precaution? How do you promote environmentally sound technologies? These questions are relevant to companies of different sizes in all regions. This package provides practical guidance and an overview of new trends in addressing these. Trainers and practitioners alike are invited to join us with fellow UN agencies such as UNDP, UNIDO and others in rolling out this training programme in a growing number of countries and languages."

Monique Barbut,
Director, UNEP Division of Technology, Industry and Economics

"I welcome this Global Compact Environment Principles Training Package as an excellent contribution in responding to the ongoing demand for practical guidance and capacity building. I encourage training institutions, business organisations and fellow UN agencies to make full use of it."

Georg Kell,
Head, United Nations Global Compact Office

"The World Business Council for Sustainable Development (WBCSD) has been closely involved in the development of the Global Compact Performance Model during the past three years. I welcome the introduction to the model and the practical business case approach found in this training package. I am sure it will be of tremendous value to business communities everywhere, in particular new market leaders from Asia, Africa, Latin America and the Middle East."

Odd Gullberg,
Chief Operating Officer, WBCSD