



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 27.3.2001  
SEC(2001) 517

**COMMISSION STAFF WORKING PAPER**

**Consultation paper for the preparation of a European Union strategy for Sustainable  
Development**

# **Consultation paper for the preparation of a European Union strategy for Sustainable Development**

## **Foreword**

The Helsinki European Council in December 1999 invited the European Commission to “prepare a proposal for a long-term strategy dovetailing policies for economically, socially and ecologically sustainable development” for the Gothenburg European Council in June 2001.

This consultation paper is designed to provide the analytical underpinnings for this strategy. It sets out the Commission services’ initial views on the challenges and opportunities of sustainable development. It identifies some important trends that pose a threat to sustainable development in the EU, and presents a policy toolkit for tackling these problems. This consultation paper does not include specific objectives and measures. These will be contained in the Commission’s proposal for a sustainable development strategy to the Gothenburg European Council.

Accordingly, this paper aims to generate discussion and encourage input from other EU institutions and civil society. The Commission services propose to structure the debate around the 10 questions in the box on the next page. All stakeholders are therefore invited to express their views on these issues and to consider what more concrete measures should be included in the EU sustainable development strategy for Gothenburg.

Observations on the questions and other issues raised in the document may be submitted electronically at the web site address:

[http://www.europa.eu.int/comm/secretariat\\_general/index\\_en.htm](http://www.europa.eu.int/comm/secretariat_general/index_en.htm)

Written comments may also be sent to:  
Sustainable Development Task Force,  
European Commission,  
Brey 10/217  
Rue de la Loi 200  
B-1049 Brussels,  
Belgium.

The deadline for submissions is the 30th April 2001.

## **Questions**

1. Does focussing on a limited number of the most pressing problems help to make the concept of Sustainable Development operational? Do the six themes chosen embody the main long-term challenges confronting European society?
2. This document focuses on Sustainable Development problems in Europe. Are there any cases in which actions to place European society on a more sustainable path might make the attainment of Sustainable Development at a global level more difficult? How can reforms of EU policies support efforts to achieve Sustainable Development worldwide?
3. Since Sustainable Development is a long-term idea, it should be of clear relevance to accession countries. To what extent are the challenges they face different from those in the current Member States?
4. Do you share the analysis of the causes of these problems and their potential remedies identified here? Do you have any additions to the policy toolkit?
5. What practical measures can be taken to better translate the principle of “policy integration” into concrete action to achieve greater sectoral policy consistency?
6. Governments cannot deliver Sustainable Development on their own. Business, workers, and civil society have an indispensable role to play. How do we make this happen?
7. How can we ensure that the costs of adjusting to Sustainable Development are minimised, and the opportunities seized?
8. In what areas of Sustainable Development do you see a clear policy role for the European Union?
9. What are the most urgent steps the European Union should take in the framework of an EU Sustainable Development strategy?
10. What specific objectives would you like to see included in the EU strategy for Gothenburg? What arrangements should be foreseen to ensure their implementation?

## EXECUTIVE SUMMARY

At the Helsinki summit in 1999 the Heads of State and Government asked the European Commission to propose a European Sustainable Development strategy for the Gothenburg European Council in June of this year.

The Consultative Document is the first step in developing the strategy. It does not include specific objectives and measures, but sets out the challenges and opportunities of sustainable development. It is meant to trigger a wide debate with other European institutions, Member States and civil society. Following this debate, the Commission will propose a sustainable development strategy to the Gothenburg European Council, containing objectives, measures and timetables.

### *Sustainable development presents several urgent challenges to the Community . . .*

The average citizen of the European union has never been better off in material terms. Average incomes are now around five times what they were in 1900. Many inequalities have been reduced through more widespread access to education and the development of systems of welfare provision. Life expectancy has increased sharply due to better hygiene, nutrition and medical care. Growing economic interdependence resulting from the single market, globalisation, and new communication technologies provide a strong spur to efficiency and continued improvements in well-being. But these positive developments should not blind us to a number of potential threats. Some do not have the means to share in these new economic opportunities, and risk being left behind. There is also a growing awareness that we are putting increased pressure on the carrying capacity of our planet.

### *. . . but with the right policies, it also offers many opportunities.*

If policy-makers create the right conditions, and encourage citizens and businesses to integrate environmental and social considerations in all their activities, policies for sustainable development will create many “win-win-win” situations, good for the economy, employment, and the environment. Although these are clearly beneficial for society as a whole, some policy changes may create winners and losers. In such cases we must make sure that those who have to adapt to changes in policy are treated fairly and do not suffer unnecessary costs.

Technological progress has enormously increased our material wealth and improved our quality of life. Moreover, technology can help us ease potential trade-offs between competing ends. It can also offer a way to decouple economic growth from environmental degradation through more efficient use of resources, and by changes in production techniques and the way services are delivered. Policy should therefore strive to provide a framework to **influence innovation** and **encourage its take-up** so that solutions that prevail in the market are “winners” for sustainable development.

### *Focussing on a small number of the most pressing problems . . .*

The most widely quoted definition of sustainable development is that in the Brundtland report, which describes sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. This definition is very broad, and can be interpreted to cover almost any issue with an important economic, social or environmental component. To make the concept operational and a **catalyst for change**, it is necessary to focus on the **biggest challenges to sustainability** in the Union and the accession countries. Based on the criteria of severity, their long term nature, and their European dimension, these challenges include:

- **Climate change** and its possibly dire effects, including more violent weather patterns, like storms and floods, but also prolonged drought, and rising sea levels.
- **Potential threats to public health**, stemming from persistent toxic substances, resistance to antibiotics, or food safety risks. At the same time, good quality health services affordable to all citizens are coming under strain.
- **Increasing pressure on some vital natural resources**, such as biodiversity, fish stocks and fresh water. Individuals often face little incentive to conserve and use natural resources responsibly; in recent years volumes of waste have grown faster than GDP.
- **Poverty and social exclusion**. About 7% of Europe’s population is persistently poor, and poverty has a strong tendency to be passed from one generation to another. Changes in the labour market, in skill requirements and in family patterns pose risks to vulnerable groups, with many problems concentrated in run-down city areas.
- The implications of an **ageing population**, with a shrinking labour force having to cope with higher costs of pensions and health care.
- The **congestion and pollution** from current patterns of mobility as well as urban and rural problems often arising from past spatial planning decisions. **Enlargement** will pose unprecedented challenges of reducing **the gap between rich and poor regions**.

The huge cost of doing nothing about these challenges will show up in the longer term. This must not lead to the impression, however, that there is plenty of time to act. Many of today’s unsustainable trends are rooted in past choices regarding production, technology, infrastructure and land use. Some of these problems may be very costly or impossible to put right if action is left to a very late stage. **Decisive action is urgently needed.**

### *. . . allows us to understand why things have gone wrong . . .*

Many of these problems have common roots.

Firms and citizens often face incentives which lead them to produce and consume in an unsustainable way. They may be ill informed about the wider effects of their actions, or about alternatives. Institutional obstacles, such as sectoral policy inconsistency and short termism make it difficult to respond effectively to these failings.

The most acute threats to sustainable development typically straddle several sectoral policy areas. Tackling challenges to public health and healthcare may need action in industry, agriculture and fiscal policy, for example. Social policy alone will not solve problems of

poverty and social exclusion. When policies are determined sector-by-sector without taking account of spillovers on other areas, serious **sectoral policy inconsistency** is inevitable.

Several of the challenges to sustainable development – such as climate change, or the ageing of the population – are long-term, with problems building up gradually. Policy responses often take the form of “**quick fixes**” especially when the costs of tackling the problem are up-front and highly visible while the benefits are hard to quantify and spread over many years.

There is also a widespread perception among the public that policy is too often made in the interests of the few rather than the many, and has become very distant from the real concerns of the population. This undermines confidence in policy making, and even in the objectivity of scientific advice that is meant to inform policy.

*... and helps to identify what we must do to put things right.*

Sustainable development must be placed at the core of the mandate of all policy makers. **Better policy integration**, relying on a systematic and **transparent review of the costs and effects** of different options, is crucial, so that different policies reinforce each other, trade-offs are made by informed decisions, and environmental and social objectives are met at least economic cost. Openness will also facilitate better dialogue between stakeholders with divergent interests, paving the way for a broad consensus on solutions and their implementation.

Policy should focus on **steady long-term management** and ambitious, verifiable objectives, which allow business and individuals to plan better and adjust gradually, thereby greatly reducing the costs of change. To assess progress toward these objectives, they need to be supplemented by a set of accurate indicators, for what is not measured proves hard to manage.

However, better co-ordination, dialogue and long-term targets in themselves will not be enough. What ultimately matters is the content of policy.

Sustainable Development calls for **sweeping economic reform to create new markets and “get prices right”**, for example, by ensuring that prices paid for goods and services include the costs of damage caused by pollution. In this way, markets will stimulate companies and consumers to take better account of the effects of their behaviour on others.

A clear understanding of the state of knowledge and its limits is necessary for **renewed confidence in science** as an input for policy, and for responsible management of emerging risks. Science and technology policy should also support independent scientific evaluations of the advantages and potential dangers of new products and techniques, and fund research that is too risky or costly for the private sector.

Finally, as the success of any sustainable development strategy depends critically on changes in people’s behaviour, governments must do more to **educate and inform** businesses and citizens so that they become more conscious of the costs their current behaviour imposes on others, and are aware of alternatives.

*Everybody must be involved in achieving Sustainable Development . . .*

At Gothenburg, the EU should set out a sustainable development strategy that will enable an effective response to pressing long-term problems that are of real concern to its citizens. This way, sustainable development will help to bridge the gap between Europe and ordinary Europeans. Putting our society on a more sustainable path calls for action at all levels of society and government. European, national, regional and local policy makers can create the right conditions, but sustainable development depends on the daily consumption, production, employment and transport decisions of millions of people. Actions by business and citizens are therefore critical.

*. . . at the level of the Community . . .*

Our growing institutional, economic and social interdependence require us to work together to meet these challenges. In a number of economic sectors, **moves towards sustainable development can only be achieved by action at the EU level**. Clear examples arise where the Community has exclusive competence because of internal market regulations, or where integrated European markets mean that uncoordinated action by Member States is likely to be ineffective. Enlargement will make this all the more important. Our common future demands a common European approach.

*. . . and for the World.*

Ultimately, though, sustainable development is a global concept. Pursuing sustainable development in Europe is therefore not enough. The EU also has to support efforts by other parts of the world to put their societies on more sustainable paths, and play its full role in international organisations with an important contribution to make towards sustainable development, such as the UN, the IMF, the World Bank and the WTO. At the Rio+5 conference in 1997, the European Union and other signatories of the Rio declaration committed themselves to drawing up strategies for sustainable development in time for next year's Rio+10 summit in South Africa. To achieve real progress at this summit, Europe needs to demonstrate that it is putting its own house in order and **provide international leadership**.

## 1. INTRODUCTION

### 1.1 Why a Sustainable Development Strategy for the European Union?

During the course of the 20<sup>th</sup> century the countries of the European Union have become enormously richer in material terms. Average incomes are now around five times what they were in 1900. Many inequalities have been reduced through more widespread access to education and the development of systems of welfare provision. Life expectancy has increased sharply due to better hygiene, nutrition and medical care. In most respects therefore, our standards of living now are higher than they have ever been.

Growing economic interdependence resulting from the single market, globalisation, and new communication technologies provide a strong spur to efficiency and increased productivity, and offer new opportunities at all levels. But these positive developments should not blind us to a number of potential threats. Indeed, not everyone is equipped to take advantage of these new opportunities. There is a real risk that some will fall behind and be unable to catch up. There is also a growing awareness that we are putting increased pressure on the carrying capacity of our planet. A number of worrying long-term trends have emerged:

#### **Main challenges for sustainability**

Severe weather events may become more frequent if we do not act to avert climate change. Rising sea levels threaten the very existence of some small island states, and we should not forget that a large part of the European population lives at or below sea level.

Recurrent, persistent, poorly understood threats to food safety, rampant antibiotic-resistant strains of bacteria, the unexplained emergence of toxic algal blooms: these are all warning signs that we are interfering with our environment in unforeseen ways. Unresolved, these and other menaces to animal and human health threaten our very survival.

One in every six Europeans – more than the population of all but the largest Member States – lives in poverty. Income disparities are widening in some Member States. Our social systems are failing to deliver on a large scale, and are ill-equipped to deal with the ageing of the population.

We are failing to secure the long run viability of our natural environment. Recent decades have seen very significant losses in bio-diversity. A high percentage of existing species is at risk of extinction. Fish stocks in European waters are close to collapse.

In major cities, transport congestion has been rising rapidly and is approaching gridlock. This has major social, economic and environmental costs which fall largely, though not exclusively, on the three-quarters of the European population who live in urban areas. Enlargement will intensify the challenge of achieving economic and social cohesion.

### *The Community's responsibility*

The EU Member States share a significant number of common values and aspirations, together with a similar sense of what constitutes progress and how our societies should develop over the next generation. The aim of a European sustainable development strategy should be to give substance to this vision, and to map out what needs to change if we are to make this vision a reality. Moreover, the growing institutional, economic and social interdependence of our countries requires us to work together to meet these challenges. In a number of economic sectors, moves towards sustainable development can only be achieved by action at the EU level. Clear examples arise where the Community has exclusive competence because of internal market regulations, or where integrated European markets mean that uncoordinated action by Member States is likely to be ineffective.

However, achieving sustainable development will also require action at national, regional and local level, as well as from business and citizens. For this reason, in identifying and analysing the main challenges to sustainability facing the European Union, the Commission services have not confined themselves to subjects for which the EU institutions have an exclusive or shared responsibility. Moreover, the EU strategy should look beyond the present borders of the Union to be relevant for all the countries that will join the Union in the coming years. Economic and social disparities will be wider in an enlarged Union, and many of the problems identified in this paper are faced to a greater or lesser extent by the future Member States. Our common future demands a common European approach.

### *Leading by example – the international dimension*

EU policies in areas such as international trade, foreign direct investment, development co-operation and immigration influence prospects for sustainability far beyond the borders of the Union. This is very obviously the case for issues such as global poverty or climate change, where the EU and Member States are only part of a much wider picture. Furthermore, as a number of developing countries industrialise and approach European levels of economic development there will be a gradual increase in global environmental pressures. Sustainable Development is therefore a global objective that the EU cannot achieve by itself.

Tackling these problems will require a coherent international approach by international organisations. However, to provide credible and effective leadership in this global context the EU has to show it can make progress at home towards sustainable development, as well as meet its international commitments. This paper therefore focuses squarely on policy reforms needed within Europe to enhance sustainable development. It will nevertheless be important to consider whether any of the measures that we might take in Europe to move towards sustainable development might put at risk the prospects for sustainable development in the rest of the world.

The role of the EU in helping to achieve sustainable development on a global scale will be dealt with much more comprehensively by our preparations for the Rio + 10 Summit in South Africa in 2002. This work has already started, as described in a recent Commission Communication “Ten years after Rio: Preparing for the World Summit on Sustainable Development in 2002”<sup>1</sup>. The EU also has an important role to play in international organisations, such as the World Trade Organisation and the upcoming UN Conference on Least Developed Countries. Our influence in this wider context will be all the greater if we

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<sup>1</sup> COM(2001)53; European Commission, 2001

can demonstrate that we are putting our own house in order and thereby improving prospects for global sustainability.

## **1.2 The Political Context of this Communication**

Sustainable development was put on the global political map by the 1992 United Nations Earth Summit in Rio de Janeiro, following the report of the World Commission on Environment and Development (the “Brundtland report”) in 1987<sup>2</sup>. At the Rio + 5 follow up conference in 1997 the EU and other signatories of the Rio Declaration committed themselves to drawing up sustainable development strategies for the Rio + 10 World Summit on sustainable development in South Africa next year.

The Amsterdam Treaty, which came into effect in 1999, makes sustainable development one of the core tasks of the European Community. Article 2 of the EC Treaty states that “The Union shall set itself the following objectives . . . to promote economic and social progress and a high level of employment and to achieve balanced and sustainable development, in particular through . . . the strengthening of economic and social cohesion”.

Against this background the Heads of State and Government asked the European Commission at Helsinki in 1999 to draw up a European sustainable development strategy and submit it to the European Council at Gothenburg in June 2001.

This consultation paper is the first step in this process. It sets out the analytical basis for the EU sustainable development strategy. It gives the Commission services’ initial views on sustainable development, and the challenges and opportunities it presents. More specifically, it identifies some persistent trends that pose a threat to sustainable development in Europe, and analyses the causes of these problems. Finally, it presents a policy toolkit to put Europe on a more sustainable path.

Comments on this paper are invited from all stakeholders as the Commission finalises its proposals for the Gothenburg European Council.

## **1.3 Interpreting Sustainable Development**

The most widely quoted definition of sustainable development is that in the Brundtland report. It defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. In essence, ensuring a better quality of life now and for future generations.

There are many alternative interpretations of sustainable development, and even with the definition above it is clear that different views are possible on what is meant by the term “needs”. Nevertheless, there is a broad consensus that, at a minimum, sustainable development captures two important ideas:

- That development has an economic, a social and an environmental dimension. Development will only be sustainable if a balance is struck between the different factors that contribute to the overall quality of life.

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<sup>2</sup> Our Common Future; World Commission on Environment and Development; 1987.

- That the current generation has an obligation to future generations to leave sufficient stocks of social, environmental and economic resources for them to enjoy levels of well being at least as high as our own.

Because of its origins in the environmental movement sustainable development used to be dismissed as a “luxury” that should not be bought at the expense of economic growth. But sustainable development is much more than a purely environmental concept - it poses the fundamental challenge of combining a dynamic economy with a society offering opportunities to all, while improving resource productivity and decoupling growth from environmental degradation.

Although sustainable development has a very wide scope it should not be seen simply as a convenient way to bundle loosely together a collection of social, economic and environmental problems under a new label. Instead, a comprehensive perspective is needed that ensures that policies – both sectoral and horizontal – are mutually supportive rather than working against one another. Achieving this in practice will oblige policy makers to ensure that economic growth is not bought at the expense of a social divide and environmental deterioration, that social policy underpins rather than undermines economic performance, and that environmental policy is based on sound science and is cost-effective.

#### **1.4 The Opportunities of Sustainable Development**

While sustainable development will require changes to individual business and consumer behaviour to avoid some negative consequences for society as a whole – present or future – it also offers great opportunities. Indeed, many of the more far-sighted businesses have already realised that sustainable development offers new possibilities and have begun to adapt their operations and investment plans accordingly.

It is now increasingly recognised that stringent environmental policy need not put a brake on economic growth even as conventionally measured<sup>3</sup>. While environmental regulation can impose a one-off cost in terms of economic output, these costs are at least partly offset by a boost to employment and revenues in eco-industries providing cleaner technologies and services. Moreover, the evidence shows that the long run growth rate depends largely on the rate of technological progress. Policies for sustainable development could increase economic growth by boosting our rate of innovation, and may eventually lead to goods that are cheaper to buy and use than their "dirty" predecessors.

In addition, many of the more concrete policies needed for sustainable development are likely to have a positive impact on economic growth. For example:

- Policy making in the last quarter century has tended to underexploit the potential of the labour market and overexploit natural resources. The inefficiencies in present tax systems means that there is scope to price labour back into the market and pollution out of it.
- Removing unnecessary or harmful subsidies will bring direct financial benefits to tax payers and improve the efficiency of the economy. Market reform to get prices right

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<sup>3</sup> Current statistical measures of economic performance, such as Gross Domestic Product (GDP), are valuable indicators, but are limited in many ways. For example, GDP does not take into account the costs of pollution or put a value on unpaid work.

will create new business opportunities to develop services and products that ease pressure on the environment, and that fulfil social and economic needs.

- Policies to reduce poverty and extend opportunity to all can help avoid the waste of resources and individual talent that are implied by social exclusion and unemployment, while lowering the costs of social support.
- Better pricing and new technologies can break the trend of increasing congestion on our roads by encouraging greater use of other modes of transport and more efficient use of infrastructure. This will prevent gridlock and save time and other costs for business and the general public.
- Enhancing economic and social cohesion by helping lagging regions to exploit their full productive potential should benefit the Community as a whole.
- Encouraging the research, development, and innovative use of new, cleaner and more efficient energy technologies will not only have a positive impact on the environment and possibly employment, but also on the security of European energy supply.

#### *Creating the opportunities*

These examples show that there are many “win-win” situations. A sustainable development strategy should seek to identify and exploit these opportunities, fostering economic efficiency, employment growth and environmental friendliness. The EU has an industry with a rich potential in the application of efficient and environment-friendly technologies. This is one of Europe's most promising assets. To exploit this potential, policy must provide Europe's industry with a better framework for innovation and technological development.

More generally, policy makers should create the conditions in which citizens and businesses are encouraged to integrate environmental and social considerations in all their activities. Although this will be beneficial for society as a whole, some policy changes create clear winners and losers. In such cases we need to ensure that we pursue policies that are in the general public interest, while making sure that those who have to adapt to changes in policy are treated fairly and do not suffer unnecessary costs. Sustainable development therefore has an important institutional dimension. It cannot be achieved without good governance and active public participation<sup>4</sup>.

### **1.5 Ensuring added value**

The EU sustainable development strategy will need to build on the foundations of several processes rooted in Treaty provisions which already guide European economic, social and environmental policy-making.

The Broad Economic Policy Guidelines, and the economic reform process initiated at the Cardiff summit in 1998, provide a solid framework for economic policy co-ordination. Employment and social policy co-ordination has given rise to guidelines for employment and labour market reform and to co-operation between Member States in modernising social protection and promoting social inclusion. Environmental policy has its own process for the integration of environmental concerns into other sectoral policies (the Cardiff process), while

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<sup>4</sup> These issues will be dealt with in much more detail in the Commission's forthcoming White Paper on Governance.

at the beginning of this year, the Commission proposed the 6th Environmental Action Programme setting out a 10-year perspective for EU environmental policy.

At Lisbon in March 2000 the Heads of Government and State decided to bring various social and economic initiatives together in a single annual review, geared towards making Europe “*the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion*”. As there is some obvious overlap between the scope of the Lisbon review process and the sustainable development strategy, the Commission has proposed in its report to the Stockholm European Council to complete the Lisbon process by integrating an environmental dimension, and suggested that to ensure consistency between the two the mechanisms to review progress should be dovetailed.

In order not to duplicate the work contained in other policy reviews the EU sustainable development strategy should focus on a small number of themes where a cross-cutting approach provides new insights by taking into account the spillovers between decisions in different sectoral policies. The sustainable development strategy can also add value to existing initiatives by putting stronger emphasis on the long term. As the following sections of this document show, many of the trends that threaten sustainable development are the consequence of past choices in production technology, patterns of land use and infrastructure investment, and are difficult to tackle in a short time frame. The decisions we take in the near future will also have long term effects over many decades on our patterns of development – and their social, economic and environmental consequences. It is therefore important that we address our current problems as a matter of urgency.

## 2. MAIN SUSTAINABILITY CHALLENGES FOR EUROPE

### 2.1 Focussing on the most important issues

By its very nature, sustainable development is an inclusive approach to policy making. Its scope covers almost any issue with an important social, economic or environmental component. This very wide perspective has both advantages and disadvantages - there is a trade-off between breadth of coverage and depth of analysis. The Commission services have deliberately limited the scope of this consultation paper to a small number of issues that in their view pose the greatest threat to sustainable development.

Choosing a set of topics to include implies making judgements. The criteria that we have used to judge whether a topic should be covered in the EU sustainable development strategy are:

- Severity - Do current trends pose a significant threat to our quality of life or threaten to significantly reduce our stocks of social, environmental and economic assets? Are the costs of doing nothing likely to be high or unevenly distributed?
- The time dimension and irreversibility - Is there a "slow burn" problem that worsens only gradually but that may be very costly or impossible to put right if action is left to a very late stage? Is there a significant inter-generational aspect?
- A European dimension - Is the problem identified common to a number of EU countries, or are there spillover effects between countries? Are policy responses likely to have implications going beyond national boundaries?

Based on these criteria the Commission services propose the following six topics as priorities for inclusion in the European sustainable development strategy:

- Climate change and clean energy
- Public health
- Management of natural resources
- Poverty and social exclusion
- Ageing and demography
- Mobility, land use and territorial development.

Clearly, each of these topics covers a very wide range of issues and we cannot hope to provide a comprehensive picture here. Moreover, within each broad heading there are some problems and policy dilemmas that are much more acute than others. Within each topic we have therefore again narrowed our focus by applying the criteria above, in order to identify those trends that pose the most serious threat to sustainable development:

- **Climate change** is a global problem which can only be solved by widespread international co-operation. While its impacts are difficult to predict precisely, they could include changes in agricultural patterns, land use, disease zones, water supplies, increased risk of natural disasters and flooding, and resulting labour migration. These would have enormous economic and social consequences.

Decoupling economic activity from emissions of greenhouse gases – notably carbon dioxide – requires a major shift to **clean energy** use, which will not be achieved quickly or easily.

- Severe threats to **public health** are posed by the growth in antibiotic-resistant strains of some diseases, which reduce the effectiveness of existing treatments. We also do not yet know enough about the longer-term effects of the thousands of chemicals currently in use. Health problems related to sedentary lifestyles or poor eating habits are often passed from parents to their children. All Member States face the challenge of delivering high standards of health care without excessively burdening public finances.
- Our **management and use of natural resources** has implications for the well-being of future generations. Loss of bio-diversity and the resultant reduction in genetic resources are irreversible. Restoring fish stocks to sustainable levels will not be achieved unless the severity of the problem is recognised and traditional management attitudes change. The volume of waste – some of it hazardous – is rising inexorably.
- **Poverty** and **social exclusion** are problems common to all Member States. The severity of the issue can be judged from the fact that one European in six is poor (with much higher concentrations in some groups such as one-parent families), and poor health, low educational attainment and deprivation tend to be passed from one generation to the next. Moreover, rapid changes in technology raise the threat of a “digital divide” and a two-tier society.
- All European countries face similar challenges due to the **ageing** of their populations. This will place considerable stresses on the funding of pensions. Ageing populations may also place higher demands on health care services and on long-term care, though much will depend on whether people enjoy relatively good health in old age. The structure of the population alters very slowly over time: those who will be pensioners at the start of the second half of this century have already been born, as has a substantial part of the future population of working age.
- Current patterns of **mobility** cause severe pollution and congestion throughout Europe. Emissions of greenhouse gases from transport are growing more rapidly than from any other source, and in many urban areas traffic seems to be grinding gradually to a halt. Transport infrastructure is one of several factors influencing **territorial development** and **land use**. In turn, concentration of economic activities can give rise to congestion, but also has economic benefits such as the creation of business networks and fluid labour markets, and can allow new solutions to emerge such as the provision of urban public transport systems.

Each of the topics touches to a greater or lesser extent on each of the economic, environmental and social dimensions of sustainable development. Each topic is relevant for a number of existing Community and national policy areas. Moreover, each is linked to some of the others. For example:

- Addressing climate change should have beneficial impacts on natural resource use, on mobility and land use, and on public health.
- Poverty can lead to poor health. Poverty is also closely related to educational underachievement.

- The degree of social exclusion is influenced by urban planning and land use policies: low-income families tend to cluster in cheap housing, often on out-lying suburban estates. In such areas investment in transport infrastructure and other facilities may not be economically viable, so uncontrolled spatial development can aggravate segregation and social disparities.
- The ageing of the population has implications for public health policies.

The following pages identify the main issues raised by each topic. The discussion of each takes roughly the same structure. First, the nature of the problem and its relevance to sustainable development are described. Then the key drivers of the issues raised are reviewed (where are we? how did we get here? and where are we going?). Emerging threats or risks are also highlighted. The examination of each topic concludes with an outline of the ways in which policy to date has tried to respond to the problems, and sets out the main policy challenges which must be overcome if we are to successfully tackle these unsustainable trends.

## Topic 1: climate change and clean energy

### Introduction

Human activity is affecting the planet's climate system. Available scientific evidence shows that the accumulation of **greenhouse gases** in the atmosphere due to human activity is causing global warming. The current central estimate is that temperature will increase by between 1 to 6° C by 2100<sup>5</sup>. Significant geographical variations are expected, and temperature extremes may be even more susceptible to change.

Climate change is likely to have severe and unpredictable consequences, such as higher mean temperatures and radical changes in weather patterns and rainfall. Higher temperatures may mean that dry regions become drier and wet regions wetter. Rapid temperature change may cause more extreme weather events (hurricanes, floods) with severe implications for infrastructure, property, social systems and nature. Changes in agricultural patterns, land use, water supplies and the migration of labour will have knock on effects on the economy and society. While some of these may be beneficial, major diseases such as malaria are likely to extend their reach as temperatures rise, with major implications for public health.

Climate change is a global problem that the EU alone cannot solve, as all countries emit greenhouse gases. In 1992 the United Nations Framework Convention on Climate Change (UNFCCC) was agreed. At present 186 nations have ratified this convention and are legally bound by it. This Convention explicitly recognises the problems posed by climate change, and sets an "ultimate objective" of stabilising "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system". However, the text does not specify precisely what this level should be – it remains a subject of scientific research and political debate.

The Kyoto Protocol to the UNFCCC, agreed in 1997, was an important additional step, committing developed countries to emission reduction and limitation targets for greenhouse gases. The EU agreed to cut emissions by 8% relative to 1990 levels by the years 2008-2012. However, the Kyoto Protocol has not yet been ratified by most signatories, and in particular none of the industrialised countries, and is therefore not yet legally binding. Moreover, the Intergovernmental Panel on Climate Change estimates that to stabilise CO<sub>2</sub> concentrations at even around twice the pre-industrial atmospheric concentration would require cuts in **global** emissions of around 50 to 70% over the next 100 years. This implies that implementing the Kyoto Protocol will only be a first step.

At present, the developed world has far higher emissions per capita than developing countries (the EU accounts for around 14% of global CO<sub>2</sub> emissions, but about 6% of world population, while the rest of the OECD has about 35% of emissions and 11% of world population). This raises important questions about how to reconcile the need to cut global emissions with economic growth and development in poorer countries. However, it also needs to be borne in mind that greenhouse gas emissions from less developed countries are expected to surpass those of industrialised countries in the next 15 years. Thus any long-term solution to climate change needs to include all nations of the world.

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<sup>5</sup> Intergovernmental Panel on Climate Change Working Group I Third Assessment Report, Summary for Policy Makers; IPCC, 2001

## Major concerns and driving forces

Global greenhouse gas emissions have increased seven-fold during the 20<sup>th</sup> century. This has largely been the result of increased use of fossil fuels for energy as economies have grown. The main facts and figures for the EU are:

- The dominant greenhouse gas produced by human activity is CO<sub>2</sub> released from consumption of fossil fuels which accounts for around 80% of emissions. The remaining 20% are due to other gases, such as methane, nitrous oxides and the fluorinated gases (HFC, PFC, SF<sub>6</sub>).
- Some greenhouse gases have bigger effects on global warming than others. In order to put different gases on a comparable basis the emissions figures for non-CO<sub>2</sub> gases are usually converted to tonnes of CO<sub>2</sub> equivalents<sup>6</sup>. The table below gives 1990 total EU-15 greenhouse gas emissions by sector on this basis as well as projected growth to 2010<sup>7</sup>.

– **Table: Projected growth of greenhouse gas emissions between 1990 and 2010**

Mt CO2 eq.	1990	Baseline 2010	growth 2010/1990
Energy Supply	1421,7	1276,6	-10,2%
Industry	757,1	686,1	-9,4%
Transport	753,1	1098,2	45,8%
Households	447,5	440,0	-1,7%
Private and public services	175,6	188,9	7,6%
Agriculture	417,0	397,6	-4,7%
Waste	166,4	137,3	-17,5%
<b>Total</b>	<b>4138,3</b>	<b>4224,8</b>	<b>2,1%</b>

Source: "Environment 2010: Our Future, Our Choice", 6th Environmental Action Programme of the European Community, COM (2001) 31 final, p. 25

- EU Member States use large amounts of energy, but they tend to use it relatively efficiently: energy use and CO<sub>2</sub> emissions per unit of GDP are low compared to most other countries. However, emissions per capita from fuel combustion in the EU are around twice the global average and about four times the average for developing countries. Due to the legacy of central planning the accession countries emit several times more CO<sub>2</sub> per unit of GDP than the current Member States.

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<sup>6</sup> The conversions are based on the global warming potential for 100 years, as agreed in the IPCC. The GWP for methane is 21, nitrous oxide 310 and for the fluorinated gases more than 1000. In other words, methane is 21 times more potent greenhouse gas than CO<sub>2</sub>.

<sup>7</sup> These figures include the projected effects of a number of recent policy measures, such as the Landfill Directive, the voluntary agreement with vehicle manufacturers to cut CO<sub>2</sub> emissions from cars, the Renewables Directive, and the liberalisation of the energy market.

- Some countries have also managed to make significant improvements in energy efficiency over time. For example, between 1985 and 1998 the GDP of the EU has grown by 35% while energy-related CO<sub>2</sub> emissions grew only by 4%. This is partly due to a move towards less energy-intensive sectors. In addition, a substantial part of this de-coupling has to do with one-off events, such as the switch from coal to gas on a large scale as a source of energy supply.

The main driving forces behind emissions in the EU to date have been:

- A high level of economic development linked to a dominance of fossil fuels in energy supply. Around 80% of our energy needs are supplied by fossil fuels. Our current heavy reliance on fossil fuels results from past investment decisions that were made without adequate attention being paid to the long run environmental impacts.
- Low energy prices: prices in real terms of oil, natural gas and coal have been relatively low throughout the 1990s and much of the 1980s. Coal prices declined by almost 50% between 1990 and 2000 in real terms. The low price of fossil fuels has reduced incentives for households, industry and the transport sector to invest in and use energy saving technologies.
- Rapidly increasing demand for mobility, being met largely by increased road transport and aviation. Between 1970 and 1998 passenger transport demand (measured in passenger kilometres) increased by over 100%, as did freight transport (measured in tonne kilometres). These trends are likely to continue. At present, emissions of greenhouse gases from transport are growing much faster than any other source.
- Emissions of non-CO<sub>2</sub> greenhouse gases such as methane from landfills and fossil fuel extraction, methane and nitrous oxide from agriculture, as well as fluorinated gases<sup>8</sup> from industrial processes.

### **Policy issues**

At the EU level the only current instrument specifically aimed to reduce CO<sub>2</sub> emissions is the voluntary agreement of European, Japanese and Korean car manufacturers to improve the average fuel efficiency of new cars by 25% by 2008/2009. However, some other measures will reduce greenhouse gas emissions. These include the Landfill Directive (which will reduce methane emissions from landfill sites), a proposed Directive that aims to encourage energy from renewable sources and a Directive on Integrated Pollution Prevention and Control.

Some policy instruments are best applied at the national level, whereas others may require international co-ordination to be effective. A number of questions arise concerning the appropriate balance between policy developed at the EU level and policy at the national level. At present the Commission is working with stakeholders in the context of the European Climate Change Programme (ECCP) in order to identify the building blocks for possible European-wide initiatives to implement the Kyoto commitment. Major issues to contend with are the following:

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<sup>8</sup> The Montreal protocol covers the phase out of ozone depleting gases that are simultaneously greenhouse gases, such as CFCs and HCFCs. Attention is shifting towards HFCs, PFCs and SF<sub>6</sub>, all three of which are covered under the Kyoto Protocol.

- Meeting the requirements of the Kyoto Protocol means achieving a reduction in greenhouse gas emissions of 8% compared to 1990 levels by 2008 to 2012. The costs of reducing greenhouse gas emissions vary from sector to sector. Critical questions therefore are what policy mix is best suited to implementing a cost-effective approach, and on which areas or sectors most attention should be focussed.
- Making the deep cuts in CO<sub>2</sub> emissions and other greenhouse gases needed to help stabilise atmospheric concentrations in the long term will require major investments. For example, in the power generation sector much of the current plant will reach the end of its operating life during the next 20-30 years and there is a continuing technological and political debate about the future contribution of various energy sources, including nuclear energy and renewables, to electricity supply<sup>9</sup>. Investments in energy supply, transport infrastructure, housing and industrial installations are long lived. It is therefore vital that consideration is given to what instruments are needed to ensure that these investment decisions take into account these long run effects.
- The costs of reducing emissions are likely to be significantly lower if cost effective instruments are put in place in good time. A first step would be removal of subsidies that encourage inefficient use of energy and are a significant drain on the public purse. An important question concerns the speed at which subsidies should be withdrawn, and how major adverse effects on particular sectors might be limited.
- Energy taxes related to the CO<sub>2</sub> content of fuels would be a cost-effective way to reduce CO<sub>2</sub> emissions. Higher taxes would increase costs in some sectors, but the revenue could be used to cut other taxes. Any disruptive effects of energy taxes on the competitiveness of energy intensive sectors could be minimised by having EU wide co-ordinated tax measures. The European Commission proposed an EU wide carbon-energy tax in 1992, as well as a Directive setting a framework for taxation of energy products in 1997. However, neither of these initiatives has been accepted by the Member States, and progress would require a significant increase in political will.
- The Kyoto Protocol includes a number of flexibility mechanisms that allow emissions reductions to be achieved in a more cost-effective way, such as emissions trading schemes. Starting from a target for total emissions, this instrument allows firms flexibility to reach this joint target in a cost-effective way. Some Member States are considering introducing emissions trading, and in this context an important issue is whether it is best to arrive at European and international emission trading schemes by linking national trading schemes, or through a more centralised design.
- The liberalisation of energy markets will improve operating efficiency in the sector and lower energy prices. However, this will increase energy demand in the absence of any offsetting measures. Consideration needs to be given to what flanking measures might be appropriate. Liberalisation has the potential to allow new suppliers to enter the market (such as renewable energy sources), provided steps are taken to ensure that they are granted fair access to the transmission grid.

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<sup>9</sup> As described in the recent green paper "Towards a European strategy for the security of energy supply" COM(2000)769

- While it is uncertain what climate change will bring, it is fairly certain that some climate change will take place. The damage that climate change causes will be lower if we can reduce the rate of change and help nature and human habitats to adapt. Efforts to reduce emissions are necessary, but it is also important to consider now how our societies can best adapt to climate change as it occurs.

## Topic 2: public health

### Introduction

A healthy population is crucial for the well-being of our societies, and is therefore a prerequisite for sustainable development. A safe environment and decent health care are basic elements of social and economic progress. How a society cares for its most fragile members is also a measure of its own health and sustainability. Good health is important for our economic and material prosperity: sick or unhealthy people can't work and are dependent on those who do.

In general terms, the health of the Community population has never been better. Infant mortality has fallen sharply. People are living longer: between 1960 and 1999 average life expectancy increased by 8 years for men and women. Nevertheless, in recent years new potential threats to health have emerged. A number of major public health issues which threaten social and economic development are set out below.

### Major concerns and driving forces

Potential threats to our health come from the substances and products we are exposed to through the air we breathe, the water we drink, and the food we eat.

- Major health problems and causes of premature mortality, such as cancers, cardiovascular diseases and road accidents, are related to **lifestyles**. Poor nutrition, lack of exercise, tobacco use and misuse of alcohol, for example, impose a considerable burden of disease and give rise to substantial costs for individuals and society. Health problems caused by lifestyles can have significant and long-lasting effects, as parents may pass bad habits on to their children. Obesity is a rapidly growing problem in many developed countries, and poor diet generally is a feature of others.
- Poor health is also related to **social and economic inequality**. Various studies have shown that relatively disadvantaged populations have lower life expectancy and higher burdens of morbidity than higher socio-economic groups. For example, in the early 1990s in England and Wales, unskilled men aged 20-64 were almost three times more likely to die from coronary heart disease than professional workers. Moreover, the difference in death rates had been widening over the preceding twenty years<sup>10</sup>.
- The emergence of bovine spongiform encephalopathy (BSE) and its transfer to humans as new variant Creutzfeldt-Jacob disease (nvCJD) have heightened concerns about **food safety** and drawn attention to the incentives facing farmers and the food industry. According to a recent Commission report<sup>11</sup>, by guaranteeing high prices over decades, agricultural policy contributed to increasing the quantity of food produced, but had negative effects on the quality of some food products. In addition, agricultural policy has paid too little attention to its effect on diet<sup>12</sup>.

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<sup>10</sup> Report of the independent inquiry into inequalities in health; UK Stationery Office, 1998

<sup>11</sup> "Agriculture, environment, rural development: facts and figures – a challenge for agriculture"; European Commission, 1999

<sup>12</sup> For example, Council regulation (EC) 1254/99 of 17 May 1999 included among its objectives "to rebalance meat consumption in the Community to the benefit of the beef sector", despite evidence

- Various types of **environmental pollution** from agriculture, industrial activity and transport also cause ill health. Indeed, some studies have suggested that **transport-related air pollution** is a bigger killer than traffic accidents<sup>13</sup>, though the impact on life expectancy is generally less than 12 months, as many of those affected are chronically ill from other causes. Importantly, emissions of “conventional” air pollutants such as sulphur dioxide, nitrogen oxides and small particles are declining due to new pollution controls, and this trend is expected to continue, significantly reducing their impact on health. Nevertheless, high levels of pollution may still occur in some areas. Agricultural runoff, wastewater discharges, and atmospheric deposition are the main sources of nutrients in the marine environment which are suspected to lie behind the unexpected appearance in several coastal waters of toxic algal blooms, an emerging threat to public health.
- **Chemicals** (especially in the form of pharmaceuticals) make an important positive contribution to public health, but there is widespread use of chemicals whose properties and risks are poorly understood. There are gaps in our knowledge about the toxicity or otherwise of the tens of thousands of chemicals in use in Europe today. While many of these are surely harmless, recent studies linking chlorine in the atmosphere in indoor swimming pools to asthma illustrate the range of our ignorance of the effects of chemical substances. The increasing incidence of allergies, which now affect one in three Europeans, has also been linked with exposure to toxic chemicals, though other factors are also important. The effects of allergies go beyond their direct impact on health: they are the major cause of days lost from school and so may lead to poor levels of educational achievement.
- The substances of most concern are those that are **persistent pollutants** – that is, they break down only slowly – and are “**bio-accumulative**” – that is, they build up in the body – so that continued exposure to even small doses can have chronic effects on health. For example, dioxins – by-products of some industrial and combustion processes – are a continuing cause for concern. Despite large and sustained falls in emissions of dioxins, a recent Commission study<sup>14</sup> indicated that many individuals’ average daily intake of dioxins was likely to exceed the World Health Organisation recommended maximum intake. Higher levels of dioxin exposure are also related to diet, since dioxins accumulate in fatty foods. Some chemical products have been identified as actual or potential causes of cancer or physical deformities. Endocrine disrupters, substances that may interfere with human and animal reproductive systems, are especially disquieting.
- **Communicable diseases**, particularly the re-emergence in a more virulent form of diseases thought to have been conquered, continue to threaten the health of the population. The recent rise in tuberculosis encapsulates the dangers. Increasing levels of **resistance to antibiotics** damage public health: infection that cannot be treated quickly spreads, and is more likely to be fatal. It is the older and less expensive drugs that are in more widespread use which tend to become ineffective as their targets develop and mutate. If we cannot master this trend we risk undoing much of the social and economic progress that has been achieved on the back of improved health

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linking higher levels of consumption to increased risks of heart disease; see also “Agenda 2000 CAP reform decisions – Impact analyses”; European Commission, 2000

<sup>13</sup> “Public-health impact of outdoor and traffic-related air pollution: a European assessment”; *The Lancet*, vol. 356, pages 795-801

<sup>14</sup> “Compilation of EU Dioxin exposure and health data, Summary Report”; October 1999

care. **Much of the problem is due to “mis- and overuse of antibiotics”<sup>15</sup> for the treatment of illness of both humans and farm animals.** The remaining four antibiotics still allowed for use as growth promoters and as additives in animal feed are planned to be phased out by 2006. The Community’s Scientific Steering Committee has also recommended changes in animal husbandry as an additional way to maintain animal health and welfare, and reduce use of antibiotics<sup>16</sup>.

- Delivering high quality **health services** is a further challenge. The **costs of health care systems are high and rising**, and now absorb an average of around 8% of GDP in Member States. Much of this money might be better spent preventing disease by encouraging healthier lifestyles. The high cost of many modern treatments, the high rate of technological innovation – which makes available treatments for previously incurable conditions – and rising demand for improved healthcare, place new pressures on the financing of public care services. The impact of the **ageing of the Community population** puts further strain on health care costs and could cause public expenditure on health care to rise by 3% of GDP.
- The most important challenges of an ageing population, however, are the need for **better understanding and management of diseases which particularly afflict the elderly, and for health services to adapt** to provide patterns of care particularly suited to meeting the needs of frail, elderly patients, while also meeting the needs of the healthy aged. These new patterns of care will require substantial change in the nature of public health care systems, particularly as extended family networks become less common.

## Policy issues

Specific Community competence in the area of public health only dates from 1993. Nevertheless, a wide range of policy areas affects health, so Community action to address health issues dates back much further than this<sup>17</sup>. For example:

- A directive on the classification, packaging and labelling of dangerous substances was adopted in 1967, and has been updated on many occasions. The Commission Communication on Endocrine Disrupters<sup>18</sup> listed some thirty Community legislative measures relating to environment and health impacts of chemical products; several of these measures were directed at improving food safety by reducing chemical use in farming. The White Paper on a new Community Chemicals strategy<sup>19</sup> has the overriding goal of sustainable development. It aims to protect human health and the environment while ensuring the competitiveness of the chemical industry, though its implementation will raise many important practical questions.
- In the area of environmental policy, measures taken under Community legislation to reduce pollution from large combustion plants, and vehicle emissions technologies

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<sup>15</sup> “Antibiotic resistance in the European Union associated with therapeutic use of veterinary medicines”, report and qualitative risk assessment by the committee for veterinary medicinal products; European Agency for the Evaluation of Medical Products, 1999

<sup>16</sup> Opinion of the Scientific Steering Committee on antimicrobial resistance, 28 May 1999

<sup>17</sup> Article 152 of the Treaty on European Union states that “A high level of human health protection shall be ensured in the definition and implementation of all Community policies and activities.”

<sup>18</sup> “Community Strategy for Endocrine Disrupters”, COM(1999)706; European Commission, 1999

<sup>19</sup> White Paper “Strategy for a future Chemicals Policy”, COM(2001)88; European Commission, 2001

have contributed to the substantial and continuing improvements in air quality. Nevertheless, much research work remains to be done on assessing the impact of some pollutants on health, particularly the effects of small particles.

- Four EU action programmes on health and safety at work have been implemented since 1978<sup>20</sup>. They have led to Community measures to protect workers against dangerous substances and situations, and to improve the working environment.

With Member States responsible for the organisation and delivery of health services and medical care, the new **Community health strategy** aims to develop a coherent approach to health issues across all EU policy areas. Its core objective will be to **identify all policies and actions** which might have an **impact on health** (including healthcare systems) and to find ways of assessing the health impact of these policies. This will require better **policy co-ordination** (a “joined up approach”) to address inter-sectoral issues such as enlargement or social exclusion, and emerging health problems.

The proposed **public health action programme** will focus on three main strands of activity, intended to address many of the issues raised above.

- A first objective is to **improve health information and knowledge**. A comprehensive health information system will be developed to provide information and data on health status, health determinants and health systems to policy makers, health professionals and the general public.
- A second priority will be to **monitor and respond rapidly to health threats**, for example from communicable diseases. This could include attention to antimicrobial resistance, work on hospital infections, vaccine policy, and communicable diseases such as HIV/AIDS.
- Finally, the new public health action plan will address **health determinants**. It will include actions aimed at tackling the underlying causes of ill health, including lifestyle and environmental causes, by promoting health and preventing disease.

As many risks to health result from individual lifestyle choices, giving accurate information to the wider public and improving understanding at all levels is critically important. Food safety is paramount in this respect. In recent years the credibility of public authorities in the management of food safety has been severely damaged by the perception that they were more concerned to protect the economic interests of producers than the health of consumers. Assessment and regulation of food safety that is independent of the economic sectors concerned is thus essential to improve public safety and to restore public confidence<sup>21</sup>. In addition, clear labelling of the health and nutritional properties of foods is long overdue, given the importance of diet and nutrition to health and well-being.

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<sup>20</sup> OJ C165 of 11.07.1978, OJ C67 of 27.02.1984, OJ C28 of 03.02.1988 and COM(95)282 of 12.07.1995

<sup>21</sup> The Commission White Paper on Food Safety (COM(1999)719) proposed creating a European Food Authority

### **Topic 3: management of natural resources**

#### **Introduction**

Natural resources underpin sustainable development. They provide essential life support functions such as foods and habitats, carbon storage and water catchment, and provide essential raw materials. Although small changes in most stocks of natural resources pose little immediate threat, a persistent decline is of great concern for resources that are difficult or impossible to replace, such as bio-diversity.

We can distinguish broadly between those natural resources that are renewable if carefully managed (such as fish stocks and fresh water), and those that are non-renewable (such as oil and mineral resources). In this paper we have concentrated on those where the long run trends are of most concern (bio-diversity, waste generation, fish stocks). We also include the question of exhaustion of non-renewable resources such as minerals and coal, although on current consumption rates stocks may last for decades or even centuries.

#### **Major concerns and driving forces**

There are a number of general problems that undermine the efficient and sustainable use of natural resources. Different forms of industrial and agricultural activity affect many natural resources. When natural resources are part of a shared "commons" and access to their use is open to all this means that there is often little incentive for individuals to conserve and use them in a responsible way. Overexploitation can be the result. Poorly defined or disputed rights of ownership or access to resources weaken the incentives to conserve and use natural resources in a sustainable way.

##### *Bio-diversity*

At present we are failing to secure the long run viability of our eco-systems. Despite measurement problems, there are indications that recent decades have seen very significant losses in virtually all types of eco-systems at EU level. A high percentage of existing species within the EU are at risk of extinction<sup>22</sup>. In recent decades the trend has been persistently in the wrong direction, and this poses a serious long term threat to the natural resources on which our economic and social system depend.

Changing land use is an important factor. Although measurement is difficult and imprecise, data for the period 1980-1990 for 11 EU countries indicate that close to 14% of land previously considered to be part of natural cover was lost to urban development and housing. In addition, between 1980 and 1998 there was an 11% rise in amount of land taken by road networks in Member States. A large percentage of all nature conservation sites in Europe can be considered at risk from new infrastructure development<sup>23</sup>. Although policy at present tends to pay some attention to preserving particularly important habitats or sites of interest from development, the average level of protection is much lower.

Agriculture also profoundly influences the pattern of land use. The scale, the scope, and the nature of production techniques can have substantial impacts – good and bad – on the landscape and on natural habitats. Intensive aquaculture in sensitive marine areas is one of the

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<sup>22</sup> "Towards sustainable development – Environmental indicators"; OECD, 1998

<sup>23</sup> "Headline Environmental Indicators for the European Union", European Environment Agency and the European Commission, forthcoming.

driving forces for the appearance of toxic phytoplankton which can kill fish, seabirds and mammals. Intensive farming practices seem particularly prone to cause negative effects. These include “monotonous landscapes, the abandonment of traditional management methods, the use of large areas of wetland, moorland and natural rough pasture, pollution of ground water by increased use of pesticides and fertilisers, and reduction in biological diversity.”<sup>24</sup> Another European Commission report noted that intensive farming had “taken little or no heed of its impact on the environment.”<sup>25</sup>

However, it would be too simplistic – and wrong – to conclude that agricultural practices do nothing but damage the countryside. Many landscapes and site-specific environmental amenities reflect a farming heritage. Particularly in remote or mountainous areas, agriculture can play a crucial role in preserving attractive landscape features and ecological diversity. Abandonment of land or of traditional land management practices in such areas would be bad for bio-diversity and would reduce the environmental and amenity value of these areas. Public policy therefore has a potentially important role in setting the right incentives to encourage the management of bio-diversity and rural sustainability.

### *Water resources*

At the global level the problem of water shortage will prove one of the major challenges over the next few decades. However, at the level of the EU there are few water shortage problems, with the important exception of parts of southern Europe, where overexploitation of water has led to drying out of some areas and to salt water intrusion in aquifers around the Mediterranean coast. It is a cause for concern that in some areas current extraction is tapping water tables that will take centuries to replenish.

Pollution of water resulting from agricultural, household and industrial activity is a more widespread phenomenon in Europe. Water pollution causes damage to aquatic life and imposes sizeable costs in terms of the treatment needed to supply clean water to agricultural, household and industrial users. The spread of built-on land, including into natural flood plains, highlights the links between water management and land use planning. Absence of an integrated approach to these issues is causing increased damage from floods.

### *Fish stocks*

Fish represent an important renewable resource that provides a livelihood for those in the fishing industry and an important food source. There is strong evidence that existing rates of harvesting of fish stocks are unsustainable and threaten the viability of major fishing areas. The International Council for the Exploration of the Seas has persistently warned that EU waters are being over-fished. The same is true world-wide. Stocks of hake and cod in EU waters are at crisis point, and catches of all fish are falling rapidly. Landings of fish in the mid 1970s were nearly twice as high as in 1998.

Collapse of stocks is potentially disastrous for those who derive their livelihood from the industry and has important consequences for marine eco-systems. The collapse of the Canadian cod fisheries in the early 1990s devastated local fishing communities, leaving them few long-term prospects. The EU industry is characterised at present by over capacity, falling

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<sup>24</sup> “European Spatial Development Perspective – Towards Balanced and Sustainable Development of the Territory of the European Union”; European Commission, 1999

<sup>25</sup> “Agriculture, environment, rural development: Facts and Figures – A Challenge for Agriculture”; European Commission, 1999

employment, and low profitability. Lack of recognition that radical adjustment is needed has also tended to delay the introduction of effective adjustment measures, aggravating the problems of those in the industry.

Since 1983 the EU has regulated fishing under the Common Fisheries Policy (CFP). The CFP has offered, and still offers important benefits, such as a legal framework for regulation and enforcement, and a mechanism for restricting access to the main fisheries. On the whole, however, the policy has serious shortcomings:

- The setting of total allowable catches year-by-year has led to a neglect of longer term conservation and management. Member States have regularly postponed difficult decisions because of the short-term costs of the stringent measures needed for stocks to recover.
- As a result the quotas that each country is allowed for catches of fish are too high, and are difficult to reduce by negotiation as each country would prefer others to make cuts. Member States have until recently lacked the political will to act decisively.
- The financial instruments used in the sector under the CFP have tended to work against each other. The effects of measures to reduce capacity have been partly offset by subsidies to modernise and improve fleet technology. Other operating subsidies, such as exemption from fuel tax for fishing vessels, encourage over-fishing.
- There are technical problems in the scientific measurement of stocks, and in controlling the impact of fishing on growing fish and other species: finding a way to reduce “discards” – fish that are caught and then thrown back into the sea – is a major problem.
- There is evidence that enforcement of regulations on the part of Member States has been too lax and very uneven, which has reduced confidence in the CFP as a viable policy.

Current policy has failed to secure sustainable exploitation of fisheries resources, and will need to be changed if it is to do so. In the future the Community fisheries sector will have to be significantly smaller than it is today, if it is to survive. The Common Fisheries Policy is to be reviewed between now and 2002. Unless there is meaningful reform the costs in long-term economic damage to fishing communities, as well as to the marine environment, will be high. The recent Commission Green Paper<sup>26</sup> puts forward options for a change of approach towards subsidies in the fisheries sector.

#### *Non-renewable resources*

Extraction of non-renewable resources such as coal, oil and minerals may have significant impacts on landscape and bio-diversity if appropriate measures for waste management and restoration are not undertaken. A balance clearly has to be struck between exploiting these resources and protection of nature.

In addition, there has been a long running debate about whether certain non-renewable resources that are valued mainly for their commercial potential, such as iron ore, coal and oil

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<sup>26</sup> "The Future of the Common Fisheries Policy", COM(2001)135; European Commission, 2001

deposits, are running out. Conventional indicators such as trends in prices don't suggest a rapid increase in scarcity of these resources, and measured reserves for many assets run into decades. Moreover, rising prices in themselves stimulate the development of alternative technologies that reduce resource use. In many cases we can more than compensate for reductions in stocks of resources by providing other forms of wealth for future generations, such as technology and infrastructure, or by developing substitutes for the resource being used up, such as renewable energy sources.

However, despite little apparent evidence of scarcity there is still a question of whether we are using these resources up too quickly, leaving little for future generations. It is of course true that these resources are essentially finite, and so our current use erodes the stocks available in the future. We therefore should aim to use these resources responsibly and more productively wherever possible.

### *Waste*

Every person in the EU generates on average 3.5 tonnes of solid waste each year<sup>27</sup>. In recent years, waste volumes have grown faster than GDP. Similar growth rates over the longer term could significantly increase pressure on the environment and adversely affect public health. To date, the pressure to improve resource efficiency and reduce waste has come largely through commercial pressures to cut costs and from regulation by pollution control authorities. However, regulation can be expensive if it forces unnecessarily rapid adjustments to existing technology, rather than being designed to allow cheaper improvements to develop over time. As in other policy areas, the phasing in of new measures therefore has to strike a balance between the costs and benefits of early introduction.

A number of industrial sectors, such as the paper, glass, and metals industries have made significant improvements in resource efficiency in recent years, either through restructuring their activities towards higher value added products, or through raising process efficiency. There has also been a reduction in the use of hazardous substances in products, thus helping their management as waste. These are welcome developments, and there are other innovative approaches being adopted in the business community to improve resource efficiency. Policy needs to facilitate an active approach from the business sector that stimulates long-run improvements in resource efficiency if we are to decouple growth of waste and GDP.

### **Policy issues**

The major challenge that cuts across almost all resource issues is how to revise incentive structures in such a way that non-commercial considerations are given adequate weight by those managing and exploiting natural resources. The diversity and complexity of natural resources makes this difficult. A particular concern is how to reform policies that have an unacceptably high impact on natural resources (such as over-fishing and agriculture) without unacceptable socio-economic costs. In particular, how support and subsidy regimes can be reoriented to generate an interest in effective long-term management. Water shortages and water pollution are both due to failure to provide adequate incentives to encourage more responsible water use.

In the farming sector, first steps have been taken in broadening the focus of the Common Agricultural Policy towards taking account of wider economic, environmental and social

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<sup>27</sup> "Environment in the European Union at the turn of the century" (second assessment report); European Environment Agency, 1999

objectives. These have had some success<sup>28</sup>. Reduced levels of price support contributed to less use of inputs such as chemical fertilisers and pesticides. “Agri-environmental” measures have contributed to preserving bio-diversity and led to lower levels of water pollution. Taking land out of production (“set-aside”) has been shown to have beneficial environmental effects, provided it is properly managed. However, at present the goal of sustainable rural development remains subsidiary to the narrower objective of supporting farmers’ incomes.

An important prerequisite for improved long run management of our natural resource base is improved information on the current state of our natural resources, such as the measurement of bio-diversity and levels of fish stocks. Such data are essential for ensuring that consumption does not exceed the capacity of the resource to regenerate. The difficulties in measuring stocks of some resources and how they are evolving means that trends are not picked up as quickly as they should be.

In order to decouple economic growth from the use of resources and the generation of waste there is a need for effective instruments to shape the awareness of business and consumers and provide steady pressure for a long run increase in resource efficiency throughout the economy. Greater efficiency in our use of resources should reduce pressure on the environment, preserve larger amounts for future generations, and allow more time for the development of substitutes.

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<sup>28</sup> “Agriculture, environment, rural development: Facts and Figures – A Challenge for Agriculture”; European Commission, 1999

## Topic 4: poverty and social exclusion<sup>29</sup>

### Introduction

Reducing poverty is central to sustainable development. Although it is not a new phenomenon, it has an enormous direct effect on individuals in terms of ill health, suicide rates, persistent unemployment, and potential exclusion from the mainstream of society. The burden of poverty is borne disproportionately by single mothers and older women living alone. Poverty also has a strong tendency to repeat itself, often remaining within families for generations. This has a high social cost, particularly the waste of human talent and energy implied by unequal opportunities. A well-designed set of integrated policies to reduce these social costs would improve both fairness and efficiency. Poverty is a problem with long term consequences and requires a long-term approach.

Poverty can arise for a whole range of interdependent reasons. Major factors are differences in family background and wealth, differences in access to education and jobs, effort and luck, the effects of tax and benefit systems on redistributing wealth, and the direct provision of some services by the state (for example, health, policing, social services). These different effects can offset or reinforce one another, so small initial differences can sometimes have big effects. This complexity also explains part of the difficulty in arriving at a satisfactory definition of poverty.

The willingness to accept different forms of deprivation depends on our social and political values. These inevitably vary from Member State to Member State, but there is also a shared commitment between countries of the EU to forming a more cohesive society, and the fight against poverty and social exclusion is acknowledged to be a major element in the value systems of Member States<sup>30</sup>. This vision is reflected in the EU Treaty<sup>31</sup>.

### Major concerns and driving forces

Current patterns of poverty within the EU are diverse and evolving. This section provides an overview of important trends, drivers of change, and emerging risks:

- The measurement of poverty depends on the definition used, but on one common definition (**relative**) **poverty**<sup>32</sup> averages **17% in the EU** (excluding Finland and Sweden). **Vulnerability** is more widespread: 32% of Europeans experience at least one annual spell of low income over a period of three years, while 7% of the population – around 25 million persons – experience persistent poverty during this period. Persistent income poverty ranges from around 3% in Denmark and the Netherlands to 12% in Portugal.
- There are significant **income inequalities** which threaten social cohesion. At EU level, the poorest 20% of the population receives less than one-fifth of the income of

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<sup>29</sup> Poverty and social exclusion are closely related but different. Exclusion is a broader idea than poverty as it implies the idea of “access” at all levels, and this can be interpreted very widely. We do not propose to expand on the differences here, and for short hand we simply use the term poverty.

<sup>30</sup> See the conclusions of the European Council at Lisbon, Feira, Nice (2000), which may be downloaded from the following web site address: <http://ue.eu.int/en/Info/eurocouncil/index.htm>

<sup>31</sup> See section 1.2 above

<sup>32</sup> Poverty line defined as 60% of national median income adjusted for household size. Source: Eurostat European Community Household Panel 1996

the richest 20%. Social benefits reduce the proportion of poor people in all Member States but to very differing degrees, the reduction ranging from around 10% in Greece and Italy to over 60% in Denmark.

- Income gaps **between women and men** remain significant, with women's earnings almost one-quarter below that of men. This gap increases the risk that women will fall into poverty, since social security benefits and pension entitlements are often related to previous earnings.
- Many **cities** have serious pockets of poverty and social exclusion. Unemployment rates can vary significantly between districts, being up to 10 times higher in the worst affected parts than in the least affected.
- There is a **high level of early school leavers**: more than one in five of those aged 18-24 leave the education system with only lower secondary education at best. This is a particular worry, as there is a possible vicious intergenerational circle between childhood poverty, low educational achievement and poverty in adult life.
- Significant proportions of the **adult population fail to attain the literacy levels** considered as necessary to cope with everyday life in advanced societies, though the Nordic European countries in particular have made significant progress in resolving this problem<sup>33</sup>.
- **Rapid change in the labour market is posing a risk to those unable to adapt to change.** Organisational and contractual changes present risks for vulnerable individuals.
- There is also some concern over the risk of a **technological divide**. Persons in the high-income groups use the Internet three times more frequently than lower income groups. Older people have scarcely any access to the Internet (1/7 of the youngest group). There is a significant gap between men and women as regards access to information and communication technologies. Moreover, there are significant differences across the Union in access to the Internet, with a clear North-South divide. In Greece, Spain, Portugal and Italy, the rate is half the EU average, while in the Nordic countries it is considerably higher<sup>34</sup>.
- **Changing family patterns and household structures are increasing vulnerability for particular groups in society.** Household sizes are declining. Around one in twelve people live alone, an increase of 50% over the last 20 years. The proportion of dependent children living in one-parent households (mainly single mothers) has increased by 50% since 1983. Around 13% of all dependent children in the EU are living with just one parent. Three out of four single parent families are facing financial difficulties and the probability of living in poverty is twice as high for these children.
- **Ageing populations** raise new concerns about social exclusion and poverty among the elderly. Provision for retirement income needs to reflect the prospect of increased life expectancy, with many living perhaps 30 or 40 years after retirement. This will be a particular problem for the very old if their pension income fails to keep pace

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<sup>33</sup> See the IALS-OECD study (2000).

<sup>34</sup> Second report on economic and social cohesion in the European Union, European Commission, 2001

with price rises. Changing family patterns may reduce the amount of support and care given by families.

- Immigration flows make **global poverty** a domestic EU concern. The persistence of **racism, xenophobia**, and of social and economic **discrimination** make it difficult for immigrants to be effectively integrated.

### Policy issues

Economic and technological developments offer new opportunities and more choices to individuals to fulfil their potential. At the same time, these developments increase competitive pressures and carry the risk of creating a "two-tier" society where the more vulnerable members find themselves unable to keep up with fast-moving changes.

At the Lisbon European Council in March 2000 the EU set out a new strategy to strengthen employment, economic reform and social cohesion. Modernising social protection and combating social exclusion were identified as essential elements of this strategy. Tackling the sources of unemployment and poverty is central to its success. This means enabling greater access to quality jobs, in particular through increased opportunities for education and training for all ages, to encourage flexibility and the capacity to adapt to the requirements of a rapidly changing labour market. Equally important, tax and benefit systems must be reformed to make them more employment friendly and to remove poverty traps, particularly those which deny women the opportunity to take up paid employment.

The Nice European Council gave further substance to the objectives set at Lisbon by approving the European Social Agenda. To take full advantage of this momentum for change, social policy must be placed in its wider context of the European Union Sustainable Development Strategy: many other policies (such as education and training, transport, housing, health) have an impact on social exclusion. In addition, we must look beyond the 10-year horizon of Lisbon:

- Poverty is a persistent problem that is often transmitted from one generation to another. Eradicating poverty will take more than a decade. It is especially important to limit the passing of problems – such as lack of education or poor housing and living conditions – from one generation to another.
- Strategies to tackle poverty and social exclusion require a balance between targeted initiatives and general social measures. There is a particular need to avoid the risks of an underclass within which poverty replicates itself. This may require specific action for groups at risk (such as children, early school leavers, minority groups, disabled, elderly) or for some geographical areas. Community support comes from the European Social Fund and a specific programme on social inclusion.
- Financial integration and the increased mobility of the tax base are putting more pressure on tax and benefit systems. While private markets have the potential to ease this pressure by delivering some services more cost-effectively, their use must be carefully designed to ensure that universal access to basic entitlements such as decent health care, good education and core social services is maintained. Modernising social protection means building an active welfare state, not dismantling it.

## **Topic 5:      ageing**

### **Introduction**

The population of the European Union and of the accession countries is ageing, in contrast with trends in most developing countries. Migration flows into the EU have occurred in recent years and this has offset some of the effects of the ageing of the Community population. Nonetheless, recent Eurostat projections show that the old age dependency ratio (those aged over 65 as a percentage of the population aged 20-64) will double between 2000 and 2050. By the middle of the century, there will be one person aged 65 or over for every two aged 20-64. These demographic changes will have profound economic, budgetary and social implications.

An ageing population puts into question the financial sustainability of pension schemes and public health care. Under plausible assumptions pension expenditure (now reported to amount to 10% of GDP on average) would increase by 3-5% of GDP in the majority of Member States between 2000 and 2040<sup>35</sup>. Spending on health care could increase by a further 3% of GDP over the same period. At the same time, the shrinking labour force will lead to a lower rate of economic growth, unless it is offset by increased productivity.

Public pensions in the EU are either provided by governments, using revenues from taxation, or by the social partners, based on contributions of employers and employees. Many pension systems are funded on a "pay as you go" basis, where today's workers support today's retired. Because demographic change occurs slowly and is largely predictable, there is a strong temptation to put off difficult political choices when problems lie in the distant future. This raises the prospect of threats to fiscal stability, or a significant reduction in entitlements for future pensioners. A long-term approach is essential to prevent the occurrence of a social divide between generations and widespread poverty among the elderly.

Some options for reform to existing pension systems would put more emphasis on today's young people to provide for their own retirement. For example, moving towards a "funded" system in which individuals build up their own pension provision over time, often with state support. This may have some advantages in terms of transparency about who pays for what, but funding would not overcome the structural tension between the length of working life and pension needs in retirement. Moreover, a rapid shift from pay as you go to a funded system would mean that the current workforce would pay twice – once for pensions for the current aged, and once to build up provision for their own retirement. A wider range of policy options must therefore be explored.

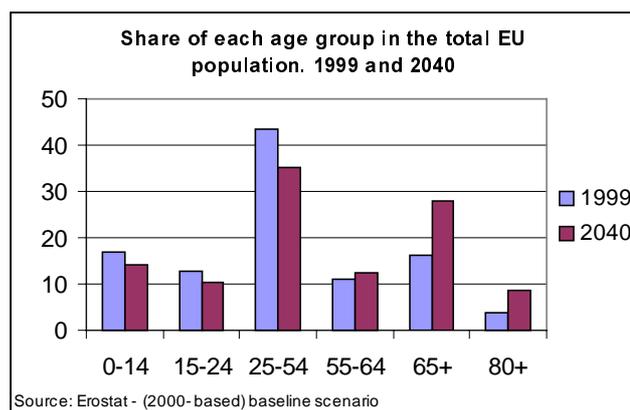
### **Major concerns and driving forces**

Due to rising life expectancy and declining birth rates in Europe, the balance between those of working age and those of non-working age is changing. In essence, we are living longer and therefore require more in terms of pension provision, but the length of active working life is not increasing to provide a matching increase in pension contributions. The ratio between years in which contributions are paid and those in which benefits are received is continually decreasing. The share of young people in the total population is declining, while that of older people is increasing. The key trends and drivers are:

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<sup>35</sup> See "EPC progress report to the ECOFIN Council on the impact of ageing populations on public pensions systems".

- Unfavourable **labour market developments**, in particular high unemployment rates and falling participation rates amongst older workers. Employment rates tend to drop off very sharply after the age of 50. Effective **retirement ages** in the EU are now well below both the statutory retirement age and levels in other industrialised countries. This partly meets a social preference for more leisure time<sup>36</sup>, but in many cases it is due to structural features in the labour market that discourage employers from taking on older employees, or the lack of suitable job opportunities matching the capacities and requirements of older people.
- The **sustainability of pensions systems** will also depend on what percentage of the total population is active in the labour market, as well as their productivity levels. Current employment rates are much lower in the EU than in other developed countries, particularly for women and older workers.
- **Life expectancy** at birth in EU15 increased by 8 years between 1960 and 1999, from 73 to 81 for women, and from 67 to 75 for men. This reflects improvements in diet, less occupational risk, and better health care, amongst other factors.
- **Birth rates** have fallen well below the level necessary for population replacement, due to social and cultural change, and difficulties for men and women in combining work and family responsibilities. The average number of children per woman was around 1.5 in 1999, whereas the figure required for a stable population is 2.1. The number of children per woman is also below the average number of children desired by couples (around 2 children, according to survey data).
- As a result, the proportion of people aged 65 years and over in the EU15 has risen from around 10% to 16% over the last thirty years, while the proportion of those under 25 has fallen from just below 40% to just under 30%. This trend would have been even more marked were it not for immigration. It will continue over the next few decades, when “baby boomers” progressively reach retirement age (see graph).



- The number of “very old” people aged 80 and over will rise very sharply, and by 2010 the number is expected to increase by about half. Changes in the structure of households accentuate the significance of this development. The elderly must increasingly rely on themselves and on public support, rather than on a family network.

<sup>36</sup> See Eurobarometers, 1992 and 1999, about attitudes in relation to retirement and pensions issues.

- The age structure of the working age population (15-64) is also affected: the share of those aged 55-64 is increasing and this is projected to continue. This raises questions about how to stimulate lifelong learning and to adjust working patterns to accommodate this “greying” of the workforce. People may prefer to spread economic activity more evenly over their lifetimes. For example, through more part-time work when they have young children, and also towards the end of their working lives, to “phase in” retirement.

## Policy Issues

A comprehensive approach must be adopted to address the economic, budgetary, and social implications of ageing<sup>37</sup>. The number of pensioners over the next three decades can be forecast reasonably accurately, but there is considerable uncertainty about migration and other long-run demographic developments. If birth rates do not increase as expected, and if there are very big increases in life expectancy due to technological breakthroughs, the implications could be much greater than described above.

Raising employment rates in line with the Lisbon strategy is a critical first step to meeting the ageing challenge. To achieve the target of an employment rate of 70% in the EU by 2010 a higher priority must be attached to lifelong learning and improving the adaptability of the labour force. There is a need for more family-friendly education structures and better care services for both children and the elderly, as present structures make it difficult to reconcile working and family lives. Moreover, the taxation and pension systems need to be reformed to discourage early retirement.

This long term approach focusing on more employment among women and older people should help to increase the number of potential contributors to pension schemes, reduce the number of recipients and therefore improve budgetary sustainability.

However, further progress must be achieved:

- Simulations have shown that the EU employment rate needs to reach 75% by 2020 to ensure that the number of adults not at work stabilises at its present level, relative to the number of employed people. Raising overall employment rates, especially amongst women and older workers, could go a long way towards offsetting the projected fall in the ratio of active to inactive persons, and considerably lessen the budgetary and economic impact of ageing populations.
- Revising **early retirement** schemes and the tax/benefit systems in co-operation with the social partners will be necessary to encourage people to stay longer in employment, possibly part-time, in line with the decreasing morbidity and disability levels among older people.
- Social protection and public pension systems should provide adequate income and health care services to the elderly, while keeping the tax burden at acceptable levels and maintaining other essential public services.

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<sup>37</sup> See Commission Communications “The future evolution of social protection” (COM(2000)622), and “The contribution of public finances to growth and employment: improving quality and sustainability” (COM(2000)846); European Commission, 2000

- If the employability and employment rate of older workers is to be increased, a major investment in lifelong learning is required, particularly in **IT skills**. Member States and the social partners should intensify their efforts in this respect.
- The provision of infrastructure and services (care, transport, . . .) must be reconsidered to take account of the increasing number of the elderly and their circumstances.

Population ageing in the EU Member States could be partly counteracted by **migration**. Building on the indications given by the European Council in Tampere, legal channels for economic migrants should be re-opened, and arrangements should be agreed at EU level to develop and co-ordinate a common immigration policy. This should be accompanied by measures to integrate migrants and to combat discrimination and social exclusion. Partnership with the countries of origin should be developed to facilitate orderly migration flows, to fight illegal immigration, and to mitigate any negative effects of migration for the countries of origin ("brain drain")<sup>38</sup>.

Migration within the EU may influence the impacts of ageing at regional level if younger, more mobile people leave less developed regions for regions with a more attractive range of employment opportunities. Southern regions may also experience inward migration of older people drawn by the milder climate.

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<sup>38</sup> Commission Communication "On a Community Immigration Policy", (COM(2000)757); European Commission, 2000.

## **Topic 6: mobility, land use and territorial development**

### **Introduction**

Mobility, land use and regional development are tightly interwoven in modern societies. In the short run the demand for increased mobility depends on incomes and prices for using different modes of transport. In the longer run it also changes according to patterns of land use – the location of people, homes, factories, offices, farms and shops. This spatial pattern is in turn a function of factors such as local planning rules, availability of infrastructure, the price of transport services, and personal preferences about where people want to live. The relationship between spatial patterns and transport thus runs in both directions.

Mobility, for both work and leisure, is important to our continued economic and social well-being. However, mobility is not an end in itself, but a means to access different goods and services. It may enhance business, employment and education opportunities as well as allowing for a wider range of leisure activities and lifestyles. However, increased mobility has important side effects, like emissions of greenhouse gases, air and noise pollution, the use of land, and congestion, effects which reduce quality of life. Emissions of greenhouse gases from transport are growing more rapidly than from any other source. Congestion costs are rising, while damage to eco-systems and bio-diversity are major concerns. More than 40,000 people are killed and over 1.7 million injured every year on European roads.

Encouraging people to live close to work and avoiding low-density development (“urban sprawl”) can reduce the need for mobility and land take. Better pricing of different modes of transport and policies to improve the quality of life in urban areas can limit the desire for long-distance commuting and would help encourage less transport-intensive living patterns. However, high-density living implies less living space, as well as more congestion and urban stress if not supported by effective urban infrastructure and public transport. Striking an appropriate balance between urban and rural areas is therefore not solely a transport issue, but also a matter for rural and urban policy.

There is also a complex link between mobility and regional development. At present, the picture of the EU is one of a richer, more densely populated core and a poorer, less populated periphery. The second cohesion report<sup>39</sup> identified a group of central regions covering just one-fifth of the Union’s area, but which contain over two-fifths of the population and account for half of EU GDP. However, several prosperous regions lie outside this area. The uneven distribution of population and economic activity will be more marked in an enlarged Community. Improving transport links can be important to give regional economies access to wider markets, but it is not a panacea for regional underdevelopment and the costs and benefits of new infrastructure need to be carefully weighed. A region also requires a range of other infrastructure and services to support a centre of economic activity.

### **Major concerns and driving forces**

Higher mobility and greater land use for building and infrastructure are above all driven by economic development and increased affluence. Recent decades have seen very rapid growth in distances travelled by both freight and people, as incomes have grown and prices of some modes have fallen or remained flat in real terms. The key facts are:

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<sup>39</sup> Second report on Economic and Social Cohesion, COM(2001)24; European Commission, 2001

- Over the last thirty years freight transport demand has persistently grown faster than GDP and has doubled since 1970, with much of the increase coming in road transport. Air freight transport has grown even more rapidly. Passenger transport, particularly by car, has followed a very similar pattern. On average, almost one European in two now owns a car<sup>40</sup>.
- These trends are predicted to continue in the immediate future. Freight transport is expected to grow by around 40% between 1998 and 2010, with road transport accounting for most of this increase. Passenger transport is expected to grow more slowly, mainly due to the rising costs of congestion on the roads, slow population growth and lower growth of car ownership as it approaches saturation in some countries. Air travel is expected to grow by a remarkable 90% over the same period.
- Change in vehicle emissions technologies have significantly reduced emissions of some atmospheric pollutants over the last decade, improving air quality. To some extent these improvements have been offset by growth in traffic volumes, but despite future increases in traffic, air quality is expected to improve significantly over the next 20 years. Greenhouse gas emissions on the other hand, are rising very rapidly due to the continued increase in transport overall.
- Congestion and inefficient use of infrastructure have large economic costs, perhaps as much as 2% of GDP. As well as wasting time, congestion raises costs for business and prices in shops for consumers. In Amsterdam, if current trends continue, rush hour public transport will move at little more than walking pace by 2005. One-tenth of the trans-European road network suffers from capacity constraints, causing congestion. The costs of congestion will rise rapidly as infrastructure increasingly reaches capacity.
- Over three-quarters of the European population live in towns and cities, which play a vital role as providers of services and centres of economic activity. Traffic congestion affects above all urban areas, which are also challenged by problems such as inner-city decay, sprawling suburbs, and concentrations of acute poverty and social exclusion.
- In aggregate terms, the Community has been able to maintain a rough balance between the rural and urban communities. At present, the population of rural areas is increasing, and in recent years their employment levels have grown faster than the Community average, though the picture varies from region to region<sup>41</sup>. However, this may change after enlargement of the Union. Structural change in the new Member States could lead to a collapse in rural areas and rapidly growing pressure on urban infrastructure.
- In some Member States income inequalities between regions are worsening, though at the level of the Community the gap between richer and poorer regions has narrowed somewhat in recent years. Nevertheless, the differences remain substantial, and can be expected to be greater still in an enlarged Union. In the EU15 the richest region has an income per head 6 times that of the poorest; if the accession countries were included in the calculation the ratio would be more than ten to one.

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<sup>40</sup> “Defining an environmentally sustainable transport system”, Commission expert group on transport and environment, September 2000

<sup>41</sup> Second report on Economic and Social Cohesion

- Relatively low levels of spending on research and development in some lagging regions may hamper their ability to catch up, though this is only one of very many factors influencing economic performance.

The factors that lie behind these problems include:

- The affordability of travelling by road and air improved relative to other modes over time. The price of private motoring and aviation travel as a percentage of average wages has fallen as cars have been produced more cheaply and efficiently and airlines have raised productivity, while the price of public transport has tended to keep pace with wages over time. For distances of more than a few kilometres, road transport – whether of people or freight – offers the convenience of “door-to-door” service that other modes find difficult to match.
- The completion of the internal market has boosted trade flows, but the resulting pattern of transport activity has been unbalanced due to an absence of corresponding improvements in the pricing structure for different modes. In addition, liberalisation of freight transport by road has been achieved across the Community but only a few Member States have opened rail freight to competition, so rail freight markets remain fragmented and closed. This uneven pace of reduction in the costs of different modes of transport has had adverse environmental effects.
- Local planning regulations also affect transport demand. “Urban sprawl” – in particular low-density housing – drives people into private cars. The growth in car use is closely associated with an increased degree of urban sprawl, and the availability (or not) of public transport. Transport-related noise and poor air quality in urban areas can encourage migration of people and enterprises from cities to suburbs and create a vicious circle.
- Transport policy has generally sought to match the increase in demand for road and air transport by significant public investment in infrastructure, both from national budgets and the Community structural funds. Extension and improvement of the road network has significantly increased the flexibility and speed of road freight and the speed and convenience of cars. This has underpinned the rapid growth in freight transport and use of private cars.

Patterns of mobility and land use are also linked to the balance between rural and urban communities. Access to good transport and communication infrastructure is an essential part of preserving the viability of both rural and urban society. Poor infrastructure and lack of access to services such as information and communication technologies may discourage private sector investment in rural areas, limiting employment opportunities. However, while better transport links can support the rural economy by expanding markets for local produce, they also tend to increase commuting and rural house prices and have environmental impacts.

### **Policy issues**

In recent decades transport demand has risen broadly in line with GDP. While further growth in activity is expected, this trend is not sustainable. There is clearly a longer term need to decouple transport growth from GDP and to limit the economic and environmental costs of transport growth that does occur. The Commission is preparing a review of the EU's Common Transport Policy, to be published in a forthcoming White Paper. This will set out the broad thrust of Community policy over the next ten years or so. Although the time horizon for the

Sustainable Development strategy will go beyond this, it will be important to ensure that the two are consistent. An accurate appraisal of the policy issues is needed:

- At present the relative prices of using different transport modes do not reflect their full costs of use, in terms of additional congestion, damage to infrastructure and to human health and the environment<sup>42</sup>. As a result there is inefficient use of existing infrastructure, and the balance between modes is distorted. For example, aircraft fuel is at present not taxed, unlike other fuels. The need to develop better pricing of different modes has been recognised in a number of Commission documents<sup>43</sup> but progress has been slow.
- New developments in intelligent traffic management systems, such as the use of global positioning systems that track the movement of vehicles, and electronic fee collection systems for road pricing, have the potential to improve the use of infrastructure and reduce congestion costs. In addition, successful technology would be a world leader and could be exported widely. Improvements in communication technologies offer a potential alternative to transport. Distance working using modern communications may provide one way of reconciling demands for distance living with reduced mobility. It will be important to consider how best this potential can be exploited.
- Improvement in use of infrastructure can reduce congestion, and new infrastructure – when it is proved to be necessary – can fill important gaps in the network and increase capacity. Local planning rules also affect the location of economic activity and the development of new infrastructure and resulting transport flows. Planning decisions in the past have often not properly accounted for the effects of new development on the natural environment, congestion and other impacts, and policy needs to take these issues into account in the future.
- Development of housing, business, and new transport infrastructure also has implications for the relationship between town and countryside. Attention is needed to ensure that policy does not actively undermine the balance between the rural and urban economies. This means ensuring that urban areas do not develop urban sprawl that fractures communities and destroys the distinctiveness of the countryside, while ensuring that rural policy provides active support for a living countryside. This cannot be a matter for transport policy alone, but also requires more coherent rural and urban policies.
- The rural economy also continues to depend to an appreciable extent on farming and the Community's Common Agricultural Policy has been geared to maintaining farm incomes. The recent shifts towards more sustainable rural development – which aimed to improve the competitiveness of agriculture while enhancing its social and environmental functions – are still modest. Agriculture is still associated with high

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<sup>42</sup> See for example “Revenues from efficient pricing: evidence from the Member States”; study for the International Union of Railways, Community of European Railways and the European Commission's DG Transport & Energy, 2000; “Efficient prices for transport (estimating the social costs of vehicle use)”; CE consultants, 1999

<sup>43</sup> See for example “Fair payment for infrastructure use: a phased approach to a common transport infrastructure charging framework in the EU” (COM(1998)466); “Towards fair and efficient pricing in transport: policy options for internalising the external costs of transport in the European Union” (COM(95)691)

levels of pollution, and has damaged many of the aesthetic and ecological qualities of the landscape it once helped to create. This in itself undermines the attractiveness of the countryside as a place to live. There is therefore potential for agricultural policy to provide more support for a sustainable rural economy.

- Community structural funds have made sizeable investments in physical and social capital in the less developed regions of the Community and Ireland’s phenomenal economic growth in recent years shows the possibilities for territorial development if Structural Fund assistance is used within a coherent policy framework. In addition, measures such as the Trans European Networks (TENs) have aimed to improve links between peripheral and central regions of the Community. One of the main objectives of the TENs in the future will be the completion of a rail network that will encourage a shift from road to rail.
- Enlargement is likely to bring with it new and more acute challenges. The new Member States will in general be poorer and have a much larger agricultural population. Their infrastructure has suffered from many years of under-investment. Closing the gap with the Union will need a major investment effort. Since these investments will shape their future transport and land use patterns for many years ahead it will be crucial to integrate economic, environmental and social issues into planning and infrastructure appraisal to ensure that all costs and benefits are taken into account.
- Many of these issues are identified in the European Spatial Development Perspective<sup>44</sup>. This aims to offer Member States, their regions and cities a non-binding framework for co-ordination of policies with significant impacts on regional development, without, however, seeking to impose it on them or on other policy areas. This approach reflects the fact that solutions to many of the problems relating to the interactions between mobility, land use and territorial development can only be implemented at regional and local level, while others may benefit from a national or Community approach.

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<sup>44</sup> “European Spatial Development Perspective – Towards Balanced and Sustainable Development of the Territory of the European Union”; European Commission, 1999

Very few, if any, of the unsustainable trends reviewed above are new. They have been known to informed public opinion and in policy circles for some time. This can at times give rise to a sense of *déjà vu*, even complacency. Such attitudes are, however, mistaken, as familiarity with the phenomena is not the same as understanding the fundamental causes and how to tackle them. Nor does the fact that many of the trends are already well known make them any less preoccupying.

To make a decisive step from awareness to action, and to put in place an effective response to the issues raised in this section, two important questions must be answered. First, are there any common causes to these long-term social and environmental challenges? Second, why have we not done more to deal with them? If, as argued in section 1, greater social and environmental responsibility is not an obstacle to long-term economic development, why have Member States and the European Union failed to pursue sustainable development more vigorously?

The next section develops a general answer to these two questions by identifying the main obstacles to creating a more sustainable society and economy. Following from this diagnosis, we then lay out the main tools we can use to achieve the specific goals of the European sustainable development strategy which the Commission will propose to the Gothenburg meeting of the European Council.

### **3. COMMON PROBLEMS**

Many of the problems identified in the previous section have common roots. They are characterised by complex interdependencies between sectors. Several are long-term in nature, with problems building up gradually. Firms and citizens often face poor incentives to produce and consume in a sustainable way. They may be ill informed about the wider effects of their actions, or about alternatives. And institutional obstacles make it difficult to respond effectively to these failings. This section looks at these issues in more detail, and shows how they have contributed to the problems identified above.

#### **3.1 Wrong incentives**

Individuals and companies often face incentives which encourage them to behave in ways which, while individually rational, have negative impacts on others. Market prices for the use of goods and services which do not properly reflect the true cost to society of providing them lead to too much consumption of those goods and services and too little of others. For example, when we drive we generally slow down the progress of other road users. Since this cost is not incorporated in the price we pay to drive we do not take it into account in deciding how and when to travel. As a result, there are enormous inefficiencies in the way we use road space. High taxes on labour income act as a disincentive to participate actively in the labour market, while poorly designed tax and benefit systems can generate poverty traps.

Incorrect prices are also a major source of many environmental problems. In general, the market prices for goods and services do not incorporate the costs of pollution. Consequently, producers have little incentive to find and adopt cleaner methods of production, and consumers are not encouraged to seek out cleaner products. Worse, in some cases the most polluting industries benefit from significant subsidies that encourage the production of dirty goods and discourage consumers from switching to cleaner options.

#### **3.2 Sectoral policy inconsistency**

Both at national and Community level, individual policies generally concern specific sectors of the economy such as coal and steel, or particular areas such as trade or competition. These policies are normally developed by separate administrative departments which have specialised knowledge of their own sectors, but are less concerned with how their policies affect other parts of society and the economy. This narrow, sectoral approach to policy making has led over time to some significant problems:

- Due to a high level of interdependence between some sectors the solutions to some problems lie in the hands of policy makers in other sectors. Environmental policy increasingly requires action by other policy areas such as enterprise, energy, transport and agriculture. Transport policy depends on taxation, research and technology, and land use planning policy. Social policy instruments acting in isolation will not solve problems of social exclusion. In many cases these spillovers between sectors are not fully taken into account, so policies in different sectors pull in opposite directions. This undermines their effectiveness and wastes resources.
- The narrow sectoral approach makes it easier for interest groups representing a particular sector to obstruct reforms which would benefit society as a whole but would have negative consequences for them. This uncoordinated focus on sectoral impacts rather than on the wider interests of society means that reform in practice is

attempted in a piecemeal and inconsistent way. Measures that have clear winners and losers are fought over one by one, rather than being seen as part of a wider package that could benefit all.

- The Community dimension adds extra potential for inconsistent policy making. Both responsibility (the extent of “Community competence”) and the way in which decisions are taken (unanimity or by weighted majority) vary from one policy domain to another. The sequence in which new policy initiatives are taken, both at EU and national level, can also lead to undesirable outcomes.
- Problems of co-ordination are compounded by a proliferation of new policy initiatives and multi-annual programmes at EU level. There are currently over 60 multi-annual initiatives described as “strategies”. The different initiatives are rarely synchronised. The Agenda 2000 time frame runs from 2000 to 2006, the Single Market Strategy from 1999 to 2005, the next Framework Programme for Research from 2002 to 2006 and the new Environment Action Programme from 2001 to 2011.

Clearly, there are limits to the extent to which policies in different sectors can be reformed simultaneously. The Agenda 2000 reforms involved changes in particular to agricultural, structural, and external policies. Undertaking a similar exercise for an even wider set of policies would pose severe practical problems. Attempting to review all Community policies at the same time would lead to institutional paralysis. Measures to improve coherence should instead focus on linking together policies where the gains from co-ordination are expected to be greatest. In addition, if the design of sectoral policy attempts to take wider considerations than the interests of the sector into account, improving policy consistency should not mean that all policies need to adopt identical timetables.

### **3.3 Short termism in policy making**

A striking example of the possible effects of a short-term perspective is our inability to manage renewable natural resources sustainably. The Community has been unable to agree cuts in fish catches that are essential to preserve stocks for the future because of the short-term costs. This is despite the substantial long-term economic and ecological benefits in preserving stocks from collapse. Short termism has been a particular problem for environmental policy as many environmental problems are not immediately visible, but it is also true in other policy areas. When spending must be reduced to balance the national budget the first item to be cut is usually investment. This is because cuts in everyday services are immediate and painful, whereas the deterioration of public infrastructure takes time and is not immediately noticeable.

A root cause of short termism in the design and implementation of policy is the nature of the political cycle. The gap of at most four to five years between elections naturally limits governments’ time horizons. In addition, one group that does not have a voice in these political choices is the future generation. In the absence of a coherent long-term vision, policy priorities may be influenced too much by short-term events. Policy responses then take the form of “quick fixes”, which themselves may make the problem more acute, or cause difficulties in other areas.

Problems of short termism are likely to be worse when the costs of doing something are up-front and highly visible while the benefits are difficult to quantify and spread over several years. Moreover, costs and benefits may be unevenly distributed: costs of change often fall on particular groups of producers or citizens, while benefits are more widely spread. As a result,

the "winners" from a policy change usually do not make themselves heard, whereas the "losers" do. Short termism can therefore be compounded by a highly sectoral approach to policy making.

At Community level, the regular six-monthly change in the Council Presidency induces a short-term perspective. New initiatives are often launched to take advantage of a political window that becomes available while a particular Member State holds the Presidency. A Member State's running of the Presidency tends to be judged by the amount of activity it generates – the number of regulations or directives adopted – rather than the quality of those measures.

### **3.4 Policy inertia**

The hardest innovation in policy-making is to stop old practices. Some unsustainable trends result from a failure to change or cancel policies which are past their "sell-by date". These are measures which made sense when they were introduced, but which have not been changed in response to changing circumstances. For example:

- When state pensions for all were first introduced life expectancies were much lower, and working lives typically much longer than today. Early retirement schemes and the tax and benefit system have resulted in biases that favour early withdrawal from the labour market, leading to a fall in the average retirement age. Both need reform today, when skill shortages are emerging, and the shrinking working age population and increasing numbers of pensioners threaten the sustainability of public finances.
- Town planning rules which imposed rigid separation between the location of housing and industry made sense when much industrial activity was very polluting. Now that industry is cleaner and services play a more important role in the economy these zoning laws may no longer be justified. More than this, together with rising levels of private car ownership they worsen traffic congestion.
- Our energy supply infrastructure is currently heavily dependent on the use of fossil fuels. This reflects investments made in the past when the impacts of burning fossil fuels on human health and the global climate were not as well understood. Changing our sources of energy supply is now a slow process as the infrastructure is long lived.
- Public policy as well as case law and political processes can, often for very good reasons, move much behind the pace of technological progress in areas such as genetically modified organisms, genetically modified food, and other innovations.

The paradox of having both policy inertia on the one hand, and short termism on the other, is more apparent than real. Both problems essentially arise from an excessively sectoral approach to policy making. This enables sectional interests to prevail over the wider concerns of society, by preventing necessary reform to outdated policies needed to orient them towards the longer term.

### **3.5 Limited understanding**

We have a poor understanding of the causes and likely effects of several of the problems identified in section 2 above. For example, the definition, causes and consequences of poverty are complex and controversial. There are competing explanations for why disparities in the distribution of income are widening in some places, and for changes in family structures and

birth rates. There are large information gaps in many other areas such as the measurement of changes in bio-diversity and their potential long-run effects.

We face similar uncertainties about the precise impact of many policy responses. In addition, in many cases inadequate attention has been paid to whether existing policy has actually been effective. Frequently, it is assumed that spending money on a problem is the same as successfully tackling it. In practice, we have often failed to assess whether a policy has achieved its objectives, how much it has cost, and what its positive or negative spillovers on other areas have been. This is complicated by the fact that policy objectives are not always well defined. In consequence, we often have an insufficient basis on which to assess what reforms might be necessary.

### **3.6 Inadequate communication and dialogue**

Arguably, many of the existing failures to tackle unsustainable trends reflect a policy process that is too fragmented, technocratic and distant from the real concerns of people. Alienation from the political process can also result from a perception that policy making is excessively influenced by vested interest groups, to the detriment of the population at large. Whatever the truth of these views, it is undeniable that there is at the very least a strong belief that the average citizen has little scope for direct input into the political process, and that policy making has become disconnected from their daily concerns. This is reflected in rising abstention rates at elections for all levels of government. These issues will be examined in more depth in the Commission's forthcoming White Paper on Governance.

Scientists and policy makers often communicate poorly with the public and with each another, and misconceptions are common on all sides. As a result public awareness of the long-term consequences of different policy options, consumption patterns and lifestyle choices is also limited. In part, this may arise from the increased complexity of the modern world and the corresponding complexity of policy responses. Recent health scares – such those relating to BSE or phthalates – demonstrate the fragility of public confidence in the integrity of science and scientific advice about risks. This confidence is further undermined by the perception that the interpretation and dissemination of research results is sometimes subordinated to commercial pressures<sup>45</sup>.

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<sup>45</sup> The success of the European Research Area will be judged partly on its ability to develop a common basis for assessing research results and to improve understanding between science and society.

## **4. COMMON SOLUTIONS: A TOOLKIT FOR SUSTAINABLE DEVELOPMENT IN EUROPE**

### **4.1 Introduction**

The previous section identified some common problems which have led to the emergence of the unsustainable trends described in section 2. This section suggests how we can go about solving them.

The analysis in section 3 shows that better policy integration is needed at all levels, so that different policies complement each other instead of pulling in different directions. Policy integration should start at the outset of the policy making process. Sustainable Development should become an underlying principle in all areas of EU activity. However, joined-up thinking in policy making is not enough on its own. Better co-ordination and greater dialogue will not improve things if policy does not make full use of the right tools and ideas. Accordingly, this chapter not only sets out some ways to improve policy coherence, but also describes the most important tools that can and should be used as the building blocks of a strategy for sustainable development.

### **4.2 A common basis for policy design and implementation**

One of these building blocks is the principle that the costs and effects of all policies should be examined more systematically. This analysis should try to include not just the impacts in the area targeted by the policy, but also its spillovers – good and bad – onto other policy areas. Identifying spillovers and sharing of expertise between different departments of government is important if we are to create the conditions for “win-win” policies and improve the coherence of policy making. Inevitably though, in some cases we have to make trade-offs between changes in economic, environmental and social assets. Careful assessment of the costs and effects of different policy options and their distribution is vital to ensure that these trade-offs are made in the interests of society as a whole, and that mechanisms are put in place to enable business and citizens to adapt to change.

Good policy design should also consider the different instruments available to meet the policy objective. The aim should be to give policy makers as full an assessment as possible of the costs and effects, the advantages and disadvantages of the different options, so that we can reach our desired objectives, whatever they may be, at least cost. This does not mean going for the cheapest or “do nothing” option. It means doing things efficiently and effectively. The more cost-effective policy is, the more resources we have to devote to other priorities. This helps us get the most we can out of the available resources by avoiding waste and inefficiency.

Climate change provides a very good example of the importance of cost effectiveness. Some policy measures – such as gradually removing subsidies for the use of fossil fuels – can reduce greenhouse gas emissions while actually raising economic performance. Still, meeting the targets in the Kyoto Protocol is likely to have some economic costs. However, the size of these costs and how they are distributed will depend very much on what policies are used. The Commission services have estimated that a policy of equal percentage reduction targets for different economic sectors would be nearly three times more expensive than a policy that

encourages the biggest savings in sectors where emissions can be reduced at relatively low cost<sup>46</sup>.

### **4.3 Long term targets and intermediate milestones**

Sustainable development is a framework for policy that focuses on long-term management rather than short-term quick-fix solutions. Identifying concrete, ambitious, achievable long-term objectives is necessary to give substance to policies for sustainable development, and to develop popular understanding and support for these policies. These objectives should lead to the establishment of clear – and preferably measurable – targets. Intermediate milestones allow us to judge our progress. When the policy target can be expressed in very precise terms, it may be possible to meet targets agreed at the European level through Member States applying their own, cost-effective solutions. Clear long-term targets also provide other important advantages:

- Sustainable development means leaving an adequate legacy to future generations. Long-term targets are required to limit the scope for short termism and to ensure this obligation is met.
- Uncertainty and instability in the policy regime generate their own costs. Clear long-term signals can help companies and individuals plan better. This is particularly important as the capital stock of an economy turns over only relatively slowly. Investment decisions have long lasting effects and are costly to reverse.
- Provided targets can be clearly defined, it can make sense to delegate responsibility for meeting targets to those most closely involved with particular policy areas, or to an independent authority free from short-term political pressures. The latter is the case of the European Central Bank, which has been given responsibility to provide stable prices. However, not all policy objectives can be defined in such clear terms, and there are limits to the extent to which it is desirable to devolve power to unelected, unaccountable bodies.
- Implementing new policy measures gradually can reduce the costs of change considerably by allowing adequate time for businesses and individuals to change their patterns of production and consumption. For example, companies that have to adapt to new technologies to remain competitive generally have much less trouble adjusting if these changes can be made as part of the normal investment cycle. Taking a gradual approach avoids the unnecessary creation of unemployment and gives workers time to acquire new skills.

A few policy initiatives have shown that it is possible to gather consensus around gradual but steady adjustment to long-term targets, which smooth the transition to sustainable policies. An example is the ten-year perspective for reform of economic and social policy agreed by the European Council at Lisbon.

### **4.4 Creating markets and getting prices right**

“Getting prices right” so that they better reflect the true costs to society of different activities would give everybody the right incentive to integrate the effects their behaviour has on others

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<sup>46</sup> Green paper on greenhouse gas emissions trading within the European Union (COM(87)2000); European Commission, 2000

into their everyday decisions about which goods and services to make or buy. It is therefore one of the most important tools available to policy makers.

There are many different ways of changing the prices or other incentives that companies and consumers face so as to underpin sustainable development. Direct methods include the creation of tradable property rights (such as emission permits) that allow markets to set a price for pollution, eco-taxes that discourage over-use of environmental resources, and legal liability regimes<sup>47</sup>. Governments can boost markets for sustainable products and services through their public procurement policies<sup>48</sup>.

Clearer definition of property rights can also play a useful role in improving the management of natural resources where there is a risk of over-consumption. Subsidies can be an effective tool in some cases where behaviour has positive spillover effects. For example, there is some merit in the idea that companies should be paid a temporary subsidy to take on the long term unemployed, as the social costs of long term unemployment on individuals, their families and the public sector finances are very significant. Any proposal made in this respect would have to comply with the principles of EC and Member States' legal systems.

The user pays principle is an important first step in improving incentives. It means simply that under normal circumstances those that benefit from the use of something should pay for it. This reduces wasteful consumption, and gives those who use a resource the right incentives to behave responsibly. Evidently, the user pays principle cannot be applied indiscriminately – there are very legitimate exceptions to its application in modern societies, not least in aspects of social provision through the welfare state. Public subsidy is often necessary and justified. However, the user pays principle is an important reminder that the rationale for subsidies should be clearly set out to avoid wasteful use of resources.

The polluter pays principle is an important extension of the user pays principle to environmental policy making. The underlying philosophy is that polluters do not have an inherent right to pollute. The polluter pays principle has been defined in various ways, but the most important interpretation is that the polluter should pay for the costs his pollution imposes on others – for example through a tax on polluting emissions. This provides an added incentive to look for reductions in pollution. A more limited interpretation would be that polluters should pay only for the costs of any pollution control measures required by law.

The polluter pays principle is already part of the EC Treaty, but it is not yet widely enough applied at either EU level or in Member States. A much more rigorous and consistent approach is required. Significant improvements in both economic and environmental performance could be achieved without increasing the overall tax burden by gradual reform of existing tax structures and subsidy regimes, so that the prices paid by producers and consumers more accurately reflect the costs and benefits their activities impose on other members of society.

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<sup>47</sup> Different instruments have different advantages and limitations. For example, legal liability is unlikely to be an effective approach in the case of climate change - who do you sue and for how much when there are many different sources of greenhouse gases? And how do you prove causation between a given emission source and a given effect? In other cases, such as oil tanker spills, it may prove a much more promising option.

<sup>48</sup> Public procurement rules also have to be carefully designed to avoid them being used as a cover for protectionism. The Commission will shortly publish a Communication on public procurement and the environment.

Part of the difficulty in applying the polluter pays principle is that it can be difficult to define who the polluter really is, as both producers and consumers bear some responsibility for the environmental impacts. For practical purposes therefore the responsibility for combating pollution should be assigned to those who are in the best position to reduce pollution at relatively low cost<sup>49</sup>. In recent years a number of initiatives by Member States have aimed to encourage producers to design products that are easier to deal with in the waste phase by making them responsible for the environmental impacts of products throughout their life cycle. Some recent Commission proposals have also been based on this idea of extended producer responsibility.

#### **4.5 Sectoral policy coherence**

In order to try to redirect policy in individual sectors away from a narrow set of objectives there have been several efforts at Community level to “integrate” broader concerns into the conduct of sectoral policies, such as employment promotion, regional development and environmental protection. The current efforts to integrate environmental concerns into other sectoral policies (the Cardiff integration process) have shown that some progress is possible through such initiatives.

The Cardiff process has increased understanding of the issues and helped develop new policy approaches. However, there are also limits. Improved dialogue does not in itself solve all problems when there are unavoidable trade-offs between competing interests. Moreover, this type of policy integration is itself a sector by sector approach, so it is unable to guarantee that different integration initiatives take a consistent approach. It is therefore unlikely to produce the best overall balance between the interests of consumers, citizens and producers.

Practical improvements to the sectoral integration approach would result from greater transparency – that is, a clearer presentation of the economic, social and environmental costs and benefits of different policy options. Consistent and rigorous evaluation should be conducted jointly and openly to ensure that the different objectives are given their appropriate weight in each sector. Improving our understanding of causes, effects and inter-linkages between sectors is therefore critical to designing and implementing policies for sustainable development.

#### *Beyond integration: improved co-ordination in Community policy making*

Sustainable development implies a society-wide approach to policy design. Sustainability must be placed at the core of the mandate of all policy makers. This means more than tagging on environmental and social objectives to existing policies. Achieving these objectives should be as relevant to judging the success or failure of a policy as its sectoral targets. Otherwise integration and sustainability risk becoming buzzwords to which policy-makers pay lip service only. Integration must mean something more than minor adjustments to “business as usual” if sustainable development is to move from rhetoric to reality. This needs political commitment and leadership.

As one part of the current internal reforms, the Commission has established a Strategic Planning and Programming function to help improve co-ordination between departments. In addition there is a need throughout the Community institutional structure for a practical political mechanism to arbitrate in a consistent and rational way across sectors when

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<sup>49</sup> See Council Recommendation of 3 March 1975 – Official Journal L 194 of 25 July 1975

competing interests are at stake, and to provide clear long term policy objectives. Moreover, consideration could be given to creating a “council” for sustainable development with no direct stake in the policy process. Such a body may be better placed to provide objective critical reviews of existing policies. Several Member States have already established independent councils in order to advise their governments on sustainable development issues.

#### *Regular policy reviews*

Regularly and systematically evaluating policies to ensure that they are meeting their objectives, bringing benefits to society as a whole and are consistent with the overall objective of sustainable development should become a core element of policy making. Such reviews should be undertaken in an open manner so that the views of all stakeholders can be taken into account. In addition, more use should be made of "sunset clauses" in legislation that provide for it to be automatically ended or reviewed after a number of years. Not all policy measures need to last forever, but it is a rare – and brave! – regulator who will voluntarily declare that s/he is no longer needed.

#### **4.6 Technology at the service of society**

In the context of sustainable development, technology can be a double-edged sword. Technological progress has enormously increased our material wealth and improved our quality of life in every area, from communications and transport to new foods and health. They can also offer major opportunities for more efficient use of resources through changes in production techniques and the way services are delivered. Moreover, technology can help us ease potential trade-offs between competing ends. New technologies can often reduce pollution or risks for health and safety at work at much lower cost than adjusting existing technologies. Without further advances in technology and its wider use, the most challenging environmental problems, such as climate change, can only be tackled through painful changes in production and consumption patterns. Technology will therefore be at the heart of moves to sustainable development.

However, technology also brings its own challenges, particularly when change is rapid. New technologies and working methods can increase competitive pressures and can force difficult adjustments. Emerging technologies create new opportunities but sometimes also new risks and in some cases – such as genetics – new ethical questions. The enormous effect of technology on the material productivity of our societies also raises the prospect that we increase the scale of output and consumption more rapidly than we can reduce pollution per unit produced, thereby increasing overall pressure on the environment over time – the “rebound” effect.

This means that technological progress has to be actively harnessed in the interests of sustainable development. The challenge for policy is to influence innovation so that the solutions chosen by markets are “winners” for sustainable development. Market-based approaches that “get the prices right” are important to stimulate the development of new and environmentally safe technologies and their rapid take-up. Public policy can also help to accelerate the diffusion of new technologies by benchmarking, demonstration projects and removing non-market barriers to their use, including regulations that unnecessarily hamper innovation.

A clear, long-lasting commitment from governments to pursue sustainable development as a core policy objective will strengthen the signals coming from prices. This will help to give companies assurance about the stability of the policy framework and encourage a pro-active

approach by business during a time of rapid structural change. Credible long-term policy commitments will give companies time to develop new techniques and adapt smoothly to the transition to sustainability. As well as aiming to provide the right framework conditions, public authorities can also fund basic and essential applied research where it is too costly or too risky for an individual company.

#### **4.7 Improving knowledge and understanding - sound science, risk and transparency**

Science and scientific research does not take place in a vacuum. The results of research can have important effects on the direction of public policy. This inevitably raises doubts about the objectivity and completeness of the research methods and results when commercial interests are at stake. To remove or at least minimise such suspicions research results should be reported in an open way. New research should be carefully peer reviewed to ensure its credibility. Confidence in the use of scientific information would also be enhanced by independent synthesis of the evidence so that it can be communicated to and understood by a wider public.

Given the speed and complexity of technological innovation, independent scientific research is essential to help us evaluate the opportunities and risks of new production techniques and new products. Risk is sometimes a necessary part of social progress – risk takers and innovators are essential for a dynamic economy. However, many risks are undesirable and have to be actively managed. For example, in the development of new medicines a balance has to be struck between the potential benefits that the treatment offers, and the risk that it may turn out to have damaging side effects. Similarly, the risks posed by new synthetic chemicals have to be weighed against their benefits in use. Therefore in the context of sustainable development dealing with risk means carefully evaluating the economic, environmental and social effects of innovations and taking a balanced view of the likely positive and negative impacts.

Inevitably, in some cases we do not yet have enough information about the existence or scale of a risk to properly assess its real importance. However, lack of proof that a risk exists does not provide an adequate excuse for ignoring it. This simple truth is at the heart of what is commonly known as the “precautionary principle”. But the precautionary principle in itself provides little practical guidance about how to manage risk and uncertainty<sup>50</sup>. Risk management decisions are inevitably a trade-off between the level of protection desired, the costs of reducing risk, and the weight of evidence that the risk is real. This is ultimately a matter for political judgement and responsibility.

During the course of the last few decades many commonplace risks have been eliminated or reduced, thanks to improvements in systems of social protection, environmental and health improvements and higher standards of living. However, recent years have seen the rapid emergence of new problems, many unforeseen or unforeseeable. This calls for new institutional responses. We need to improve our capacity to respond speedily to emerging risks, to speed up scientific assessment of risks (such as the risks posed by persistent pollutants or biotoxins), and to improve our capacity for dealing with crises. Most importantly, decisions on how to tackle risks that we face as consumers and citizens must be made transparently, in an accountable manner, and with the public interest at heart.

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<sup>50</sup> The Commission Communication on the precautionary principle (COM(1)2000) provides a more complete discussion of the role and scope of the precautionary principle in EU policy making.

#### **4.8 Better information, education and participation**

Improved information for producers and consumers is important to enhance the effectiveness of policies that seek to encourage changes in behaviour. Consumers can respond better to price signals and other incentives if they have relevant information, such as the cost savings they can expect from using more energy-efficient domestic appliances, or the health improvements they can expect from better diet. Information gaps can undermine the effectiveness of policy. Moreover, if we are to exercise our personal freedoms wisely and take an active part in civil society we need information about the wider effects of our choice of lifestyle on matters such as our health and on traffic congestion.

The process by which policy is made should be transparent. An open dialogue about the costs and benefits of different options will help test the arguments that underlie different policy proposals. Establishing a dialogue between stakeholders can be time consuming, but is essential to building mutual trust and understanding and may increase the chances of finding mutually acceptable solutions. The current European Climate Change Programme is a good example of a more open policy process. Sustainable development can thus become a way to revitalise the democratic process by involving citizens in decisions that affect their daily life and generating a real debate on society's priorities.

Access to high quality education and training for all ages will enable citizens to take an active part in democratic society. Our behaviour as individual citizens is not determined exclusively by strictly financial considerations. It also reflects a sense of belonging to society, of sharing a common set of social values. Providing better information to citizens about the goal of sustainability and its importance is a way of strengthening this social capital and encouraging sustainable behaviour by all.

#### **4.9 Measuring progress: indicators**

Indicators provide the basis for assessing progress towards the long-term objective of sustainable development. Long-term targets only have meaning as policy goals if progress towards them can be assessed objectively. This requires targets expressed in precise terms. Careful measurement will also improve our ability to identify interactions between different policies and deal with possible trade-offs. There are some cases when improvements in one area can only be achieved at the expense of deterioration in another. Such trade-offs are already a part of policy-making, but the advantage of measurement is that they are made explicit and transparent.

This does not mean that everything must be quantified. Quantified and measurable targets are important, but must not become the exclusive focus of policy. Indeed, some elements of sustainable development are intrinsically hard to quantify. Not everything can be turned into numerical data. This is particularly true of some environmental and social assets. We cannot easily measure the value of bio-diversity or the quality and quantity of social relationships. To avoid neglecting them we must devise better qualitative indicators.

Identifying an appropriate set of measures and indicators, both quantitative and qualitative, will not be easy given the scope of the issues addressed in this paper. Inevitably, not all the desired data will be available. It is a persistent temptation to measure what is easiest to measure rather than what is important. This has to be avoided if we are to develop robust indicators that provide accurate signals. It is more important to be roughly right (with imperfect indicators of what matters) than precisely wrong (with perfect indicators on developments of little importance).

There are a number of current initiatives to measure sustainable development. These include the indicator set drawn up by the United Nations, which will be applied at the European level in a forthcoming publication by Eurostat<sup>51</sup>, and a number of indicators for policy integration in sectors such as energy, transport and agriculture. Some local authorities are developing indicators which reflect local priorities. The World Business Council for Sustainable Development is promoting measures of corporate performance against the yardstick of sustainability.

These initiatives all have their merits, but to measure progress on the themes identified in this paper will require a more tailored set of indicators. For each theme, a small set of indicators will be needed. These must take account, where necessary, of the differences in the nature of what is being measured. The set of indicators must be wide enough to capture the complexity of each area. At the same time, the indicators must not be so complex as to be incomprehensible to policy makers and the public.

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<sup>51</sup> Measuring Progress towards a more Sustainable Europe. To be published by Eurostat in June 2001.

## 5. CONCLUSIONS

This consultation paper is the first stage in the preparation of an EU strategy for sustainable development. In it, the Commission services have set out their views on the challenges and opportunities which would be presented by making sustainable development the overarching priority of Community policy.

The paper focuses on problems of sustainable development within Europe. This approach is underpinned by a belief that to provide leadership in a global context the EU has to meet its international commitments and reform its internal policies so as to make progress towards sustainable development. Of course, the EU also has to play its full role in international organisations, such as the UN, the IMF and World Bank and the WTO, as these bodies have an important contribution to make towards sustainable development. The international dimension of sustainable development will be fully addressed in preparations for the Rio + 10 summit in South Africa next year.

To move the sustainable development debate from the realm of abstract discussion of definitions and concepts into the area of everyday policy making, the Commission services have identified six key themes where current trends threaten the sustainable development of the European Union. These themes have been chosen because of the severity and the potential irreversibility of the issues identified, because they are common to several or all Member States, and because finding and implementing solutions will be eased by co-operation.

Analysis of these topics has shown that many of the problems have their origins in a small number of shared failures. These include distorted market prices, insufficient knowledge, information and communication, and an inconsistent sectoral approach to policy making which takes too little account of linkages and spillovers between sectors. In the light of this analysis, the Commission services have proposed (in section 4 of this consultation paper) a “policy toolkit” which the Community and Member States could use to address the unsustainable trends described in section 2.

The broad nature of the priority areas will require detailed measures in several overlapping domains. The Commission services now invite all stakeholders to express their views on the issues raised in this document and to consider what more concrete measures should be included in the EU sustainable development strategy for Gothenburg.

In particular, stakeholders are invited to answer the following questions:

### Questions

1. Does focussing on a limited number of the most pressing problems help to make the concept of Sustainable Development operational? Do the six themes chosen embody the main long-term challenges confronting European society?
2. This document focuses on Sustainable Development problems in Europe. Are there any cases in which actions to place European society on a more sustainable path might make the attainment of Sustainable Development at a global level more difficult? How can reforms of EU policies support efforts to achieve Sustainable Development worldwide?

3. Since Sustainable Development is a long-term idea, it should be of clear relevance to accession countries. To what extent are the challenges they face different from those in the current Member States?
4. Do you share the analysis of the causes of these problems and their potential remedies identified here? Do you have any additions to the policy toolkit?
5. What practical measures can be taken to better translate the principle of “policy integration” into concrete action to achieve greater sectoral policy consistency?
6. Governments cannot deliver Sustainable Development on their own. Business, workers, and civil society have an indispensable role to play. How do we make this happen?
7. How can we ensure that the costs of adjusting to Sustainable Development are minimised, and the opportunities seized?
8. In what areas of Sustainable Development do you see a clear policy role for the European Union?
9. What are the most urgent steps the European Union should take in the framework of an EU Sustainable Development strategy?
10. What specific objectives would you like to see included in the EU strategy for Gothenburg? What arrangements should be foreseen to ensure their implementation?

Comments may be sent electronically at the following web site address:

[http://www.europa.eu.int/comm/secretariat\\_general/index\\_en.htm](http://www.europa.eu.int/comm/secretariat_general/index_en.htm)

Alternatively, written observations may be sent to:

Sustainable Development Task Force,  
European Commission,  
Brey 10/217  
Rue de la Loi 200  
B-1049 Brussels,  
Belgium.

The deadline for submissions is the 30th April 2001.

Based on the answers to these questions and other comments, the Commission will draw up proposals for a European Union strategy for sustainable development which it will present to the European Council at its meeting in Gothenburg on June 15-16.