13. Progress in managing the environment

The concept of integration is well known, but the degree to which it is incorporated into strategic policy-making varies. At European Union level, the Cardiff integration process has led to an increased awareness among policy-makers of the importance of harmonisation and integration, but the process has lacked urgency and has yet to have a significant impact on sectoral policy-making, let alone on improvements on the ground.

Within countries, integration is generally approached through the concept of sustainable development, via national sustainable development strategies, but the stage of development of these varies. Integration of the environment into other policy areas is far from comprehensive, and implementation in particular causes problems. The 12 countries of eastern Europe, the Caucasus and central Asia are aware of the requirements of integration but do not generally have the capacity to carry forward initiatives for drafting strategies and plans, or to implement them.

The concept of integrated coastal zone management has been spreading during the past 10 years. However, this has not kept up with growing pressures, especially on the Black Sea, southeast Mediterranean and Caspian Sea coasts.

Urban planning is a major area for integration, but innovative policies including stronger linkages to other policy areas are needed to overcome the many pressures towards unsustainable spatial development. There has therefore been a growing emphasis on integration of planning with sectoral policies, an ecosystems approach, and better institutional support mechanisms including procedures to improve public and stakeholder participation.

Market mechanisms are increasingly seen as tools of integration policy alongside more traditional regulatory mechanisms. Some accession countries and countries in transition economies have a history of using market mechanisms, but others do not. Overall, only very limited steps have been taken towards ecological tax reform.

Integration cannot be achieved solely by governments and other public sector bodies: a commitment from industrial and commercial sectors is also needed. There was a significant increase in interest in voluntary 'green' business initiatives in Europe in the 1990s, mostly by companies in EU countries and multinational organisations. These include negotiated agreements and self-commitments, eco-labelling, and environmental management and reporting.

Useful sector-specific strategic environmental assessment experience has developed in some countries, but this cannot necessarily be duplicated for other sectors or countries because of the different issues, institutions, legal frameworks and stakeholders involved. Strategic environmental assessments need to be integrated with other requirements, such as sustainability appraisals.

13.1. Introduction

The 1995 Environmental Programme for Europe recommended that participants should integrate environmental considerations into all decision-making processes, taking into account environmental costs, benefits and risks, applying the precautionary and 'polluter pays' principles, and promoting partnerships between government, parliaments, businesses and non-governmental organisations (NGOs).

A first step is to adopt adequate strategies and policies both in the international arena and at the national level to ensure that environmental considerations are integrated into all policy sectors. Progress towards this end is described in Section 13.2, giving some subregional examples, which often provide a context for efforts at the national level. The focus, however, is on the wide array of new approaches and tools to reach harmonisation and integration at the national level.

But adopting integrated strategies and policies alone is not enough. The next step is to ensure that such integrated plans are indeed implemented, that actual results can be seen on the ground. Considering the complexity of ecosystems and societies, specific approaches to integration may be required in the management of specific sectors, regions or types of region. Section 13.3 gives two examples of progress in the development of integrated planning and management instruments in specific types of area (coastal zone management) and sector (urban development).

In general, integration requires an ability to deal with complexity in a flexible way, addressing all segments of society. Hence traditional legislative instruments are not really sufficient to achieve integrated development. A growing pool of policy measures is being applied, which reflects the realisation that full integration cannot be achieved by government action alone. Partnerships between government institutions, economic actors and civil society at large are needed, as well as initiatives by specific stakeholders. Such partnerships often reach across national boundaries, requiring intensive transboundary cooperation between different governments and institutions. Harmonised approaches, data and information will facilitate mutual understanding and communication, and thus cooperation, among the wide variety of actors involved in integrated development. Section 13.3 illustrates the range of policy instruments currently being applied in both public and private sectors.

Box 13.1. Key European initiatives promoting integration

Regional conventions (excluding the many subsequent protocols)
1979 Convention on Long-Range Transboundary Air Pollution (CLRTAP)
1991 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo)
1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes
1992 Convention on the Transboundary Effects of Industrial Accidents
1998 Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus)

Other regional initiatives
1995 Environmental Programme for Europe (UNECE)
1998 The Pan-European Biodiversity and Landscape Diversity Strategy (PEBLDS)
1999 London Charter on Transport, Environment and Health

Subregional conventions
1992 Convention on the Protection of the Marine Environment of the North-East Atlantic (OSPAR)
1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area (HELCOM)
1992 Bucharest Convention on the Protection of the Black Sea against Pollution
1995 Revision of the Convention on the Protection of the Mediterranean Sea against Pollution; implemented through the Mediterranean action plan (1979 Barcelona convention)
1995 Convention on the Protection of the Alps
1998 Danube River Protection Convention
2001 (adopted) New Convention for the Protection of the Rhine

Other subregional initiatives
1993 Environmental Action Programme for Central and Eastern Europe (EAP)
1994 Environmental Performance Review programme of UNECE for countries in transition
1994 MED 21 (Mediterranean)
1995 Regional Environmental Centre for Central and Eastern Europe (REC); followed by RECs for the Russian Federation, Ukraine, Republic of Moldova, the Caucasus and central Asia
1997 Vienna Programme of Joint Action on Transport and the Environment
1998 Baltic 21
1998 Caspian Environment Programme
1998 EU Cardiff process (see details below)
1998 Nordic Strategy on Sustainable Development
1998 Central Asian Interstate Council on Sustainable Development
1999 Stability Pact for South Eastern Europe

13.2. Integration of environmental considerations into strategies and policies

Most national efforts towards integration are not isolated actions but take place in the context of international processes. These range from the global level (such as the global conventions dealing with climate change and with biodiversity, the Rio conference on environment and development and the Johannesburg summit on sustainable development) to the subregional level (for instance for a particular river basin). Section 13.2.1 outlines the key regional or subregional processes and initiatives which aim to stimulate or achieve harmonisation and integration. Section 13.2.2 summarises progress in harmonisation and integration at the national level.

13.2.1. Integration at the subregional and regional level

At European level, the 'Environment for Europe' process has been very important in facilitating regional cooperation by promoting harmonisation and integration of the environment into other policies. Chapter 6 of a recent UN publication (UNECE/UNEP, 2002) summarises the achievements of the Environment for Europe process and progress in the development of regional conventions as tools for harmonisation and integration. Box 13.1 lists key regional and subregional conventions and other initiatives relevant to harmonisation and integration of environmental considerations into other policies, which are detailed in the UN report.

The report states that in Europe 'a great deal of harmonisation and integration has got its start through consideration of transboundary environmental issues, such as industrial accidents and air pollution. Significantly, there has been a shift in the region during the last few years towards improving compliance with multilateral environmental agreements, especially with respect to UNECE conventions. Also ratification of significant global agreements is high in the region, and fairly balanced among the subregions. However, ratification and implementation are affected by both environmental and economic problems within states' (UNECE/UNEP, 2002). In

another recent UN report on lessons learned through the Environmental Performance Review programme, interesting details are given on progress in harmonisation and integration in central and eastern Europe (CEE) and the 12 countries of eastern Europe, the Caucasus and central Asia (EECCA) (UNECE, 2002). Some details are given below for the European Union (EU).

At the EU level, the requirement to integrate environmental concerns into other policy areas has been incorporated into the Treaty that forms the basis of the Union, thus making it one of the guiding principles of the EU. Article 6 of the Treaty establishing the European Community states that: 'Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities'.

As a contribution to implementing this requirement, the Cardiff process was initiated at the European Council in Cardiff under the UK presidency in June 1998. This called on key meetings of the Council of Ministers (e.g. for transport, agriculture, fisheries) to develop their own strategies for integrating environmental concerns into their respective policy areas. EU heads of state and government, to whom regular reports are made, oversees the Cardiff process. Nine strategies are currently in place or under development, and these are at various stages of elaboration (presented in waves in Table 13.1).

Evaluations of the Cardiff strategies (IEEP, 2001a; 2001b) have revealed that:

- none contained all of the elements that one might expect a 'strategy' to comprise (such as objectives, measures, indicators, timeframes and review mechanisms);
- some aspects of strategy formulation were more fully developed, or at least under development (e.g. indicators), than others (e.g. specific targets);
- the strategies did not contain many new measures.

On balance, the transport strategy is the most developed strategy, and has two notable integration mechanisms, which play an important role in its development. A joint expert group on transport and environment, which is chaired by the Commission and incorporates national transport and environment officials, oversees the transport integration process. Additionally, the transport and environment reporting mechanism (TERM) has been developed by the European Environment Agency (EEA) and the Commission to monitor the impact of the strategy.

Further indicators are being developed to monitor other sectoral strategies, with targets and timetables for instance now elaborated for fisheries integration policy (CEC, 2002). In addition a set of 'headline indicators' to cover all aspects of sustainability is under development. These indicators are meant to be used by heads of state and government to monitor the EU's progress.

The development of the Cardiff strategies has been accompanied by a number of other integration mechanisms within the European Commission, such as the creation of special units dedicated to environmental matters in several of the Commission's directorates general. There is also a system of undertaking ex ante environmental appraisals of Commission proposals, which was introduced in 1993, but which the Commission itself acknowledges has not yet worked well.

Overall, the Cardiff process and other Community initiatives have been useful, despite the relatively modest progress. In particular, the Cardiff process has raised awareness of Article 6 and its requirements among a broader range of decision-makers. However, integration initiatives have as yet had a relatively minor impact on the political agenda, as they have not commanded sufficient political will to address some of the fundamental problems that still exist. Where integration has progressed, it has been largely as a result of more pressing political problems, such as the Kyoto protocol or the Millennium Round of the World Trade Organisation (WTO). Establishment of minimum requirements for implementation and follow-up of integration strategies has yet to be taken forward (Ecologic and IEEP, 2002).

In the EU, the Cardiff and other integration processes have raised awareness of environmental issues, but have not yet had a decisive effect on sectoral policies.

An evaluation of the Cardiff strategies Table 13.1.

Criteria for strategy analysis	First wave councils			Second wave councils			Third wave councils		
	Agriculture	Energy	Transport	Development	Industry	Internal market	Economic and finance	General affairs	Fisheries
Strategy content									
Scientific/research basis for formulating problem	-	-	-	-	-	-	-	-	-
Problem formulation	•	/	/	•	•	/	•	•	•
Risk assessment and option appraisal	-	-	•	-	-	•	-	-	-
Aims/objectives/guiding principles	/	/	•	/	/	/	•	•	/
Targets	•	-	/	-	-	•	-	-	•
Measures/actions — including beyond existing commitments	/	/	/	/	/	/	•	/	/
Recognition of the extra-Community/global dimension	•	•	/	/	/	•	/	/	/
Reference to other relevant EU/international policy agendas	/	/	/	/	•	•	•	/	/
Resource implications	-	-	•	/	/	•	•	-	-
Timetables	/	/	/	•	•	•	•	•	-
Procedural characteristics									
Roles and responsibilities for ensuring implementation	/	•	•	/	/	/	/	/	•
Monitoring and review arrangements	/	/	•	/	•	•	•	•	-
Indicators — extent and nature	/	/	•	•	/	/	/	•	•
Reporting mechanisms/requirements	•	/	/	/	•	•	•	-	-
Future milestones	•	•	/	•	•	•	/	•	•

Note: •: little attention to this aspect /: some effort to address this aspect, but incomplete •: relatively full treatment of this aspect

Source: IEEP, 2001 b

13.2.2. Integration at the national level

Transboundary initiatives are often put in place as a result of the initiatives of a few countries with societies that are developing in an innovative way. At the same time countries are stimulated by such international action to take up the cause of harmonisation and integration within their own boundaries. Indeed, countries all over Europe have adopted or are in the process of adopting specific approaches (usually a mixture of different approaches) to better coordinate and integrate sectoral policies and relevant governmental decisions with the principles of sustainability. Box 13.2 describes three such approaches to sectoral integration. Neither geographic nor economic characteristics can fully explain the variations in approaches. For example, among western European (WE) countries, Austria, Finland, Italy, Norway and Switzerland have established sustainable development coordination structures, but Denmark, Germany, Spain and Sweden have not. Among EU accession countries, the Czech Republic, Estonia, Hungary, Poland and Slovakia have, but Latvia, Lithuania, Romania and Slovenia have not. In EECCA, such bodies have been established in Belarus and Uzbekistan but not, for instance, in Armenia or Tajikistan. In a very few countries, an implementing agency has been established, such as the National Environmental Centre for Sustainable Development in Kazakhstan.

Box 13.2. National approaches to integration

A *coordination approach*, based on the creation of broad inter-ministerial committees, commissions, working groups and task forces. For example, the United Kingdom has established a Cabinet committee of 'green' ministers, supported by civil servants in each department. Poland set up the National Commission for Sustainable Development in late 1994 to coordinate and facilitate governmental activities towards integration of economic, environmental and social aspects. France has created an inter-ministerial steering group to coordinate 'greening of government' activities.

A *strategic approach*, based on the development of a shared agenda with the government through sustainable development strategies, policies and executive programmes. This approach is common throughout the region, particularly after the Lucerne ministerial conference 'Environment for Europe', and very often connected to 'coordination' and 'structural' approaches.

A *structural approach*, based on integration of sectoral policies into 'mega-ministries'. Examples of this approach include, in the United Kingdom, the Department of the Environment, Transport and Regions; in Poland, the Ministry of Environmental Protection, Natural Resources and Forestry; in Belgium, the Ministry of Social Affairs, Public Health and the Environment; and, in the Netherlands, the Ministry of Housing, Physical Planning and the Environment.

Source: UNECE/UNEP, 2002

At western European national level, the strategic framework for integrating environmental considerations into other sectoral policy areas has been primarily through national sustainable development strategies (SDSs) (see also Box 13.2), which have either been finalised or are in draft form. These strategies seek to integrate sustainable development concerns, i.e. including the environment alongside economic and social considerations in policy-making, and often focus on sectors such as agriculture, industry, transport and energy. Most are of quite a high standard, in that they address the main requirements of a policy strategy, i.e. objectives, measures, indicators, timetables and follow-up.

In most countries, a cross-departmental committee of some description has been set up to contribute to the development of the SDS, while in others, a commission or council has been established to monitor progress towards sustainable development.

In western Europe, national SDSs are accompanied by various sectoral policy documents which have been developed to steer more detailed policy action. These are also at varying stages of development and address particular sectors, e.g. transport and energy, or particular environmental problems, e.g. waste or water.

The Nordic countries in particular have good experiences with the integration approach. Norway, for example, considers the integration of environmental concerns into sectoral policies as vital in order to achieve overarching environmental policy goals. To this end, the government plans to 'clarify the sector's responsibility for achieving environmental policy goals through sectoral environmental action plans' and to set up a national monitoring system (Ministry of Environment, Norway, 1997). The Netherlands and Denmark also follow this approach, but such coherent strategies are not universal.

In the CEE countries, the integration process is still at a relatively early stage. Environmental policy is set out in national environmental strategies that sometimes take the form of national environmental action plans (NEAPs) or national environmental and health action plans (NEHAPs). Beyond this, attention in many countries is now turning towards the development of national SDSs, which, again, may be accompanied by the formation of a national sustainable development commission. In Poland, for instance, such a commission was already set up in 1994.

Integration in the CEE countries is addressed mainly in a rather fragmented way. Implementation, monitoring and follow-up are difficult to ensure. The Croatian Government, for example, has recognised that there are no legal obligations that call for the environment to be addressed in the preparation of sectoral policies. Nevertheless, sectoral strategies and plans are developing. These typically cover industry, energy, agriculture, transport and tourism.

Some instances of good cooperation between environmental and other ministries are reported, but the practical impacts of integrated sectoral strategies and policies are still not materialising. Coordination is often lacking, as a result of limited organisational and administrative resources (von Homeyer, 2001). Such resource constraints also weaken integration at the regional and local levels (von Homeyer, 2002). Nevertheless, awareness of the need for integration and a willingness to pursue it is quite high

At western European national level, integrative processes have raised awareness of environmental issues and integrated strategies are often in place, but they have not yet had a decisive effect on sectoral policies, let alone on actual implementation.

throughout CEE. The EU accession process reinforces this requirement. Accession countries are already adopting the environmental and other requirements of the body of EU law, and will be bound by the integration requirements of the Treaty when they join the EU in 2004 (see for example Box 13.3).

For EECCA, the integration of environmental considerations into other policy areas is happening at a significantly slower pace than elsewhere in Europe, as a result of the difficult transition process away from centrally planned economies. Priorities are for the time being on economic development. There has, however, been some progress, for example in Kazakhstan (Box 13.4). Georgia has launched a programme on socio-economic restructuring and economic growth, which consists of various pre-existing strategies, focusing for example on industrial development. The programme is geared towards the introduction of an integrated and effective economic system, but although it includes measures concerning the environment, these are not a central priority.

The regulatory and enforcement structures in EECCA are still very weak as a result of a lack of financial resources or of capacity to utilise effectively those resources that are available. Even where institutions have a real commitment to achieving environmental objectives, as in the case of Kazakhstan's NEAP and NEHAP, their weak position within government and their resource constraints hinder effective integration.

Box 13.3. Sectoral integration in the Baltic countries

Of the EU accession countries, Estonia is among the front-runners in integrating environmental considerations into agricultural policy. National agri-environment measures were implemented in pilot areas in 2001 with state funds. Payments to subsidise conversion to organic agriculture have been available since 2000, and now nearly 2 % of the agricultural area is certified as organic. Training programmes on environmental issues for farmers and farm inspectors have been taking place since 2000.

A code of good agricultural practice for Latvia was prepared by the Ministry for Environmental Protection and Regional Development and the Ministry of Agriculture, following EU requirements and HELCOM recommendations. Most of the aspects of the code will be obligatory for farmers operating in ecologically sensitive zones and for farmers using assistance within the framework of special accession programmes for agriculture and rural development (SAPARD). The law on pollution will regulate big farms, since they fall under integrated pollution prevention and control requirements.

The national energy strategy of Lithuania, approved in 1999, reflects the requirements and guidelines of the European Association Treaty, the Energy Charter Treaty and other international agreements in the field of energy such as the principles of the energy policy of the European Union and its Member States. One of the main priorities in the strategy is the reduction of the negative impact of the energy sector on the environment, including nuclear safety requirements.

Source: Laansalu, 2001; Mikk, 2001; UNECE, 2000a and 2000b

Box 13.4. Environment and health plan in Kazakhstan

National environment action plans (NEAP) and national environment and health action plans (NEHAPs) provide an opportunity for looking at environmental and health issues from a cross-sectoral perspective, and for identifying priorities and areas for action on the basis of a broad consensus of stakeholders. Some interesting experiences are evolving in Kazakhstan.

There are health risks in the country from past and present man-made environmental causes, such as radiation, the Aral Sea disaster and traffic-related air pollution. However, environmental mortality and morbidity seem to be related more to such issues as drinking-water quality, food quality and nutrition.

While the NEAP deals with environmental issues related to past and present industrialisation and pollution prevention, the NEHAP deals more specifically with sanitary-hygiene environmental issues related to current human health problems. Taking both plans together, the most important topics in environmental health in Kazakhstan are drinking-water quality, sewage disposal and personal hygiene; food quality and nutrition; radiation safety; and ambient air quality in large cities.

Source: UNECE, 2000c

13.3. Implementation of integrated development strategies and policy

As is clear from the above, the intentions and strategic actions taken in most parts of Europe to achieve integration of environmental considerations into other policy are certainly moving in the right direction. However, truly integrated development is only beginning to be implemented, for example in integrated coastal zone management (Section 13.3.1) and urban planning and development (Section 13.3.2). Section 13.3.3 gives other examples of integration policy instruments that are beginning to work.

Integration is advancing in the countries of central and eastern Europe and those of eastern Europe, the Caucasus and central Asia, but more slowly, particularly in the latter, than in western Europe, owing to resource limitations and competing priorities.

13.3.1. Integrated coastal zone management

Europe's coastal zones are of great economic, environmental, social, cultural and recreational importance. For example, after tropical forests, the areas on Earth with the highest biodiversity are coastal zones. However, a range of pressures, including population growth, and increased shipping,

industrial and tourist activity, threatens Europe's coasts. The effects of climate change, in particular rising sea levels and increased storm frequency, have increased coastal erosion and flooding. Meanwhile, the decline in fish stocks and fishing activity, and oil transport and spill accidents, have also made many fisheries-dependent areas particularly vulnerable (see Chapters 2.7 and 8).

Integrated coastal zone management (ICZM) seeks to manage such multiple pressures in a way that is environmentally sustainable, economically equitable and sensitive to local cultures. ICZM is an iterative, proactive and adaptive process to plan and manage coastal areas with a view to sustainable development. It encompasses a range of approaches, which together demonstrate:

- the need for authorities at different levels of administration to cooperate amongst themselves and with stakeholders;
- the establishment of a participation process with all the actors from the beginning of the project;
- implementation of transparent procedures, from an environmental audit to the design of an action plan with local communities involved;
- an agreed work programme with an agenda, concrete objectives and a balanced budget.

From the mid-1980s, significant efforts have been made in Europe to develop and apply ICZM principles. Organisations for the regional seas have played a key role in this development. Often there is a mixture of international strategies and agreements and more local level management and implementation. Interestingly, in such programmes countries are grouped using the natural boundaries of shorelines (eco-zoning) rather than applying administrative boundaries and political groupings. For Europe this means:

Regional sea	**Subregional groupings**
Atlantic	EU
North Sea	EU
Baltic	EU, northern CEE, EECCA
Mediterranean	EU, southern CEE, northern Africa
Black Sea	Southeastern CEE, EECCA
Caspian Sea	EECCA

Within the EU, a May 2002 recommendation on ICZM calls upon Member States to produce their own national ICZM strategies on the basis of a stocktaking of the pressures and administrative structures influencing the evolution of their coastal zones. This followed an EU ICZM demonstration programme involving 35 pilot projects around western Europe's coastline. Box 13.5 summarises some applications of ICZM tools in the EU.

The following are the key regional sea initiatives in Europe; Table 13.2 shows the extent to which these have used ICZM-related development tools.

The Mediterranean action plan (UNEP/MAP) was the first programme to formulate its own subregional Agenda 21, which emphasised the need for integration and partnerships. A key feature of the Mediterranean is the large number of bordering countries (more than 20) from three continents (Europe, Asia and Africa), with different cultures, religions, political organisations and socio-economic situations. Since 1989 the Programme of Integrated Coastal Area Management has developed management projects on the Albanian and Syrian coasts, in Croatia (Kastela Bay), Greece (Rhode Island), Tunisia (Sfax) and Turkey (Izmir Bay), Egypt and Israel. Projects in Algeria, Lebanon, Malta, Morocco and Slovenia have followed. However, the impressive ICZM efforts have not yet been sufficient to stop major environmental problems arising from highly concentrated pressures such as urbanisation and tourism.

The North-East Atlantic and Baltic Sea conventions, OSPAR and HELCOM of 1992, have promoted strategic and integrated planning, using management tools such as Local Agenda 21, in addition to specific ICZM projects. Under both conventions, strong commissions have been vested with powers to make recommendations for the adoption of specific legislative measures to be taken by the Party states. Both initiatives have been successful in developing dynamic networks between the countries and civil society. In addition, HELCOM has achieved much in balancing the environmental differences between West and East. Financial assistance from the wealthier EU states around the Baltic to the others is an important key to this, and to the anticipated future success of the programme. At least partly as a result of these efforts, there have

been improvements in several aspects of water quality in North Sea coastal waters. For the Baltic region, it is estimated that the environmental quality that prevailed in 1950 will be regained in 2050, if the current pace of improvements is maintained.

In the Black Sea, the Black Sea Commission secretariat has coordinated ICZM actions at the subregional level. Due to well-developed landscape research and the long tradition of centralised planning, ICZM development has a strong territorial planning component. It is, however, intended to build on experience and results from other regional seas, including strengthening bottom-up participation involving local communities and NGOs. Unfortunately, the Black Sea countries do not have the same kind of financial support as their counterparts around the Baltic. The lack of economic capacity to manage the pressures on the Black Sea coasts remains a major obstacle to success.

In the Caspian Sea, the Caspian Environment Programme was launched in 1998, supported by the littoral states (Azerbaijan, Iran, Kazakhstan, the Russian Federation and Turkmenistan), the Global Environment Facility, UNEP, the World Bank, the EU and growing participation of the private sector. One of the tasks of the Caspian Environment Programme was to prepare the Framework Convention for the Protection of the Marine Environment of the Caspian Sea. A major stumbling block in the implementation of the programme has been differences between the littoral states over ownership and development rights in the sea. The potential oil and natural gas wealth, along with the associated environmental risks of resource development, have heightened the stakes for each country. And,

Box 13.5. Application of integrated coastal zone management tools in the EU

- Germany, the Netherlands and Denmark have developed joint, cross-border management plans to protect specific natural areas in the Wadden Sea.
- Some of Spain's Local Agenda 21 activities focus on coastal municipalities and coastal regions. Examples are Costa de Janda in Andalucia, and the Maresme coast in Catalonia, where the Diputacion of Barcelona has created a municipality network for sustainable development.
- The French Conservatoire du Littoral et des Rivages Lacustres has acquired large stretches of coastal natural areas, to be managed by local and regional bodies applying ICZM principles.

Development of tools related to integrated coastal zone management by regional seas Table 13.2.

	Atlantic	North Sea	Baltic Sea	Mediterranean Sea	Black Sea	Caspian Sea
National legal and juridical instruments	XXX	XXX	XX	XXX	X	-
Development of management plans (dunes, beaches, estuaries, islands, denominated areas, etc.)	XXX	XXX	XX	XXX	X	-
Protected coastal areas (e.g. natural parks) linked with local development programmes	XXX	X	XX	XX	X	X
Local Agenda 21	XX	XX	XXX	XXX	X	-
Strategic/regional coastal planning involving cooperation between stakeholders, authorities and sectors	XX	XX	XXX	XX	X	-
Concerted actions with sectors and populations (to lower emissions, or pressures on land)	XXX	XX	XXX	XX	X	-
Coastal land acquisition managed by different local bodies	XXX	XX	X	XX	-	-
ICZM demonstration projects	XXX	XXX	XX	XXX	X	X
Integrating science and information	XXX	XXX	XXX	XXX	XX	-
ICZM formation and training	XX	XX	XX	XXX	-	-
ICZM evaluation	XX	XX	XX	XXX	-	-

Note:
XXX: fully implemented.
XX: partially implemented.
X: partially used.
-: not used.

Source: EEA


The concept of integrated coastal zone management has been spreading around European coastlines for 10 years, but implementation has failed to keep up with growing environmental, financial and political pressures.

as with the Black Sea convention, lack of economic capacity will hamper implementation even further.

13.3.2. Urban planning and development

At a more local level than ICZM, there have been interesting developments towards harmonisation and integration in urban planning. Urban planning is a vital tool for intervention to shape a sustainable future, protect and enhance the environment, and improve the quality of life. Indeed, policies and plans for urban development commonly make explicit commitment to the principles of sustainable development. Implementation of environmentally sustainable spatial planning, however, is clearly more difficult.

The reasons lie in the planning systems themselves and in continued pressures for unsustainable development, especially between and at the peripheries of urban areas. Substantive urban planning actions, such as innovative urban renewal and transformation, and ecosystem approaches to the use and management of land, remain fragmented and partial, without full political support at all levels of government. Market forces (both corporate and individual private interests) are still powerful determinants of spatial patterns. Currently, policies focus less on the direct implementation of plans by the public sector, and more on spatial frameworks to ensure that the private sector delivers sustainable outcomes. Even in countries with well-established planning institutions, these frameworks do not determine all development: national interests (especially for economic development) sometimes over-ride local controls. Where planning institutions are weak or unsupported, unregulated development can occur. In some countries, these issues are compounded by the shift from highly regulated economies to more market-based systems, with the consequent pressures of privatised land use, newly privatised mobility, and the need to attract inward investment. Despite the difficulties, examples from cities and regions all over Europe reveal many innovative policies and practices, and newly designed spatial planning systems that integrate urban land-use management and environmental issues. Distinctive national systems of planning are changing and inter-mixing, and experiences, including the approaches discussed below, are being shared across the continent. City leaders talk to each other even without waiting for clearance from national or regional governments. Cities like Lyon, Geneva and Turin get together to see how their Alpine corner of Europe can keep its wealth while protecting its common mountain environment.

Integration of urban planning with other sectors and policy areas

A significant change in spatial planning during the 1990s was the recognition that isolated physical planning responses to urban problems are insufficient. Urban planning needs to be integrated with other interventions, and with social and economic policy. Large-scale projects and smaller-scale public interventions to refurbish public spaces, open up waterfronts and reclaim road space for pedestrians or cyclists have acted as catalysts for wider urban regeneration, investment and cultural renaissance. Positive planning policies to direct development and investment to damaged or derelict urban land are also important in urban transformation, especially where they operate in tandem with other regulatory, development and financial agencies: Tallinn, for instance, is recovering its Hanseatic glory as a Baltic trading centre. Places like Marseilles, Barcelona and Liverpool are converting their once run-down red-light port districts into new hubs linking people to the sea.

There has been a shift of focus from central areas to the relatively marginalised or peripheral communities. Successful projects such as that in Vienna (Box 13.6) show the benefits of integration with social and economic interventions, such as in the housing market and in community capacity-building, with clear political commitment and integration across different institutions.

Another incentive for integrated planning is the need to address closely related urban problems (such as traffic volumes, community severance and air pollution), which together diminish urban quality of life and endanger health. Members of the World Health Organization (WHO) Healthy Cities Network adopt a combination of key objectives and planning actions as a solution. Examples

include urban planning for safe and convenient environments that encourage walking and cycling to work, shops, school and other facilities to promote health and exercise, and that ensure provision for market gardens, allotments, local markets and diverse retail facilities to meet the objectives of local, low-input food production.

There is some evidence that such policies have been successful in revitalising cities, generating increased investment, and stemming urban decline. However, the problems of displacement of certain groups by higher land values, and of unequal access to the benefits of new investment, remain serious.

Ecosystems approaches
Spatial planning decisions also need to respect biophysical and environmental resources essential to sustain human quality of life. There are many indications that the urban planning system is adopting a broader, more holistic view, and is paying regard to resource flows (such as energy, materials and water). But there are very few examples of a fully eco-centric plan, using concepts of critical natural capital or carrying capacity, being implemented. However, many urban plans do now require that developments meet standards for biodiversity protection and enhancement, flood risk avoidance, and water, energy and materials efficiency (see, for example, Box 13.7 on Hanover).

Another example is of a more holistic approach that pursues a greater degree of food self-reliance by producing more food locally, especially fruits and vegetables. Traditional horticultural food production in urban areas has largely disappeared in WE, apart from some recreational gardening, but in CEE and EECCA subsistence food production in and around cities has increased as the output from the large old collective farms has decreased. Such urban vegetable and fruit production has positive impacts on local employment and local economic growth, and results in lower cost of local foods, enhanced access to healthier food, closer links between consumers and producers, and greener, healthier cities.

There are similar developments in WE. In Sweden, for example, new buildings are planned with composting facilities, and municipally owned city farms use this compost, so contributing both to a reduction of the environmental impact of waste and to social cohesion and local economic growth.

Box 13.6. Urban renewal scheme in Vienna, Austria

In Vienna, an urban renewal scheme was aimed at social renewal. It did so through the use of criteria such as avoiding segregation or forced change of ownership, renewal of occupied stock with the tenants' participation, the use of targeted subsidies (to avoid displacement of local occupants), and using a city block approach to ensure cohesiveness and participation. This has enabled the scheme to combine improvements to the flats and other buildings with improvements to the wider living environment, through provision of green space, traffic calming, preservation of small businesses and the provision of social services.

Source: Dubai awards, 2000

Box 13.7. The integrated urban water policy of Hanover, Germany

In Hanover, water policy is guided by the principles of sustainable development, and the aims of a secure water supply, permanent protection of groundwater and surface water reserves, and water conservation. This is done through:

- rainwater absorption: since 1994, every development plan submitted for approval must address the feasibility of absorbing rainwater on site rather than channelling it into the drains;
- rainwater exploitation: the use of rainwater rather than the municipal water supply, and therefore the installation of rainwater collection systems, is encouraged through financial incentives;
- ecological restoration of waterways;
- tertiary water treatment.

Source: ICLEI

Institutional planning frameworks
Local Agenda 21 has emphasised the importance of community participation (such as two-way community and stakeholder participation and active involvement) leading to new approaches in those countries where planning lacked such a tradition, and new techniques elsewhere (such as visioning exercises). Most of the examples given above rely heavily on community participation in one form or another. In the 10 years since the Rio summit, many urban planning initiatives have drawn on the Local Agenda 21 visions or strategies adopted by local communities, which have generated greater political support. This is especially the case in WE and the accession countries. In Majorca, for example, these principles are being used to change the whole direction of spatial policy (Box 13.8).

In many EECCA countries, the responsibility for preparing and adopting plans for urban development, within the framework of a national plan, falls to federal authorities. However, there are overlapping jurisdictions, and vertical and horizontal integration is difficult. Municipalities are often small and numerous (in the Russian Federation, for example, there are more than 13 000 municipalities), with little planning expertise. And these countries in transition

Box 13.8. Local Agenda 21 and spatial planning in Calvia, Spain

In the early 1990s, the town council of Majorca began a series of programmes which resulted in 1995 in a decision to promote a new, long-term strategy aimed at retargeting tourist and local development in accordance with sustainability principles, with the environment seen as a key for the future.

This process initiated Calvia's Local Agenda 21, which in turn has led to the adoption of its new general plan, which breaks with the previous model in:

- reducing the expected population and hence the amount of building land allowed;
- fostering the protection of rural areas and promoting urban regeneration;
- adopting new eco-responsibility regulations (on bio-climatic adaptation, separation of waste and building materials, etc.).

Implementation is through clearing of buildings and rationalising land use and infrastructures, and linking the tourist eco-tax at regional level to local and regional funding to support land purchase.

Source: Ajuntament de Calvia, 2000

Box 13.9. The national plan of spatial development in Belarus

In Belarus, a national plan of spatial development was approved by the Council of Ministers in February 2000, and work on regional level plans is progressing. Master plans for half the urban settlements have been approved since 1990 (with a plan date of 2010). However, many problems remain:

- lack of legal and normative bases for public participation in plan making or development control;
- poor integration of planning programmes with mechanisms for providing compensation or amelioration arising from planning decisions;
- shortage of funds for urban planning documentation, causing delays and poor implementation.

Source: VASAB, 2000

from centrally planned economic and political systems have little history of community autonomy or public participation in the physical planning process. In the Russian Federation, these problems are compounded by the pressures of internal migration from the east to the western cities of the country (Traynor, 2002; Artobolevskiy, 2000).

Nevertheless, there is enthusiasm for change, recognising the importance of integrating environmental protection into democratically approved plans, and for sharing of experiences with other countries of WE and countries in transition. For example, VASAB 2010 (Vision and strategies around the Baltic) is a project to promote urban systems and urban networking in the Baltic Sea region, ultimately to promote a joint spatial development perspective. Working with other international initiatives such as Baltic 21 (a Regional Agenda 21), and the EU's Interreg II, Phare and Tacis programmes, VASAB links spatial (urban settlements, infrastructure and non-urban areas) and institutional elements (planning systems and procedures). Box 13.9 describes such a development in Belarus.

Experience shows clearly that urban planning polices that do not have the support or approval of local communities risk ineffective implementation and loss of trust in planning decisions. However, bottom-up involvement is not likely to be sufficient to achieve sustainable development (Naess, 2001). All stakeholders need to be involved, ranging from various government levels to the business community and the local public. Ecologically defensible land use and resource consumption require a real break with business-as-usual lifestyles. A good example of urban development where the three approaches singled out above are combined (integration of different sectors, an eco-system approach and Local Agenda 21 with strong local level partnerships) is described in Box 13.10 for the city of Malmö.

In the EU, many of the good practices identified above are being networked and shared among planning authorities at various levels and in many countries.

Although there have been substantial obstacles in the EU accession countries to moving towards more integrated and environmentally sound urban planning systems, a number of towns and cities are pursuing good practice. Many are networking and adopting measures to integrate physical, social and economic planning, to take on board ecological principles, and to make use of appraisal tools and participative processes. A survey of 12 towns in the Slovak Republic, for example, revealed that a variety of different approaches to planning were being applied (author's data).

In EECCA, it has proved difficult to shift from a physical planning tradition to a more holistic spatial planning approach, integrated with other economic sectors and policy regimes, and working within environmental constraints. However, countries such as Belarus, Ukraine and the Russian Federation are setting up new legal frameworks and systems for urban plan preparation and adoption, and for land privatisation and reform. The strengths of these new systems lie in their familiarity with setting strategic aims, a firm policy framework, technical expertise, a high degree of education and a learning culture. The weaknesses remain a static approach to plan documentation, with little attention to

implementation, and a tradition of monitoring without evaluation (Wernstedt, 2002).

13.3.3. Other integration policy instruments

Since the early 1970s, when environmental issues began to appear on political agendas, many regulatory instruments have been put in place, mainly following command-and-control rules (polluters have to pay and governments have to monitor enforcement and impacts). Technological progress played a major role in the development of such instruments. It has facilitated reduced consumption of energy, water and minerals, and the increased application of recycling, material substitution and use of renewable resources. This section, however, focuses on newer policy instruments that have been introduced in more recent years in the fight against environmental degradation: economic instruments and economic integration, voluntary approaches and environmental assessments.

Economic instruments and economic integration

In the past decade, market-based (economic) instruments such as taxes, charges and emission-permit trading systems have increasingly been applied to offer greater flexibility, and sometimes more cost-effective solutions, than traditional instruments such as individual environmental licences or generic rules and standards. Subsidies, sometimes financed from the revenues of charges, can also be used to encourage environmentally beneficial behaviour or reduce environmental damage.

Environmental taxes and charges

Environmental taxes and charges have become mature instruments in the instrument mix available to policy-makers, and have been increasingly implemented since the1980s. (Table 13.3.) The use of these instruments has been tied to the polluter pays principle as they internalise the external costs (see Box 13.11) of the pollution that results from production or consumption activities. These external costs can be significant and environmental taxation can help to correctly internalise these costs in market prices of goods and services.

Taxes and charges have historically been applied on a one-by-one basis — as a choice for meeting particular objectives. However, in many countries they are increasingly being applied within a general strategy of environmental tax reform (ETR) and more recently of ecological fiscal reform. The former only addresses taxes and charges, whereas the latter also includes the reduction of environmentally harmful subsidies. Since the first ETR in the early 1990s in the Nordic countries and the Netherlands, more countries (e.g. Germany and the United Kingdom) are looking at a broad strategy of shifting the tax base, lowering labour taxes and increasing environmental and natural resource-use taxes. The aim is to improve the functioning of markets and shift the tax burden from 'goods' (e.g. employment) to 'bads' (e.g. environmental damage).

Box 13.10. Sustainable urban development in the city of Malmö, Sweden

The municipality of Malmö launched two integrated projects to transform the western harbour of Malmö from a polluted wasteland to an ecologically leading-edge example of sustainable urban development. In doing so, it took into account its Local Agenda 21 action plan, the comprehensive plan for Malmö 2000, its environmental programme and its 2001 gender equality plan. Key characteristics of the projects were:

- partnerships between local authorities, local housing companies and the local community;
- new and rehabilitated housing, including for people with special needs (such as the elderly and students);
- cleaning polluted soil and better maintaining green spaces;
- better infrastructure for traffic, energy, waste and water (affordable shared transport through an electric car pool, locally produced renewable energy, recycling projects, local treatment of surface water runoff so decreasing the risk of flooded basements during heavy rain).

As a result of these projects, the city of Malmö has noted a change in people's attitudes and behaviour with increased recycling of household waste and increased popularity of the bicycle as a means of transport. A wide range of innovative 'green' products and services has resulted from the projects e.g. green roofs, low energy villas and renewable energy solutions. This concerted effort and commitment of the local authorities and its partners demonstrates that Local Agenda 21 is a viable concept for sustainable urban development. The projects meet the basic criteria of impact, partnership and sustainability as well as additional considerations of leadership and community empowerment, gender equality and social inclusion, innovation within a local context and transferability.

Source: Dubai awards, 2002

Box 13.11. Estimates of external costs

Estimates of the external costs of fossil fuel-based electricity production in the EU range from EUR 0.1 to EUR 0.4/kWh for natural gas-based electricity and EUR 0.02 to EUR 0.15 for coal-based electricity (EEA, 2002b). The external costs of transport in the EU amount to around 8 % of GDP, with road transport accounting for more than 90 % of these costs (EEA, 2001).

Ecological taxation and 'green' charges are now established, but they have as yet had limited practical effect.

Internalisation in market prices of external costs is incomplete in many areas.

While the principle of ETR has gained favour throughout much of Europe, in aggregate such changes are not proceeding very quickly. Since 1995, labour taxes in the EU have decreased from 23.8 % to 23.0 % of GDP, and environmental taxes increased from 2.77 % to 2.84 % (EEA, 2002a).

Taxes relating to energy and transport remain a key indicator. In most of northwest Europe, taxes on the five main energy products are already equal to or higher than those that were proposed by the European Commission for 2002 in the 'Monti proposal' (CEC, 1997). However, taxation levels are significantly lower in the cohesion countries — Spain, Portugal, Greece and Ireland — and in Luxembourg and Switzerland. Most western European states also now have a road vehicle tax system which is differentiated to one extent or another according to environmental criteria or to some proxy for these (e.g. fuel consumption, engine power) (see, for example, Box 13.12).

Road use and congestion charging is also gaining political momentum in many western European countries. The European Commission is currently developing a framework proposal for infrastructure charging which would agree a common methodology to enable countries to charge for the external costs of using transport infrastructure. A number of Member States, including Germany and the United Kingdom, are planning to introduce their own systems of distance charges for lorries. In Switzerland, such a system already exists whereby lorries are charged for their use of the entire road network. Congestion charging for urban areas is also gaining political support, with London the largest city in Europe to implement such a system.

Taxes and charges on products are relatively scarce, but include a few good examples of effective economic instruments. The recently introduced levy on plastic shopping bags in Ireland has had a dramatic impact (see Box 13.13).

In some CEE countries (e.g. Hungary), efforts have been made to increase taxation on energy products. Some accession countries will need to raise duties on mineral oils further to comply with the EU's current minimum requirements; and all would need to make increases across the range of energy products to reach the levels proposed in the 'Monti proposal'. Environmental differentiation of vehicle taxes is found in some states (e.g. Bosnia-Herzegovina, Hungary, Romania and the Slovak Republic) but is not the norm.

Box 13.12. Annual taxation of passenger cars in the United Kingdom

In the United Kingdom, annual taxation of passenger cars was until recently undifferentiated, but now falls into one of five bands directly related to carbon dioxide (CO_2) emissions. It is proposed that a new energy and CO_2 labelling system will reflect the same bands. The company car taxation system has also been restructured to encourage take-up of cars with lower CO_2 emissions. These changes were welcomed in a recent communication from the European Commission (CEC, 2002b).

Box 13.13. Levy on plastic shopping bags in Ireland

Since 4 March 2002, retailers in Ireland are obliged to charge a EUR 0.15 levy on each plastic bag they provide to their customers. Revenues go to an Environment Fund. In the first three months of its existence, the tax had achieved a reduction in the provision of plastic bags of more than 90 %. More than 1 billion plastic bags per year are expected to be removed from circulation as a result of the tax.

Source: Department of the Environment and Local Government, 2002

An increasing number of environmental taxation systems are being introduced throughout the EU with the aim of improving environmental quality in an efficient way and reducing the burden of taxation on labour and other production costs.

There are some indications of the effectiveness of environmental taxes, but evaluative studies are generally lacking.

Taxes and charges on emissions to air and water and on natural resources are quite widespread in CEE and EECCA, but their effectiveness is uncertain.

Energy, waste and product taxes still lag behind.

Environmental taxes and charges in western Europe, central and eastern Europe and the 12 countries of eastern Europe, the Caucasus and central Asia — Table 13.3.

Country	Natural resources				Waste			Emis-sions		Selected products					Other	
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
Albania	✔															
Armenia	✔	✔		✔	✔			✔	✔			✔				
Austria				✔	✔				✔		✔	✔				
Belarus								✔								
Belgium	❍	❍							❍		✔	✔	✔			
Bosnia & Herzegovina	✔															
Bulgaria	✔		✔	✔				✢	✢							
Cr oatia	✔	✔		✔				✢	✔					✔		
Czech Republic	✔	✔					✔	✔	✔	✔					✍	✔
Denmark	✔		✔		✔	✔			✔	✔	✔	✔	✔	✔		
Estonia	✔	✔	✔		✔			✔	✔		✔					
Finland	✔		✔		✔				✔		✔		✔			
France		✔				✔			✔							
Germany		❍				✔			✔							
Gr eece		✔	✔						✔							
Hungary	✔	✔	✔	✔			✔	✢	✔		✔	✔			✍	
Iceland			✔				✔			✔				✔		
Ireland									✔					✔		
Italy					✔			✔	✔					✔	✍	
Kazakhstan	✔	✔	✔	✔	✔			✔	✔							
Kyr gyzstan	✔	✔						✔	✔							
Latvia	✔	✔		✔	✔			✔	✔	✔	✔	✔				
Lithuania	✔	✔	✔	✔				✔	✔							
Moldova, Rep. of	✔	✔						✔	✔							
Netherlands		✔	✔		✔				✔						✍	
Norway					✔	✔		✔	✔	✔	✔				✍	
Poland	✔	✔	✔	✔			✔	✔	✔	✔	✔					✔
Portugal			✔													
Romania		✔				✢			✔							
Russian Fed.	✔	✔		✔				✔	✔							
Slovak Rep.	✔	✔			✔			✔	✔	✔	✔	✔		✔		✔
Slovenia			✔				✔									
Spain								❍	✔							
Sweden	✔		✔		✔			✔	❍			✔	✔			
Switzerland								✔					✍			
Turkey								✍	❍						✍	
United Kingdom	✔				✔											
Ukraine	✔		✔		✔			✔	✔							
Uzbekistan	✔	✔	✔	✔	✔			✔	✔							

Note: Charges which only cover the costs of production or public services (e.g. waste collection fees, waste water treatment) are not included.

Key:
✢ = Non Compliance Fees (fees/penalties which only apply to emissions above limits).
❍ At the regional (sub-national) level.
✍ Aircraft only

a	Mining, minerals, gravel, sand, etc	i	To water
b	Gr oundwater, surface water	j	Chemical substances
c	Hunting, Fishing	k	Packaging
d	Forest use, tree cutting	l	Batteries
e	Landfl ling	m	Pesticides
f	Incineration	n	Plastic bags
g	Hazardous waste	o	Noise
h	To air	p	Land use change

Source: EEA, 2000; OECD 2000, 2002a; REC, 1999; UNECE Environment Performance Review reports

Taxes and charges on energy products remain quite low in EECCA, and there appears as yet to be little attention to improving vehicle fleet performance through differentiated taxation. In the 1990s, many of the EECCA countries introduced charging systems to raise revenues for environmental investments, create incentives for pollution control and reduction, enforce permit requirements, and implement the polluter pays principle (UNECE, 2002). These charges have generally been introduced in conjunction with a permit system: a base charge is applied for permitted emissions and a penalty rate encourages compliance with the permitted standard.

Subsidies

There are many examples of subsidies across Europe. For example, most forms of public transport are subsidised in most countries, in recognition of the fact that public transport serves important social goals and provides an alternative to (generally more damaging) private transport, particularly private cars. Some western European countries and most CEE countries and EECCA have historically subsidised spending to a high level, but in many countries, these subsidies are under pressure from national and local authority budgetary limits. Particularly in the countries in transition, budgets for public transport have been cut back severely, and service levels and quality have suffered as a result.

To combat carbon dioxide (CO_2) emissions and other forms of pollution from fossil-fuelled power stations, most western European countries in particular offer direct or indirect subsidies for renewable energy plants. Indirect subsidies tend to be mechanisms that operate within the framework of electricity supply pricing, such as the German 'feed-in' law or the United Kingdom's renewables obligation. The Community also collectively supports renewables investments through the second ALTENER programme, while the parallel SAVE II programme encourages energy efficiency investments.

In recent years, there has been an increase in some countries in support for environmentally sensitive farming. It is increasingly recognised that farmers, foresters and others supplying environmental or social benefits may need direct economic incentives. Such incentives are playing a bigger role in agriculture policy and at the same time there is a growing emphasis on attaching environmental conditions to support payments, as proposed on an increased scale by the Commission in the mid-term review of the common agricultural policy (CAP).

The EU has increased the level of resources devoted to agri-environment schemes dramatically since 1992. They now cover around 20 % of the total agricultural area and include measures to support organic farming and reduce pollution pressures, and the management of cultural landscapes. Several CEE countries have also adopted this approach.

Environmental funds (usually funded by receipts from pollution charges) have been important in securing environmental investments in some CEE countries and EECCA which have undergone the most rapid reform, as capital is otherwise in short supply. In many other countries, industrial output is at about half its pre-transition levels; here environmental policies rarely provide sufficient incentives for action, while environmental funds have been more limited and less effective (UNECE, 2002).

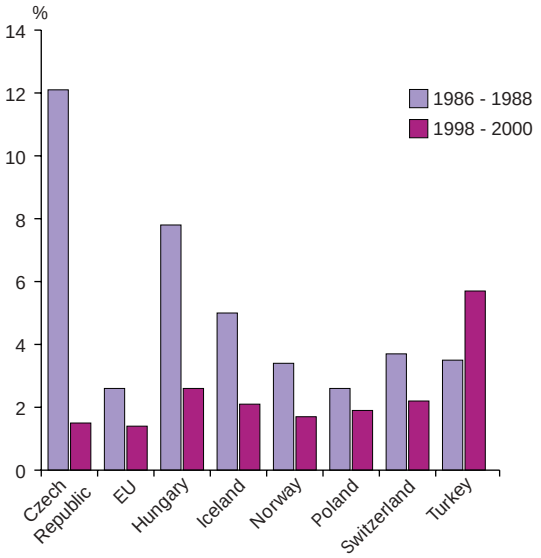
Environmentally damaging subsidies and tax exemptions

Financial support to industries, activities and products may also have significant negative impacts on the quality of the environment. Such subsidies, which may be either direct (visible) or indirect (invisible), are widespread both in Europe and in the rest of the world. Direct subsidies include financial support for production, e.g. in agriculture (price and income support for farmers) and energy (coal subsidies, or tax exemptions for aviation, commercial fishing or certain industrial sectors). Indirect subsidies occur where markets are protected (e.g. at the EU's outer borders), and where governments provide products and services for prices that do not cover the costs, e.g. in waste and wastewater collection and treatment, and the provision of clean water and of infrastructure for transport. In the EU, the European Commission has the role of policing subsidies, particularly in areas where either direct or hidden subsidies could distort the Single Market. However, the Community's influence in national energy policy is very limited; but the Commission oversees the CAP, which incorporates a large and elaborate system of subsidies, compensation payments, tariffs and price supports, and which accounts for 45 % of the Community's entire budget.

Figure 13.1. shows the development of total support to agriculture in a number of countries during the 1990s. In most countries for which data are available, subsidies to agriculture show a decreasing trend. OECD countries, like others, are committed to reducing support to agriculture. However, the pace of such reductions has generally been slow and some aspects of support are excluded from the reduction commitment as they are classified by the WTO as 'green box' or 'blue box' support. The recent proposals from the Commission for the mid-term review of the CAP would result in a very significant 'decoupling' of support from production.

In the energy area, subsidies to coal production dominate in the EU. These subsidies are stable or show a decreasing trend but especially in Germany, coal subsidies are still a substantial share of GDP.

Total support estimates (TSE) to agriculture in EU and selected countries — Figure 13.1.



Note: The TSE is the total share of GDP in agricultural support (three-year averages in %). It includes both transfers from consumers (through domestic market price support) and from taxpayers (through budgetary or tax expenditures).

Source: OECD

Tax reductions and exemptions for energy use in European countries — Table 13.4.

Country	*Coal*		*Natural gas*		*Electricity*	
	VAT	**Energy tax**	**Vat**	**Energy tax**	**VAT**	**Energt tax**
Austria		E		RL		RL
Belgium	R	E				
Bulgaria		–		–		–
Cyprus		–		–		–
Czech Republic	R	–	R	–	R	–
Denmark		RL		RL		
Estonia		–		–		–
Finland			(R)	R		RL
France		–		–		–
Germany	E	–	RL	–		RL
Greece		–		–	R	–
Hungary	(E)	–	(R)	–		R
Iceland		–		–	RH	–
Ireland	RH	–	RH	–	RH	–
Italy	R	(E)	R	RHL	R	RHL
Latvia		–		–		–
Lithuania		–		–		–
Luxembourg	R	–	RH	–	R	–
Netherlands				RHL		RHL
Norway					R*	
Poland		–		–		–
Portugal		–	(R)	–		R
Romania	EH	–	EH	–	EH	–
Russian Fed.		–		–		–
Slovak Rep.	R	–	R	–	R	–
Slovenia		E		E	(R)	E
Spain		–		–		
Sweden		RL		RL		EL
Switzerland		–				–
Turkey		–	R	–		–
United Kingdom	RH	EH	RH	EH	RH	EH

Notes: R denotes a tax reduction; E an exemption. L indicates tax reductions/ exemptions for large energy users (and/or specific sectors, such as greenhouse horticulture). H indicates tax reductions/exemptions for households. Tax reductions/ exemptions for renewable energy are not considered to be environmentally harmful subsidies and therefore not included. Brackets indicate arrangements that have recently been abolished. — indicates the absence of any specific energy/CO_2 taxes. * indicates only in certain regions.

Source: Oosterhuis, 2001

In many European countries, the use of energy is further subsidised (usually for social or competitiveness reasons) by means of tax reductions (see Table 13.4).

Unlike agriculture and energy, the size of subsidies to transport is not currently estimated on an internationally comparable basis. These subsidies mainly consist of below-cost provision of infrastructure, the failure to tax the external cost of pollution, congestion and accidents, and tax reductions and exemptions for specific modes of transport. Again this is often done for reasons of social inclusion or commercial competitiveness. Among the latter, however, the absence of taxes on aircraft fuel is the most obvious example. The European Commission recommended in 2000 that the EU Member States should intensify their work within the International Civil Aviation Organisation's framework for the introduction of taxation on aviation fuel (CEC, 2000), but relatively little progress has been made. Work continues on a possible European aviation charge.

In the CEE countries and EECCA, artificial price levels and other forms of subsidy were common under the former centrally planned economies. Through the 1990s, however, economic dislocation and restructuring severely reduced the funds available to national governments. In addition, international financing institutions have insisted on far-reaching reforms as preconditions of loans and grants. These two effects have combined to bring about substantial reductions in the level of subsidies in most sectors.

Environmentally damaging subsidies and tax exemptions remain substantial. Subsidies are generally falling, but favourable tax treatment remains common.

Emissions trading

The newest economic regulatory instrument in the EU is emissions trading. While there has historically been reluctance to use emissions trading in the EU, this changed with the incorporation of 'flexible mechanisms', which include emissions trading, in the 1997 Kyoto protocol. Ever since, there has been a rapidly growing interest in tradable permits or emissions trading, both at the EU and Member State level. An EU-wide greenhouse gas emissions trading programme for a list of industrial sectors is planned to be operational in 2005.

Discussions on the design and implementation of domestic greenhouse gas emissions trading schemes are taking place in a number of Member States, including the Netherlands, Sweden, Germany, France and Switzerland. Denmark and the United Kingdom have already launched domestic emissions trading schemes, which became operational in 2001 and 2002 respectively (OECD, 2002b).

Although major tradable permit schemes deal with greenhouse gases, the instrument in general seems to be attracting more interest. The Netherlands have been seriously considering a nitrogen oxide (NO_x) tradable permit scheme, and in the United Kingdom a quasi-trading scheme for sulphur dioxide (SO_2) was implemented though company 'bubbles' for the then National Power and PowerGen. Several countries are introducing tradable renewable energy certificates (e.g. Belgium, Denmark, Italy and the Netherlands) and the United Kingdom has developed tradable certificates for waste (OECD, 2002b).

Emissions trading has been launched in the EU as a new regulatory instrument that promises to offer new opportunities for further cost-effective reductions in pollution.

Voluntary approaches

In addition to governmental action, some initiatives have been taken, which emphasise the private sector's own responsibility for a better environment. As well as regulators and firms entering into negotiated agreements (NAs) and self-commitments that specify targets to be achieved, companies are discovering the value of a 'clean' image and of selling 'green' products and services. However, vested interests, ingrained habits and institutional barriers may obstruct the 'greening' of industry. Generally speaking, the number of voluntary actions has increased substantially in the past decade. Negotiated agreements are also increasingly seen as instruments within a portfolio of instruments, and the approach of 'which instrument is best' has changed to one of 'which package of instruments forms an optimal instrument mix'.

Business participation in negotiated agreements

Under negotiated agreements, governments and industrial sectors or a group of individual companies agree to reach certain environmental objectives in a certain timeframe (Box 13.14). Many negotiated

agreements are based on civil law, i.e. bilateral agreements between contracting partners, while others are more 'gentlemen's agreements' that are not legally binding. The choice depends on the particular legal structures of the country.

The number of negotiated agreements increased during the 1990s and spread to most EU Member States, but they are as yet very limited in CEE countries and EECCA (EEA, 1997; OECD, 1998 and 1999; ten Brink, 2002). Today, several hundred negotiated agreements operate in the EU, most of them at national level, but with many local negotiated agreements in some countries and only a handful of Community-wide agreements focusing on products widely traded in the internal market. Based on a strong tradition of consensual politics, the Netherlands leads with more than 100 negotiated agreements, though there is significant growth in the use of these instruments in many other Member States.

Crucial for effective NAs are credibility of agreements, strong commitment of the parties involved, transparency of monitoring and quantitative targets. A 'big stick' of regulatory threat improves effectiveness, but sometimes such a stick does not appear necessary (de Clercq *et al.*, 2000). It is important to stress that NAs can be seen as a process and that with due government interest and pressure, sometimes facilitated by NGO initiatives, an agreement can be improved over time.

The use of negotiated agreements grew significantly during the 1990s, particularly in western Europe, but scepticism still remains regarding their effectiveness.

Certified environmental management systems (EMS)
Since the 1980s, large companies have developed environmental management systems (EMS) in response to pressure to demonstrate environmental performance. In 1996, developments culminated in the introduction of two EMS standards: ISO 14001 (under the auspices of the International Organization for Standardization) for all types of organisations worldwide and EMAS (eco-management and audit scheme) for industry in the EU. In 2001, a renovated EMAS-2 was closely dovetailed with ISO 14001 and is now also available for non-industrial sites. Companies can certify their EMS according to ISO and EMAS. EMS targets are prescribed as legal compliance and a continuous improvement of environmental performance. These wordings give businesses flexibility in implementation.

Box 13.14. Key areas addressed by negotiated agreements

Over the past few years the key area of growth in the use of negotiated agreements (NAs) is climate change. NAs have also been increasingly linked to environmental taxes (e.g. UK climate change agreements are linked to the climate change levy). The EU also fosters the further development of NAs where these offer particular added value (CEC, 1996; 2002b).

NAs have been launched to address a wide range of environmental challenges, covering pollution from process activities (e.g. SO_2 and NO_x emissions in the Netherlands, emissions to water in Portugal, CO_2 emissions in the United Kingdom and Switzerland), process activity efficiency (e.g. energy use and efficiency in Finland, Germany, the Netherlands), product use (e.g. batteries in Germany and Belgium), wastes related to products (e.g. packaging waste in Sweden, transport packaging in Denmark).

In five years, ISO 14001 and, to a lesser extent, EMAS have become popular with businesses. As Table 13.5 shows, several thousand companies have certified their EMS. Geographically, there is an emphasis on northwest Europe. Accession EU countries are catching up on ISO 14001. EMAS has become popular in a few countries, notably Germany, Austria, Denmark and Sweden. In business sectors, emphasis is on multinational corporations, with the chemicals industry as the prime example.

A caveat is that a certified EMS does not automatically improve environmental performance. A recent research project found no relation between certification and performance (Berkhout et al., 2001). Moreover, companies have substantial freedom to choose their own priorities in EMAS/ISO 14001. Chain management and green procurement are options, but are not compulsory. Most companies focus their effort on internal production processes, but electronics and car manufacturers have started to look at procurement policies as a means for environmental improvements through chain management.

Business environmental reporting
The 1990s saw the inception of business environmental reporting (Figure 13.2.). Developments run five years behind EMS, showing that a well-functioning EMS is a prerequisite for serious reporting. EMAS obliges a company to publish a certified statement, but ISO 14001 does not.

So far, uniform reporting formats are missing. This brings much confusion and makes comparisons between companies

Table 13.5. **Number of ISO 14001 and EMAS certificates in selected European countries as of January 2002**

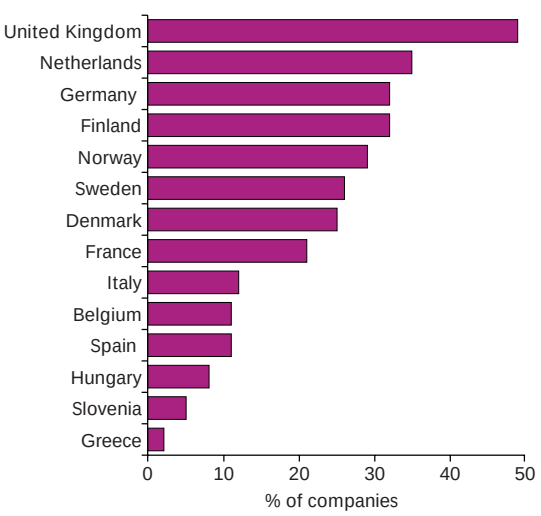
Note: Number of certificates in countries not listed is less than 20. – : not applied

Sources: www.ecology.or.jp/isoworld; www.europa.eu.int/comm/environment/emas

Country	ISO 14001	EMAS	Country	ISO 14001	EMAS
Germany	3 380	2 692	Norway	297	64
United Kingdom	2 500	78	Poland	294	–
Sweden	2 070	211	Austria	224	360
Spain	2 064	154	Ireland	200	8
Italy	1 108	68	Czech Rep.	197	6
France	1 092	35	Slovenia	138	–
Netherlands	942	25	Belgium	130	14
Denmark	919	174	Turkey	91	–
Switzerland	762	–	Slovak Rep.	73	–
Finland	678	36	Greece	66	6
Hungary	300	–	Portugal	47	2

Figure 13.2. **Corporate reporting by country in 2002, top 100 companies**

Source: KPMG, 2002



difficult. In 1997 the Global Reporting Initiative (GRI), an NGO backed by UNEP, started the development of sustainability reporting guidelines (GRI, 2001).

Some EU countries oblige certain sectors of industry to publish environmental reports: Denmark (since 1996; several thousand sites), the Netherlands (since 1999; 250 companies), Sweden (since 1999; paragraph in financial report) and France (to start in 2002; for publicly quoted companies).

The number of companies that report on environmental performance is still increasing. A central register of environmental reports does not exist, but of the biggest corporations in the Fortune Top 250 list, 45 % now publish an environmental report (KPMG, 2002). Companies in the chemicals, gas, oil, electronics, automotive and utilities sectors are front-runners. A 2002 UNEP study lists 'the magnificent seven' as best in class: Cooperative Bank (UK), Novo Nordisk (pharmaceutics; Denmark), BAA (airports; UK), British Telecom (UK), Rio Tinto (minerals; UK), Royal Dutch/Shell (oil; UK/Netherlands) and BP (oil; UK). These companies combine good governance with transparency (UNEP/SustainAbility, 2002).

As with EMS certification, the smaller the size of a company, the smaller is the probability of an environmental report.

International business organisations for sustainable development

Since 1995, the World Business Council for Sustainable Development (WBCSD) has become a leading platform for business cooperation in the field of sustainable development. In 2002, WBCSD had about 150 member companies, of which 50 % are based in Europe. In WBCSD projects, corporate representatives develop know-how on topics such as eco-efficiency, innovation and corporate social responsibility. On sustainability reporting, WBCSD cooperates

closely with GRI. The 111 corporations that use the GRI guidelines are almost all WBCSD members. In January 2003 WBCSD released a report intended to increase the standing of corporate sustainability reporting as a business tool. It has also produced guidance to help companies produce reports and make the information contained more relevant to stakeholders.

The chemical industry initiated the Responsible Care programme in 1984 aimed at improving performance, open communication with the public and the diffusion of best practice. Responsible Care is a voluntary programme that is continually upgraded and adapted to meet new demands on environmental management.

Most trade associations, national and international, have developed schemes to assist member companies in environmental management. Some of these provide codes of conduct and environmental manuals for their members. However, they do not have such a demanding scheme as the chemical industry and, in the absence of monitoring, the likelihood of compliance to codes of conduct is rather low.

Product eco-labelling

The oldest national eco-labelling scheme, the German *Blauer Engel*, started 25 years ago. The German system emphasises a few product criteria deemed most important for environmental performance. Later schemes use a cradle-to-grave approach by making a product life cycle assessment (LCA). Developed in parallel with many national schemes, the EU introduced its eco-label 'flower' in 1993. This scheme now covers 18 product groups, and another eight are under development. National eco-labelling schemes operate in Germany, Finland, Sweden, Denmark, Norway, Iceland, Spain and Catalonia, France, Austria, the Netherlands, Croatia, the Czech Republic, Hungary, Poland and Slovakia.

In addition to EU and national eco-labels, there are many private and specialised labels. Private labels, covering several product groups, play a role in only a few countries. Examples are TCO (Sweden) and Good Environmental Choice (United Kingdom, Sweden). Specialised labels cover one product group only. They are relatively well developed for products from agriculture and forestry. The EKO-label, upheld by an NGO called SKAL, certifies products from organic farming in about 30 countries (Bushmovich *et al.*, 2001). Emphasis is on food products, but non-food products such as cotton textiles are also included.

In forestry, the Forest Stewardship Council (FSC) has become the dominant initiator of sustainable forest management worldwide. Initiated in 1993 and based in Mexico, FSC-certified forests cover 27 million hectares. In 2002, 23 European countries had FSC-certified forests, of which Poland, Sweden, United Kingdom, Estonia and Latvia are most prominent (with over 0.5 million ha each). In several transition countries, environmental labels have been created for promoting the use of environmentally acceptable products and manufacturing procedures. They are modelled on similar labels in WE. A number of products have received these labels, but as yet there is little information on their commercial effect. Probably the main effect of eco-labels has been to recognise the environmental efforts and motivate the producers, and to establish a dialogue between industry and environmental authorities. International eco-labels have also had an impact in transition countries. Several international networks of organic food certification are present in the region through their local NGO counterparts, along with many domestic organic and quality labels for food products. In a few cases, forests and wood processing companies are obtaining Forest Stewardship Council certification in order to be able to sell wood and wood products to western markets (UNECE, 2002).

The use and coverage of eco-labels continues to spread across Europe, but still for few product groups and in few countries.

Environmental impact assessment

Environmental impact assessment (EIA) is an important tool both for harmonisation of policies and for integration of environmental considerations into economic and other sectoral decisions. It combines the precautionary principle with principles of public participation and of preventing environmental damage.

In western Europe, the situation regarding implementation of EIA at the project level is positive, with only Monaco reporting a lack of legislation. In general the practice of EIA is also good. Progress has been driven, to a significant extent, by the EU's environmental impact assessment directive (Directive 85/337/EEC as amended by 97/11/EC) and by the Espoo convention (EIA in a

transboundary context) that entered into force in 1997. In terms of continuing issues with EIA, while procedural compliance with the directive is generally very good, responses to questionnaires indicate that there are areas for improvement. These particularly regard public participation at the scoping stage, rather than involving the public too late in the process, when project options have already been selected. There has been progress in some countries with the weight given to an EIA in decision-making, with incorrect predictions made in the EIA being subject to variations in permissions granted. However, the norm is still for incomplete implementation of mitigation measures to go both unmonitored and unpunished. More attention is therefore needed on monitoring impacts and finding ways of dealing with unpredicted outcomes.

The Netherlands' EIA system relies on an independent EIA commission to assist in identifying the scope of the assessment (where it includes a wider audience than just the authorities involved) and reviewing the environmental impact statement. This is an accepted way of dealing with bias and quality issues.

The new Portuguese EIA system has novel post-evaluation procedures. These include a requirement for an 'impact assessment compliance report' indicating how mitigation measures outlined in the environmental impact statement were incorporated into the design of the project. The EIA authority may impose project or management adjustments or additional mitigation measures where unforeseen impacts occur. Interested parties, including the public, can raise complaints on the environmental impacts of projects which must be dealt with by the relevant authorities.

In CEE countries, progress with implementing EIA and the practice of EIA is also good. There has been a series of capacity-building programmes which have helped to achieve compliance with the requirements of EU directives; however, not all countries have been through this process. Other problems cited are that, having been through capacity-building programmes and having new legislation in place, there remain operational problems through a lack of training of responsible officers, or a lack of organisations with suitable experience to be able to carry out EIA. Other issues cited are that the quality of environmental statements is poor and that specific guidance needs to be developed; that the EIAs take too long under the administrative procedures adopted (over a year in some cases); and lack of baseline environmental data. Some countries need time to build experience, which could be helped with more emphasis on training, ideally ensuring that long-term measures are in place, such as courses available at universities. Other countries still need capacity-building in terms of changes to legislation and building the administrative framework to allow the process to work successfully.

In EECCA, EIA systems are primarily based on the state ecological review (SER) and assessment of ecological impacts (OVOS) systems inherited from the former USSR. There are commonly cited problems in the operation of these systems. These include citizens being unaware of their rights and duties and so not participating properly in EIA; financial constraints preventing the operation of the EIA framework; quality of environmental impact statements being poor; guidance being inadequate; there being no consideration of transboundary impacts; there being no, or few, EIA specialists; and penalties for non-compliance being inadequate. Another common problem is that the transition of legislation from the former SER/OVOS system to a more 'western' style of EIA in some countries is leading to a situation where two systems are operating in parallel, thus causing confusion.

Strategic environmental assessment

Progress with strategic environmental assessment (SEA) in western Europe is far more patchy. The European Union has adopted a directive on SEA (Directive 2001/42/EC) which must be implemented in Member States by July 2004. In western European countries, there is a lot of experience with application of SEA, and some countries have working systems. However, SEA is far more commonly carried out in an ad hoc way, and is largely confined to specific sectors (particularly land-use plans and transport plans). Many countries cite their only experience of SEA being through the assessment of regional plans as

The implementation and use of environmental impact assessment is now widespread across Europe, but its effectiveness is limited.

required by the European Council regulation for structural funds (2081/93, now superseded by 1260/1999) and indicate a lack of guidance as a key barrier to successful implementation of legal or administrative requirements.

In some CEE countries, it is too early to say whether new SEA provisions are working well, in others new legislation is still in the process of development. Yet other countries cite a number of problems with the implementation of SEA. Principal among these are a lack of systematic coverage of content requirements, a lack of enforcement provisions and a lack of application of SEA to any sector other than land use. Accession countries will however soon be subject to the requirements of the EU's SEA directive, and this may have a beneficial effect.

In EECCA, the SER and OVOS systems theoretically also cover SEA, and so the problems for SEA are similar to those for EIA, as detailed above. It is also likely that progress in many EECCA countries will be slow because of the financial situation in those countries — capacity-building assistance should be considered here as it has proved successful in many accession countries.

The application of strategic environmental assessment is patchy, and clear guidelines for its coverage and use are lacking.

Box 13.15. A new EU initiative towards more integration: impact assessment

The May 2002 communication from the Commission (CEC, 2002c) formally launched the EU's initiative to use 'impact assessment' (IA) to improve the quality and coherence of the policy development process. The intention is that an IA will be carried out for all major initiatives, whether strategies and policies, programmes or legislation. There is now pressure for the application of IA to various policies, building on previous analysis of trade policy (called sustainability impact assessment or SIA).

Impact assessment is intended to help analyse the impacts of such initiatives in terms of the three pillars of sustainable development — economic, social and environmental. It should also highlight who is affected and what the trade-offs are, both across the three pillars and between stakeholder groups. The IA tool is also intended to simplify the process of assessing major initiatives, by incorporating the key elements of several existing evaluation methodologies and superseding them. These include business impact assessment (BIA), regulatory impact assessment (RIA), health impact assessment (HIA) and even SEA. However, a key question is how far these aims can be fully translated into practice and whether key issues previously highlighted under existing techniques will lose some of their prominence.

At the national level, there is as yet no requirement to use IA. National approaches using RIA, SIA, BIA, SD (sustainable development) assessment, etc., will continue, although it is likely that broader IAs will develop. Currently Finland carries out SIA through the use of adapted SEAs. The Netherlands applies a range of coordinated tests, including inter alia the environment test (E-test) and business test (B-test), and feasibility and enforceability tests. The United Kingdom is piloting its own tool — integrated policy appraisal (IPA) — as well has having adopted RIA as a standard and integrated approach to policy-making.

The requirement to use IA should help to ensure that the sustainability impacts of major initiatives and stakeholders' concerns are noted early enough for the proposals to be improved in advance of being launched. Similarly, by requiring others' interests to be taken into account at an early stage, the use of the IA promises to facilitate a greater integration of sustainability concerns into policies and to ensure greater policy coherence across policy actors and domains.

IA offers the potential to support sustainable development and encourage more effective and efficient policy-making.

Recent initiatives

A recurring theme across all of Europe, especially in CEE and EECCA, is the quality of the public involvement in the EIA and SEA processes. In this context, the first meeting of the Parties to the Aarhus convention took place from 21 to 23 October 2002 in Lucca, Italy and confirmed a compliance mechanism that is open to communications from the public and whose committee members may be nominated by NGOs. This approach was strongly defended by several groups, including the European Union. The mechanism may set a precedent for more effective conventions in the future and could help to foster more open decision-making through example.

There are other examples of recent efforts to improve the integration of policies and ensure realistic implementation. These include the EU initiative on impact assessment (see Box 13.15) and the draft UNECE protocol on strategic environmental assessment. This latter is on course for signing at the ministerial conference 'Environment for Europe' in Kiev in May 2003, and may bring benefits in extending SEA practice across the region.

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