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Review of the implementation of OSCE commitments in the economic and environmental dimension

ENVIRONMENT

Report prepared by the UNECE secretariat

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EXECUTIVE SUMMARY

The participating States of the Organization for Security and Co-operation in Europe (OSCE; formerly the Conference for Security and Co-operation in Europe – CSCE) have been continuously concerned with environmental matters, recognizing that environmental protection and environmental cooperation contribute to peace, prosperity and stability. Starting with the Helsinki Final Act (1975) and in a number of subsequent policy documents, participating States agreed to undertake specific measures, individually and jointly, to prevent, control and reduce adverse environmental impacts, to strengthen environmental management and to promote sustainable development.

This paper responds to the decision by the OSCE Permanent Council to review, at the Fifteenth Economic and Environmental Forum, the implementation of OSCE environmental commitments. It was prepared following the memorandum of understanding signed by the Executive Secretary of the United Nations Economic Commission for Europe (UNECE) and the Secretary General of OSCE in 2004. The memorandum consolidated and deepened cooperation between the two organizations, particularly in the context of responsibilities related to the annual OSCE Economic Forum, where UNECE is to periodically review various OSCE commitments.

The paper focuses on selected issues that may be of particular interest to constituencies that participate in OSCE meetings. It reviews progress made by the OSCE participating States in implementing their commitments in areas requiring strong political support, the involvement of different stakeholders and inter-agency cooperation. These areas are environmental performance, public participation, compliance with multilateral environmental agreements (MEAs), water, information and education for sustainable development.

The paper refers to relevant provisions in OSCE documents, assesses progress made in recent years in the UNECE region and its subregions, presents country examples, and indicates possible ways forward. Particular attention is given to Eastern Europe, Caucasus and Central Asia (EECCA) and South-Eastern Europe (SEE), as UNECE has focused its activities on these two subregions and has, over the past years, built knowledge bases, accumulated experience, become a reference point and produced studies and reports concerning them.

The paper ends with conclusions and recommendations highlighting areas where the OSCE participating States should strengthen their political support to resolving persistent environmental problems and using international environmental commitments as leverage. The annex contains proposals for projects that OSCE participating States are invited to support in order to intensify ongoing cooperation between OSCE and UNECE on environmental matters.

Acknowledgments

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<u>**Annexes**</u>

I.   INTRODUCTION

As part of their comprehensive approach to security, the participating States of OSCE (formerly CSCE) have been continuously concerned with economic and environmental matters, recognizing that cooperation in these areas can contribute to peace, prosperity and stability. The Helsinki Final Act (1975) not only designated the Economic and Environmental Dimension as one of the three areas of activity by the participating States, it also led, in practical terms, to the development and the adoption in 1979, at a UNECE high-level meeting, of an important pan-European instrument, the Convention on Long-range Transboundary Air Pollution.

Several CSCE and later OSCE meetings focused specifically on economic and environmental issues: the Scientific Forum in Hamburg in 1980, the Meeting on the Protection of the Environment in Sofia in 1989, the Conference on Economic Co-operation in Europe in Bonn in 1990, and the Maastricht Ministerial Council in December 2003.

The 1989 Sofia meeting and the 2003 Maastricht meeting played an important role in the evolution of the Economic and Environmental Dimension. The participating States agreed in Sofia, among other things, on the need to develop pan-European legally binding instruments on transboundary waters and on the protection of the environment against industrial accidents. The development within UNECE of the Convention on the Protection and Use of Transboundary Waters and the Convention on the Transboundary Effects of Industrial Accidents was a practical response to this agreement. In Maastricht, the OSCE participating States adopted the OSCE Strategy Document for the Economic and Environmental Dimension, in which they committed themselves to cooperating more closely on good governance, sustainable development and environmental protection.

Overall, participating States made considerable progress in implementing their OSCE environmental commitments. These achievements were, however, uneven within and among participating States. There are various international forums that observe the implementation of specific environmental commitments of participating States. Some forums, like the governing bodies of relevant pan-European environmental agreements, do this for States that are parties to these agreements. Other forums, like the periodic Ministerial Conferences "Environment for Europe" and the Committee on Environmental Policy of UNECE, keep under review the implementation of specific environmental commitments of all countries in the UNECE region, which are (with one exception) the same as member States of OSCE.

The upcoming Sixth Ministerial Conference "Environment for Europe" (October 2007, Belgrade) will review, for instance, changes made in the state of the environment in Europe, Caucasus and Central Asia by this region as a whole and by its subregions. The fourth pan-European assessment report, which is currently being compiled, will serve as a basis for this review. The Conference will also consider progress made in the implementation of UNECE environmental agreements and other instruments such as country environmental performance reviews and the Environment Strategy for EECCA. A number of policy, discussion and information papers are being prepared in UNECE and elsewhere for submission to the Conference.

As a result, the present paper, rather than being a comprehensive review of environmental issues across all OSCE participating States, focuses on selected issues that may be of particular interest to constituencies that normally participate in OSCE meetings. It reviews progress made by the OSCE participating States in the implementation of their commitments in areas requiring inter-agency

cooperation, the involvement of different stakeholders and strong political support. These areas are environmental performance, public participation, compliance with MEAs, water, information and education for sustainable development.

Where possible, the presentation of the different issues follows the same structure: references to relevant provisions in OSCE policy documents, assessment of progress made in recent years in the whole region and its subregions, the presentation of country examples, and the indication of possible ways forward. Particular attention is given to EECCA and SEE, as UNECE has focused its activities on these two subregions and has, over the past years, built knowledge bases, accumulated experience, become a reference point and produced studies and reports concerning them.

This paper responds to the decision by the OSCE Permanent Council to focus the review of the implementation of OSCE environmental commitments at the Fifteenth Forum on international conventions, national legislation and international cooperation experiences.[1]

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[1] Decision No. 735 by the OSCE Permanent Council of 6 July 2006 that set the theme, format and organizational modalities for the Fifteenth Forum.

II. STRENGTHENING ENVIRONMENTAL GOVERNANCE

> **Eleventh Meeting of the OSCE Ministerial Council, Maastricht, 2003**
> **OSCE Strategy Document for the Economic and Environmental Dimension**
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> … (W)e will pursue our action and co-operation, as appropriate, through:
> (a) Promotion of co-ordinated approaches to institutional frameworks for sustainable development, including, as appropriate, through the strengthening of authorities and mechanisms necessary for policy-making and the enforcement of laws;
> (b) Formulating and elaborating national strategies/programmes of sustainable development which involve business and civil society, and beginning to implement them by 2005;
> (c) Promoting public participation in sustainable development policy formulation and implementation;
> (d) Enhancing the role of local authorities and stakeholders in implementing Agenda 21 and the outcomes of the Johannesburg World Summit;
> ….
> (f) Providing conditions and mechanisms for mobilizing internal and external resources for development, and ensuring adequate social conditions.
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> We will encourage States to consider the ratification of existing international environmental legal instruments, including the relevant UN conventions, and will support the full implementation of these instruments by States that are parties to them.

Promoting good governance is often the answer to many environmental challenges and the promotion of democracy and sustainable development. Good governance requires the enactment and enforcement of domestic frameworks, adequate regulatory and institutional infrastructure, and opening up the policy-making process to get more people and organizations involved in shaping and delivering policy. Good governance includes a responsibility towards the international community, including the implementation of and full compliance with MEAs.

A. Environmental performance

The OSCE Strategy Document for the Economic and Environmental Dimension adopted at Maastricht in 2003 acknowledged a number of problems in environmental governance. It pointed, *inter alia,* to such problems as ineffective institutions and a weak civil society; lack of transparency and accountability in the public and private sectors; deficient economic and environmental legislation and inadequate implementation of economic and environmental laws, rules and regulations; and poor public management and unsustainable use of natural resources.

Since 1993, UNECE has been implementing the Environmental Performance Review (EPR) Programme, an independent external environmental assessment carried out in countries of Central Europe, SEE and EECCA at the request of country Governments. The EPR is an important instrument for strengthening national environmental governance. It provides a broad analysis of environmental management in the country and recommendations for its improvement. At the Fifth Ministerial Conference "Environment for Europe" in Kiev in 2003, the ministers reaffirmed their support for the EPR Programme. This part of the document is based on the findings from the first and second cycles of the EPR Programme[2].

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[2] *Environmental Policy in Transition: Ten Years of UNECE Environmental Performance Reviews*. United Nations. New York and Geneva, 2003. *From intentions to actions: overcoming bottlenecks. Critical issues in implementation of environmental policies highlighted by the UNECE Environmental Performance Reviews*. ECE/CEP/2007/4. http://www.unece.org/env/cep/14thsession.html.

UNECE cooperates with OSCE offices in the countries under review. An example of such cooperation is the support that was provided by the OSCE Project Co-ordinator in Ukraine for translation of the second EPR of Ukraine into the national language and its publication in Ukrainian.

1.   Development of a legal and policy framework for environmental protection

In the last 10 years, countries of Central Europe, SEE and EECCA have been reforming their environmental legislation. Most environmental legal systems are now based on framework environmental laws that are complemented by specific laws and regulations. The framework environmental laws set out the rights and responsibilities of actors in the environmental sector, often incorporating the "polluter pays" and "user pays" principles and the precautionary principle, liability for environmental pollution, environmental standard setting, environmental impact assessments (EIA), public participation and access to information, among others.

Twelve new European Union (EU) member countries from Central and Eastern Europe were particularly active in the process of transposition and implementation of the EU environmental *acquis communautaire,* as it was one of the requirements for accession to the EU (se an example in box 1). This process is not limited to the new EU members. It is proceeding actively in the countries that are candidates and potential candidates for EU membership. Many of the EECCA countries, currently not on the list of potential EU candidates, have also stated harmonization of their environmental legislation with the EU legislation as their objective and have achieved various degrees of progress in this endeavour.

Box 1: Implementation of the EU environmental *acquis communautaire* in Estonia

After the Environment Chapter of the negotiations for EU accession was opened in 1999, the Government adopted implementation plans for sectoral directives (e.g. on air, waste, and nature protection), accompanied by financing strategies. Transitional periods were requested, in particular for those directives involving substantial investment in infrastructure (drinking water, waste water, and landfills).

Source: Environmental Performance Review of Estonia – Second Review (UNECE, 2001)

In most EECCA and SEE countries, the relevant laws and regulations have been adopted in a short period of time. This often resulted in inconsistencies between new and older laws. Subsidiary legislation is often missing or incomplete, and implementation and enforcement are weak. In many cases, too many environmental standards are integrated into the legislation, which makes their implementation and enforcement even more difficult. Institutional reforms have at times created additional confusion. For example, institutions designated by law to be the legal implementing agencies have been dissolved or changed without amendments to the law. In addition, the extensive enactment of environmental legislation is placing a major burden on the generally limited administrative capacity not only of the ministries preparing the legislation but also of the implementing agencies and local administrations.

Virtually all countries of the UNECE region have adopted national environmental strategies and national environmental action plans (NEAPs). A major problem in implementation of these policy documents in many EECCA and SEE countries is a lack of clear prioritization, detailed timetables and specific financial requirements. In some cases, when financial needs are specified, the resources actually allocated are insufficient for effective implementation. Another problem is that there is often little coordination between the NEAP and other environmental programmes and

strategies (for example, specific policy instruments for water management, waste management and air pollution prevention), as well as with strategies for the development of economic sectors (industry, agriculture, transport, etc.).

International cooperation often gives an impulse to policymaking at the national level. In 2004, the enlargement of the European Union by 10 new countries led to the preparation of a European Policy Action Plan (EPAP) with the neighbouring countries. As the EPAP has had a positive effect on the countries' national policy implementation process, environmental issues should be further highlighted in such a plan in the future. The Fifth "Environment for Europe" Conference in Kiev (2003), endorsed an EECCA Environment Strategy covering the most important related issues. Also, new national strategies and legislative instruments for reducing and preventing environmental pollution and degradation are being put in place to implement MEAs.

2. Development of institutional capacity for environmental management

The past decade has seen significant progress has been made in establishing government bodies for environmental protection. Most of the national governments in the UNECE region have established environment ministries and regional or local environmental authorities. Only a few have government bodies with a lower status than a ministry (e.g. a state committee, as in Uzbekistan, or a state agency, as in Kyrgyzstan) in charge of environmental matters. In some cases a ministry has been downgraded to a state committee, as in Tajikistan. In some countries, environmental protection is handled by a ministry that also oversees another sector, such as science (as in Serbia), tourism (as in Montenegro), agriculture or water management, with little justification (other than political expediency) for such an arrangement.

The position of the ministry in charge of environmental protection is generally not strong enough to ensure that environmental issues are high on the government's political agenda. Sometimes demands for cuts in government budget spending hit the environmental authorities hardest (see an example in box 2).

Box 2: Decrease in environmental staff in Moldova

The Department of Environmental Protection of the Ministry of Ecology, Construction and Territory Development had 41 staff members in 2003. With the creation of a new Ministry of Ecology and Natural Resources in 2005, the number of staff members dealing with environmental protection at the national level was reduced to 25, with a further reduction to 18 in 2006.

Source: Environmental Performance Review of Moldova – Second Review (UNECE, 2001)

When the association of environmental functions with other functions results in conflicts of interest, the ministry's power and effectiveness are further undermined. Most environment ministries in EECCA are responsible for the protection of natural resources, including nature protection. This requires good coordination and cooperation with other ministries, including, for example, the ministries responsible for industry, energy, agriculture, transport, tourism and construction. Weak cooperation makes it difficult for environment ministries, which generally have insufficient political backing, to carry out their mandates effectively. The accumulation of legal mandates previously belonging to other ministries has caused rivalry between ministries and in some cases duplication of capacities, (e.g. with ministries of health or agriculture). One of the most problematic areas in many EECCA and SEE countries is responsibility for water management and protection, which is often divided among several ministries (e.g. five ministries in The former Yugoslav Republic of Macedonia) and additional institutes, boards or other structures.

Another significant problem for many EECCA and SEE countries has been the lack of institutional continuity due to frequent political changes. Environment ministries in some countries have gone through several cycles of reorganization, unification with other ministries, re-establishment as separate entities and more restructuring. For example, frequent leadership changes in Ukraine's Ministry of Environmental Protection along with several restructurings have led to the dilution of the ministry's strategic vision and coherence, decreased effectiveness of the staff's work, scattering of technical and human resources and inefficient use of financial resources. Frequent changes in leadership lead to abandoning of strategies and policies developed by previous group due to a lack of a sense of ownership. The uncertainty, and its impact on long-term policy and plans, may also deter support from the international community.

Environmental institutions in most EECCA and SEE countries have benefited from special capacity-building programmes supported by donors and international organizations. However, a major problem for environment ministries in these countries is to recruit and retain highly qualified staff. Salaries in the public sector remain low, and skilled experts have little incentive to stay in the ministry when income opportunities in the business sector are much more attractive.

3.   Financing for environmental protection

Political will to finance environmental protection has been generally weak in many EECCA and SEE countries. In some cases, the allocated funds are not even enough to ensure the normal functioning of state agencies. Also, the level of environmental investment is usually low. National environmentally related expenditures generally go mainly to maintenance and operation of existing, often obsolete and inefficient facilities, and very few resources are devoted to building new infrastructure or introducing new, environmentally sound technologies. In addition, the environmental expenditures of various government bodies are usually insufficiently coordinated.

However, some countries, such as Kazakhstan, Moldova, Montenegro and Serbia, have made progress in managing public resources by implementing results-oriented budgeting, developing medium-term expenditure frameworks and better controlling budgetary resources. In the last four to five years almost all EECCA and SEE countries have experienced rapid economic growth accompanied by increases in the State and local budgets. While the share of the State budget allocated to the environment has remained low (in most cases 0.5% or less), in absolute terms the funds available for environmental protection are increasing.

Domestic sources of financing for environmental investment include State, regional and local budgets, companies, commercial banks and environmental funds. Financing from the State budget remains the major source in EECCA and SEE. Many countries either have established or are establishing environmental funds. However, frequently these funds do not follow the internationally-agreed *Saint-Petersburg Guidelines on Environmental Funds in the Transition to a Market Economy* (1995). In many cases, they are not separate institutions but item lines in a budget (State, regional or local) that are earmarked for environmental purposes. The criteria for selecting projects to finance from environmental funds are often vague, and there is little transparency in how they are followed. Governments are often tempted to use these financial resources for purposes other than environmental protection, especially since the revenues of the environmental funds have increased dramatically in some countries in the last few years (see an example in box 3).

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│                  Box 3: Revenues of the Environment Protection Fund in Belarus │
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│  The revenues of the Environment Protection Fund in Belarus increased from US$ 9.5 million in 2000 │
│  to about US$ 125 million in 2004, with about 80% of the increase coming from water and air │
│  pollution charges. This was achieved mainly by establishing emission limits based on the actual │
│  production of companies rather than nominal capacity, which resulted in steep increases in pollution │
│  charges.                                                                      │
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│  Source: Environmental performance review of Belarus – Second Review (UNECE, 2005) │
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Sources of revenue for environmental funds vary from country to country but in general include various pollution charges and taxes on the use of natural resources. These and other economic instruments (such as user charges for water and waste services) have been introduced explicitly to rationalize the use of resources, facilitate the abatement of environmental pollution and raise revenues for environmental expenditures. However, in most in EECCA and SEE countries, the incentive effect of economic instruments has been weak, and their main purpose has become to raise revenues for environmental funds and general budgets.

Even with recent increases (which often simply compensate for inflation), environmental charges are at low levels and are sometimes poorly enforced. Electricity, heating, water supply and waste disposal tariffs often remain below cost recovery levels, and there is little economic incentive for users to save natural resources and energy. Cross-subsidization of all or some of these services (with higher tariffs for the business sector and much lower ones for households) creates additional distortions. This also results in a low level of services being provided, as there is not enough funding to cover maintenance and operating expenses, let alone capital investments to install new equipment or replace obsolete equipment.

Financial support from donor countries and international organizations is needed to help EECCA and SEE countries enhance environmental management and protection. One obstacle hampering international assistance for environmental protection is the fact that most EECCA and SEE countries have not included environment as a priority in their strategies and plans to attract international donation. Overall, national institutions do not efficiently use the different financial instruments and mechanisms available for funding environmental projects, such as the funds available under the EU neighbourhood programmes, the Global Environment Facility (GEF) umbrella and the Kyoto Protocol's flexible mechanisms. Too often, projects under implementation appear to be donor-driven rather than based on the actual needs of the country, which results in a low sense of ownership and lack of follow-up after donor resources for the project are exhausted. In addition, inadequate communication between the authorities and donors and the frequent governmental restructuring have contributed to reducing international environmental cooperation in many countries.

4.   Integration of environmental concerns into sectoral policies

Awareness of the need for sectoral integration and related tools has been steadily growing thanks to the follow-up to the World Summit on Sustainable Development, the UNECE "Environment for Europe" process, and the EU accession requirements. National sectoral strategies and programmes to improve environmental protection have been adopted, for example, for energy, forestry and waste management. However, environmental policy integration is still at an early stage and is addressed in a fragmented way in many countries.

Environmental policy integration can also be driven by national strategies for sustainable development (NSSDs), which provide a framework for sectoral integration. Many countries have

adopted or developed NSSDs. A few countries (including Albania, Armenia, Bosnia and Herzegovina, Kazakhstan and Kyrgyzstan) have not yet started work on NSSDs.

(EIA can be an important tool for integrating environmental considerations into economic decisions. Virtually all countries have adopted EIA law and regulations. Strategic environmental assessment (SEA) is also seen as a key instrument for sectoral integration at an early stage in the development of programmes and policies, and it provides for extensive public participation in government decision-making. Legal requirements for SEA have been introduced in several countries.

Environmental management systems are also important instruments for integrating environmental concerns into the business sector as they allow managers to see new opportunities, introduce cleaner technologies and cut production costs. The use of such systems is becoming more popular, and the number of enterprises with environmental certification (ISO 14000, EMAS) has increased steadily throughout the UNECE region.

Institutional weakness and insufficient political will remain major issues for integrating environmental policies into sectoral policies in most EECCA and SEE countries. Governments are making efforts to introduce institutional instruments for environmental policy integration, for example, by adding environment units to sectoral ministries (e.g. agriculture, transport, energy, industry) and creating inter-ministerial commissions for consultation during the development of legislation and strategies. However, interaction between environmental and sectoral ministries often occurs late in the consultation process and is more formal than result-oriented. Many governments have created National Councils or Commissions on Sustainable Development to improve policy coordination and cross-sectoral cooperation. The cross-sectoral nature of such bodies could be effective in addressing all three pillars of sustainable development. However, in practice these bodies are often weak or completely non-operational in EECCA and SEE.

5. The way forward

Governments of EECCA and SEE countries should strengthen their political support to resolving persistent environmental problems, increasingly involving civil society as a partner and using international environmental commitments as leverage. They should urgently address the serious bottlenecks caused by weak environmental institutions by strengthening the level, mandate and capacities of the environmental authorities to make these more competent and effective, clarifying institutional task sharing, and consolidating enforcement structures.

To increase the effectiveness of environmental financing, governments of EECCA and SEE countries should review procedures, improve institutional capacity, and make proper use of economic instruments. A more solid foundation for identification of projects and prioritization of spending of environmental funds should be developed. Also, governments of EECCA and SEE countries should adjust their environmental priorities and develop more realistic environmental programmes and strategies for their effective funding. Finally, they should institutionalize the integration of environmental policy into sectoral policies, and should ensure involvement of the private sector and effective public participation in the policy integration process.

UNECE and OSCE should continue their cooperation in the preparation of EPRs, especially through the support that OSCE offices in the countries under review are providing to UNECE EPR teams.

B.   Public participation

1.   Aarhus Convention

The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) is widely viewed as the most far-reaching elaboration of principle 10 of the Rio Declaration on Environment and Development developed under the auspices of the United Nations. At their second meeting (held in Almaty in 2005), the Parties to the Convention expressed their conviction that its implementation would contribute to strengthening democracy in the UNECE region. They affirmed the need to protect, preserve and improve the state of the environment and to ensure sustainable and environmentally sound development through promotion of environmental democracy.

Over the past three decades, there has been a significant tendency among the OSCE participating States to embrace the values inherent in principle 10. Since the Convention was adopted in 1998, 39 of OSCE's 56 participating States have become Parties to the Aarhus Convention. An additional six are signatories to this unique environmental democracy instrument.

Over the nine years since its adoption, the process of implementation of the Aarhus Convention has triggered development of national legislation and institutional improvements in this field in many countries of Europe and Central Asia. Although progress is encouraging, when implementing the Convention at the national level, the Parties have encountered a number of difficulties. In their national implementation reports submitted in 2005, they identified several problematic areas of implementation, among which the issues of access to justice were acknowledged as posing the biggest difficulties. At the same time, access to justice is one of the three pillars of the Convention whose implementation is a prerequisite for effective access to information and public participation in environmental decision-making, and thus effective environmental protection.

2.   Access to information

In 2005, UNECE identified major trends in the implementation of the Aarhus Convention across the region. In its review, three groupings of Parties were considered: (a) EECCA; (b) EU and other West European countries; and (c) SEE.[3]

In general, implementation of the first pillar of the Convention, addressing access to information (articles 4 and 5), appeared to be the strongest of the three pillars. Governments performed well when asked about legislative provisions for providing access to information upon request. In a majority of the countries submitting reports, legislative provisions for the collection and dissemination of environmental information were well developed and were often found in environmental protection laws.

Some countries recognized that there were general problems in the implementation of access to information upon request. They reported that in some cases members of the public were not fully

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[3] *Synthesis report on the status of implementation of the Convention* (ECE/MP.PP/2005/18). All 10 Parties from the first region, 11 of the (then) 16 Parties from the second group and 2 of the 4 Parties in the third group submitted national implementation reports prior to the second meeting of the Parties, held in May 2005. Four additional countries had submitted reports in late 2005.

aware of their rights to access information (e.g. Italy) or did not know how to write a request for information (e.g. Kyrgyzstan). Conditions under which requests can be refused also vary widely. The legal bases on which requests for information may be refused vary, in particular in EECCA, where the possibilities for such refusals may be found in general laws on information or environmental information (e.g. Azerbaijan, Ukraine) or in laws on state and/or commercial secrets (e.g. Armenia, Kyrgyzstan).

3. Public participation in environmental decision-making

The diversity of legislation employed in responding Parties and less than complete information make it difficult to generalize on the state of implementation of all aspects of public participation. Overall, EU members and other West European countries are generally ahead of EECCA and SEE countries in their implementation of the public participation pillar of the Convention. In many EECCA countries, public participation is still at a preliminary stage, in spite of the adoption of a number of legislative and regulatory measures. The implementation of the access to justice pillar appears to be the weakest in both EECCA and SEE countries.

There are distinct commonalities in the implementation of the Convention by the EECCA countries, which can be traced back to their origins as post-Soviet States. Overall, in EECCA, implementation appeared to be most advanced in Belarus, Kazakhstan, Moldova and Ukraine, and somewhat less so in Armenia, Azerbaijan and Georgia. Kyrgyzstan, Tajikistan and Turkmenistan appeared to have made the least progress in implementation (see the country examples in boxes 4 and 5).

Box 4: Legislation of Tajikistan on access to environmental information, public participation in environmental matters and access to justice

Tajikistan's legislation on access to environmental information, public participation in environmental matters and access to justice in environmental matters consists of several laws, including the Law on Nature Protection, which serves as the framework law. The Law on Informatization addresses access to information in the possession of public authorities, and the Law on Ecological Expertise deals with both access to information and public participation in decision-making in the context of environmental assessment. Under the Environmental Protection Act, citizens of Tajikistan have the right to participate in and oversee the preparation, adoption and implementation of decisions with an impact on the natural environment. The Environmental Appraisals Act governs the general procedure for the organization and conduct of environmental appraisals; determines the rights and obligations of the parties involved in the appraisal; establishes the rights of citizens to obtain information on the environmental risks of projects that are planned, under construction or in operation and the corresponding procedures for appealing against the conclusions of the appraisal and settling disputes; and establishes liability for infringements of the environmental appraisal legislation.

The laws together provide a set of principles and guidelines, but there is a relative shortage of procedural rules. The provisions on public participation and access to justice seem to be the most insufficiently implemented in the national legislation. Substantive rights to participate in environmental decision-making and access to justice in environmental matters are not supplemented with procedural rules. The Law on Nature Protection requires projects that are important for the national economy and may have a significant environmental impact to be subject to national debate or referendum. However, while there is a procedure for a referendum, there is no legally established procedure for a national debate.

Source: Environmental Performance Review - Tajikistan (UNECE, 2004).

> **Box 5: Moldova's legislation on access to environmental information, public participation in environmental matters and access to justice, and its implementation**
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> The legislation contains general provisions to ensure public participation in environmental decision-making concerning laws, regulations, standards, permitting, plans and programmes. However, procedures are not detailed enough to make these provisions applicable in practice. For example, often time frames are not established for individual stages of public participation. Although the 1996 Law on Principles of Urbanism and Territorial Planning requires the public to be consulted on town and physical planning schemes before approval, it does not provide for any time frames. The 1999 Law on Green Areas in Urban and Rural Settlements allows the Government, at its own discretion, to waive the environment protection requirements of this law. No obligation is established in the legislation to inform the public about the decision taken along with the reasons and considerations on which it is based, although the direct effect of the Convention itself could be said to entail such an obligation.
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> The Ministry of Environment and Natural Resources (MENR) is uploading draft legal acts and regulations for comments by the public on its website, but it does not inform members of the public about how their comments have been taken into account in final texts. The public is generally invited to participate in decision-making on policies, plans and programmes of relevance to the environment. In 2004 MENR adopted instructions for the involvement of the public in the process of the development of and the decision-making on draft legal acts and regulations in the field of environmental protection and use of natural resources. The public is not represented, however, on the Inter-Ministerial Committee on Sustainable Development and Poverty Reduction or the National Commission on Environmental Policy. (The latter has been dormant since its creation in 2002.)
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> *Source*: *Environmental Performance Review – Republic of Moldova*. Second review (UNECE, 2005).

Among the SEE countries, implementation of the public participation pillar also required significant improvement. Exceptions to this subregional trend are Bulgaria and The former Yugoslav Republic of Macedonia, which have made significant progress in preparing legislation promoting the public's rights to access information and participate in decision-making.

4. Public participation in decisions on specific activities

Article 6 of the Convention covers public participation in decision-making on specific activities with a potentially significant environmental impact, such as the location of buildings, the construction and activity of major facilities, and the granting of permits to place products on the market. The EIA process is the most typical decision-making process in which the requirements of article 6 must be fulfilled. Legislative measures providing for public participation in decisions on specific activities under article 6 of the Convention, particularly on EIA and permitting procedures for polluting activities, were widely reported in UNECE's 2005 survey. There appears to be a broad range of specific laws on these procedures at the national and regional levels. Problems noted by UNECE countries included the lack of uniform regulations on EIA and a culture of resistance to public participation generally.[4]

A few EECCA countries had regulations on EIA, some of which contained either the requirement or the possibility for public participation and public hearings (e.g. Belarus, Kyrgyzstan, Ukraine), but these countries had not yet established detailed requirements or corresponding procedures. To deal with this challenge, certain countries have started developing legislation on public participation in environmentally significant decisions (Belarus) or expert environmental evaluation (Armenia).

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[4] *Conclusions on the reporting process and implementation trends* (ECE/MP.PP/2005/20).

These implementation gaps were not limited to EEECCA countries. The Czech Republic, for instance, reported its concern that the current absence of a uniform regulation on public participation in decisions that might have an environmental impact could preclude effective participation. Parties submitting project proposals were found not to be motivated to initiate an early dialogue with the general public (see box 6).

Box 6: Consultative participation processes in the Czech Republic

Under Czech law, consultative participation involves any natural or legal person without any limitation and enables the general public to submit comments. Consultative participation takes place in EIA and SEA processes (Act No. 93/2004 Coll.), among others. The Czech national implementation report identified typical problems with consultative participation processes. For instance, general requests by associations to be informed of all initiated proceedings with an impact on the environment are frequently neglected by the authorities, which conclude that, in the given proceedings, the interests of nature conservation and landscape protection would not be affected. Czech law does not adequately stipulate the way in which public comments should be addressed, making public participation a mere formality (e.g. in the discussion of land-use plans). Furthermore, there is no uniform regulation for public participation in proceedings that have an impact on the environment. This allows various interpretations regarding which law should be applied to the proceedings, thereby precluding public participation.

Source: *Synthesis report on the status of implementation of the Convention* (ECE/MP.PP/2005/18).

Access to justice in environmental matters entails the possibility to challenge administrative acts or omissions before an independent and impartial body established by law. The right of access to justice is essentially supportive of the rights of the public to participate in environmental decision-making. In many countries (e.g. Azerbaijan, Belgium, Georgia, Kazakhstan, Portugal, The former Yugoslav Republic of Macedonia, Ukraine) the public has the constitutional right to seek protection of its rights and freedoms in a court of law. The exercise of such rights in practice has been tested in a number of national court cases using obligations under article 9 of the Convention. A growing area of adjudication has been in the application of legal standing.

<center>5. <u>Access to justice</u></center>

In some countries, the courts may state that the contested decision must infringe on the subjective rights of the plaintiff in order to meet the required conditions for bringing an action. Such an infringement frequently cannot be established for a civic association, as such associations can usually successfully demonstrate only an infringement of their procedural rights.[5] Courts have found that plaintiffs had standing to sue based on rights contained in the Convention, which were deemed to take precedent over national law.

In a 2006 review of European cases involving legal standing – either the standing of an individual or that of an organization – the authors found examples of:

• Broadening legal standing (in Hungary for non-membership and non-environmental organizations);
• Confirming rights of participants (to review both substantive and material aspects of a decision in the Czech Republic, or to have a properly reasoned decision denying standing in Slovakia); and

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[5] *Implementation of the Aarhus Convention in EU Member States*, Justice and Environment Case Collection (2006).

- Assuring new positions in standing (for example, in Poland, standing in civil law suits to challenge acts against environment, and in Estonia the standing of environmental NGOs in all issues related to the Aarhus Convention challengeable under national law).

Three of the above-mentioned cases (Czech Republic, Estonia and Hungary) referred to the Aarhus Convention as a legal norm from which rights and obligations stem directly.[6]

Access to justice in cases involving contested grounds for withholding information requested by the public has been impeded in some countries by the high cost of going to court. In Georgia, an NGO was required to pay a court fee equivalent to US$ 1,500. The Czech Republic pointed out that, even if a court overturned a public authority's decision to withhold information, it did not automatically follow that the information was provided.

A few countries reported in 2005 on legislative provisions establishing appeal rights for violations of public participation procedures (e.g. Georgia) or mentioned that such rights were covered by a variety of laws, such as EIA and other environmental laws and administrative procedures laws (e.g. Bulgaria).

6. Aarhus country centres

OSCE plays an important organizing and facilitating role on the ground and has established links with experts in various countries. OSCE primarily works on the Aarhus Convention through its country and field offices. Thus it is a very strong partner in organizing regional and, in particular, national and local-level events and usefully complements UNECE, which has more in-depth expertise but no field presence. OSCE's overall advantages include a presence in the field, high-level status (OSCE Ambassadors often open OSCE-organized events), established links with ministries and the availability of substantial funding. Since 2002, the Office of the Co-ordinator for OSCE Economic and Environmental Activities and OSCE field offices have supported the development of Aarhus centres in EECCA. Aarhus centres promote implementation of the Convention through engagement with civil society and the general public.

At present, OSCE is supporting Aarhus centres in Tirana (Albania), Yerevan (Armenia), Baku (Azerbaijan), Tbilisi (Georgia), Dushanbe (Tajikistan) and Tashkent (Uzbekistan). There are plans to open a centre in Belarus. OSCE through its field offices normally provides seed funding for the Aarhus centre's equipment and materials for two to three years. Sometimes it also pays the rent and staff costs. However, in most cases the Ministry of Environment provides the premises and staff free of charge. Based on an agreement between OSCE and the ministry, the centres are run by a board of experts that ensures NGO representation. The centres complement existing official establishments but aim to be more accessible to users from the public. They provide NGOs, state officials and members of the public with a meeting place for discussing problems and promoting activities related to environmental protection and sustainability. They also provide easy access to environmental information, raise public awareness and provide legal advice. Environmental education initiatives run by the centres promote participation in environmental decision-making and awareness among youth.

Some Aarhus centre remains relatively isolated from the public despite being located in a country's capital city. OSCE has sought to widen access to information and participation in environmental decision-making through a provincial strategy for establishing Aarhus information centres. For example, the OSCE Office in Yerevan, opened in 2002, has supported the establishment of a

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[6] *Implementation of the Aarhus Convention in EU Member States*, Justice and Environment Case Study Collection, 2006.

network of Aarhus centres throughout Armenia. By the end of 2006, five centres were operating in three of the provinces of Armenia to promote the Aarhus principles. In 2004, Aarhus information centres were opened in Osh (Kyrgyzstan) and Khudjand (Tajikistan).

Another strategic consideration in the location of Aarhus centres is their proximity to security "hot spots". The Environment and Security Initiative (ENVSEC) that is implemented jointly by UNDP, UNEP, OSCE and UNECE identified a number of places where environmental issues (in combination with underlying socio-economic and political factors) are potential sources and/or triggers of conflict. In Caucasus and Central Asia, OSCE-supported local Aarhus centres promote dialogue among NGOs, the public and state officials in the context of ENVSEC. These local centres will, where possible, be linked to centres in the capital as well as to each other, providing a foundation for local cross-border cooperation. The Aarhus/Environmental Information Centres in the Ferghana Valley, in addition to regular Aarhus Centre activities, support improving cross-border cooperation in the Ferghana Valley and increasing awareness of environment-security linkages. In the Southern Caucasus, six local centres are being set up and/or supported where the borders of Armenia, Azerbaijan and Georgia meet (see box 7).

Box 7: The Aarhus Centre in Armenia

The Aarhus Centre in Yerevan was established in May 2002 with OSCE support shortly after Armenia ratified the Aarhus Convention. A successful example of cooperation fostered by the centre is the development of the first national report on the Convention's implementation, a draft of which was posted on the centre's website for public comment so that these could be reflected in the final draft. The centre's website, funded by Germany, regularly posts news updates. The centre in Yerevan also promotes public awareness through the media by hosting an annual competition for journalists and offering a special award for coverage of remote areas.

Source: *Environmental Issues and Their Impact on Social and Economic Stabilisation in Armenia: Armenian environmental background report* (OSCE, March 2001).

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7.   The way forward

OSCE and UNECE should intensify their cooperation in promoting the principles of the Aarhus Convention. OSCE and the secretariat of the Convention (UNECE) should continue to organize subregional and national events focused on access to information, public participation and access to justice, with activities related to access to justice being given first priority. Opportunities to create synergies with other multilateral environmental agreements should also be recognized, in particular where the Aarhus principles are relevant to initiatives undertaken in a transboundary context such as the Ferghana Valley.

OSCE and UNECE could also collaborate on subregional initiatives to promote the implementation of pollutant release and transfer registers (PRTRs), in particular in areas prioritized by the ENVSEC Initiative in the South Caucasus, Central Asia and the Western Balkans. The development of PRTR systems can provide a useful platform for building capacity for cross-border information exchange can and build trust between communities, enterprises and governments. But improvements in controlling pollution in EECCA and Western Balkan countries, in particular in the areas of air emissions, water discharges and waste management, will be difficult to achieve without the commitment and cooperation of government, civil society organizations and enterprises. The latter include facilities and installations that are obliged to collect data and report on their environmental impact and their compliance with environmental permits and standards to

the public authorities, as well as those which would be obliged to collect and report as part of national implementation of the UNECE Protocol on PRTRs.

Deepening its involvement with the Aarhus Convention would enable OSCE to improve its convening, catalytic, coordination and cooperation roles in the promotion of environmental security and sustainable development. Whether through establishment of new Aarhus information centres, capacity-building for the judiciary or the development of PRTRs, the opportunities for OSCE participating States to meet their environmental commitments in the region have never been greater. A specific proposal to intensify OSCE/UNECE cooperation on the subject is annexed to this report (annex II B).

C.   Compliance with multilateral environmental agreements

UNECE five environmental conventions[7] form a cornerstone for UNECE international environmental policy and the basis for many national actions to protect man and his environment and promote sustainable development in the region. The conventions and their associated protocols can claim much success – many OSCE participating States are parties to the instruments and share in their benefits.

Even so, ministers at the fifth Ministerial Conference "Environment for Europe" in Kiev (2003) stressed that "greater emphasis should be placed on compliance with and national implementation of these instruments". Their Ministerial Declaration also drew attention to the needs of several individual MEAs[8] for States to better implement their provisions and/or promote speedy ratification.

Yet even today, the governing bodies of the conventions agree that further implementation of the MEAs is needed. Many countries are still not party to agreements that are relevant for them, while some that are Parties fall short in honoring their obligations.

1.   Trends in membership

Substantive progress has been made in the ratification of five UNECE environmental conventions: the LRTAP Convention has 51 Parties, the EIA Convention 41 Parties, the Aarhus Convention 41 Parties, the IA Convention 35 Parties and the Water Convention 35 Parties. The European Community (EC), as a regional economic integration organization, is a Party to all five conventions. A table on the ratification of conventions and protocols in UNECE subregions is annexed to this report (annex I).

Important information can be gained from considering those countries that have failed to ratify or accede to either the conventions or their protocols. While individual national reasons for failure to ratify may vary, the geographic patterns of non-Parties can provide an indication of more widespread, generic problems that merit further investigation.

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[7] The Convention on Long-range Transboundary Air Pollution (LRTAP Convention), the Convention on Environmental Impact Assessment in a Transboundary Context (EIA Convention); the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention); the Convention on the Transboundary Effects of Industrial Accidents (IA Convention), and the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention).

[8] Ministerial Declaration, ECE/CEP/94/Rev.1). In Kiev, Ministers adopting the Protocol on Strategic Environmental Assessment, the Protocol on Civil Liability and the Protocol on Pollutant Release and Transfer Registers invited all eligible States to become parties to these instruments, and all interested UNECE States that had not yet ratified or acceded to the Conventions to do so at the earliest opportunities.

For example, it is clear that most European Union (EU) Member States are Parties to all five conventions and to many of their protocols, but there are far fewer Parties in SEE and in EECCA. For some conventions, it is clear that EECCA and SEE countries more readily accede to the conventions than to the protocols, which often have more specific obligations.

It is of particular concern that those countries that might benefit most from being party to conventions and protocols have not ratified them. Possible reasons include a lack of political commitment, a lack of awareness of the obligations, a lack of technical, administrative and financial capacity, a lack of coordination among relevant national authorities, and other obstacles to national implementation and compliance. The lack of political commitment is of special concern and may be an increasing factor in some countries; without political commitment it may be difficult to address other shortfalls.

2.   Achievements in national implementation

Publications/reports on the status of national implementation of the conventions show their increasing application by increasing numbers of Parties. The majority of Parties have introduced adequate legislative frameworks for proper implementation of the provisions of the conventions. Where necessary, most Parties have designated competent authorities/points of contact (e.g. the EIA Convention and the IA Convention) and have engaged in bi- or multilateral cooperation (IA Convention, EIA Convention, Water Convention).

Overall targets for most pollutants covered by protocols to the LRTAP Convention are being met, and most Parties to the protocols are meeting their individual obligations; indeed, some are achieving much more than the set targets through effective national action. Emissions of all pollutants covered by the protocols have declined, and recovery from environmental effects, such as acidification, is now being observed. Only a few Parties have been identified as failing to meet the requirements they have signed up to.

The Parties to the IA Convention are making further progress with identification and notification of hazardous activities. However, this is not always the case in EECCA and SEE, where there are problems of proper identification and notification as well as in meeting the specific requirements of the Convention.

The level of implementation of the Aarhus Convention vary across the UNECEW region. This may depend, *inter alia,* upon countries' legal traditions and experiences in democratic governance. Overall Parties have had least problems in implementing access-to-information provisions, though in EECCA and SEE there remain important obstacles to implementing measures for handling information requests.

The Water Convention has played a crucial role to support the establishment and strengthening of transboundary cooperation. Most of the agreements negotiated since the break-up of the Soviet Union, with the creation of new transboundary waters, are modelled on the Convention.

3.   Challenges to national implementation

Despite the apparent commitment, there are weaknesses and problems in the conventions' implementation in certain countries. Reports and publications highlight specific difficulties for implementation, such as the access to justice pillar of the Aarhus Convention, the application of appropriate preventive measures under the IA Convention or the setting up of river basin

management structures under the Water Convention. Some typical issues often encountered in relation to individual conventions are considered below.

Legislative framework

In a number of countries of EECCA and SEE, work to build adequate legal and institutional frameworks to implement the provisions of the conventions is insufficiently advanced. Concerning industrial accidents, many countries have in place a legal framework for preventing and responding to emergencies, including industrial accidents. This is, however, not the case for some EECCA and SEE countries whose legislation does not always meet all the requirements of the IA Convention. As a consequence, implementation may fall short especially on measures to prevent accidents and prepare for emergencies, as well as on ensuring effective cooperation.

Despite progress, regulatory reforms in the field of water are far from complete in EECCA countries and have resulted in some gaps and contradictions between new laws, decrees, codes and regulations.

Institutional framework: coordination and cooperation between competent national authorities

It appears that many countries struggle to coordinate government departments and agencies for effective implementation. For the LRTAP Convention, emissions from agriculture, transport, industry and energy must be considered together in meeting the obligations under the Gothenburg Protocol. This presents major challenges for some countries, though bringing the various sectors together has shown that a strongly integrated approach is a powerful way of dealing with such complex problems.

For the Water Convention, one of the main challenges is the undefined, shared responsibility within national authorities and the lack of coordination between them. In EECCA, the ongoing reform of ministerial environmental departments and water agencies is an opportunity to harmonize responsibilities for water management and improve cooperation among entities involved in monitoring and assessment. On the other hand, a never-ending reform of institutions and their responsibilities and assignments could seriously hamper the continuity and sustainability of cooperation and the implementation of the Water Convention.

For the Aarhus Convention, with respect to the methods used for introducing necessary legislative, regulatory and other measures, several EECCA countries reported on the existence of national implementation plans and the creation of special working groups. As expected, ministries of environment were lead authorities in promoting implementation efforts, and they have sought to involve other public authorities, for instance, by creating inter-ministerial groups. However, two major obstacles for the implementation of the Convention are: (a) poor implementation by public authorities at the local and provincial levels; and (b) poor implementation by public authorities other than ministries of environment.

Successful implementation of the IA Convention requires "vertical" cooperation and coordination between national authorities and local authorities as well as with industry and the public. Equally important is the "horizontal" cooperation and coordination between authorities involved in implementing specific parts of the Convention. For EECCA and SEE countries especially, further improvements in cooperation are needed between national authorities; between national, regional and local authorities; and with industry. For these countries capacity-building activities relating to adequate institutional frameworks are important.

Obsolete technology

Obsolete technology in the industries of the EECCA and SEE countries is an obstacle for implementation of the IA and LRTAP Conventions in particular. Many industrial facilities in these countries are not modernized and still use obsolete and polluting technologies, sometimes in outdated and poorly maintained installations. The level of risk at such installations is already high and will probably grow with any increased use of capacity. To make matters worse, any industrial accident would affect both human health and the environment in an already vulnerable society.

Funding

Insufficient domestic funding, in particular in EECCA and SEE countries, is a major barrier to implementing the MEAs. Many activities are resource limited, and more effective funding in targeted areas could lead to major improvements in implementation. For example, most EECCA and SEE countries have difficulties under the IA Convention in responding to emergencies, including operation of points of contact in the UNECE Industrial Accidents Notification System. This is mainly due to insufficient and unstable funds for equipment and personnel training.

All conventions using monitoring for their implementation suffer from lack of monitoring stations in some parts of the UNECE region. Foreign assistance programmes, as well as increased allocations from national budgets, are beginning to address these problems. Substantial costs are involved in translation of documentation for the EIA Convention. Regarding the access to justice pillar of the Aarhus Convention, in some countries costs are too high for citizens to bring cases to court and there is a need for pro bono legal services.

4.   Mechanism and procedures to promote implementation

The mechanism and procedures used by MEA bodies to implement the instruments can have a marked effect on the level of national implementation. This complement to the activities under a convention may be defined and governed by the legal text itself, or may be developed in parallel or following adoption of the instrument. It is an area where Parties collectively implement and develop the MEAs through their own experience and knowledge of practices in other forums.

Formal mechanisms for review of compliance, and committees to carry out the reviews, have operated for several years under the LRTAP Convention, the EIA Convention and the Aarhus Convention, and are being established for the Protocol on Water and Health under the Water Convention. The existence of compliance regimes has increased awareness of and action on national implementation of MEAs. In addition to addressing individual cases of non-compliance, they can enhance the implementation of the conventions in general.

The vast majority of EECCA and SEE countries are faced with insufficient institutional frameworks, limited human resources capacities and scarce financial resources, though the economic situation overall has improved in most countries in recent years. Parties to all conventions have realized that without assistance these countries will not be able to build the capacity needed for effective implementation of the conventions. There are capacity-building activities under all conventions, sometimes organized in consolidated programmes.

5.   The way forward

The convention bodies are keen to promote implementation and have developed a number of mechanisms for this. Reporting, compliance procedures, capacity-building, funding mechanisms and public participation all contribute to strengthening the instruments and their implementation. Reporting is key to assessing successful implementation, but not all parties to MEAs report effectively and on time. While electronic reporting has helped some countries, others need to take reporting more seriously. Funding of essential work, especially that for international coordination, either through trust funds or through in-kind contributions has been essential for achieving the current level of implementation, but such funding needs to be sustained. Capacity-building has also proved to be an essential mechanism for achieving implementation in many countries with economies in transition.

More effort should be devoted to effective national implementation, since this is key to success. In doing this, countries should make use of mechanisms developed under the conventions. Governing bodies of the conventions should continue to explore opportunities for developing mechanisms to aid implementation across the region, in particular for capacity-building and sustainable funding, as well as for sharing their information and experience with regions outside UNECE. National coordination between the authorities involved in the implementation of an MEA should be further improved.

UNECE and OSCE should strengthen their cooperation promoting the implementation of MEAs building on the current activities under the Aarhus and Water Conventions.

III.   IMPROVING WATER MANAGEMENT AND TRANSBOUNDARY WATER COOPERATION

Conference on Security and Co-operation in Europe, Final Act, Helsinki 1975
Fields for cooperation

Water pollution control and fresh water utilization
Prevention and control of water pollution, in particular of transboundary rivers and international lakes; techniques for the improvement of the quality of water and further development of ways and means for industrial and municipal sewage effluent purification; methods of assessment of fresh water resources and the improvement of their utilization, in particular by developing methods of production which are less polluting and lead to less consumption of fresh water.

Meeting on the Protection of the Environment of the Conference on Security and Co-operation in Europe, Sofia 1989
Conclusions and Recommendations

On the basis of the discussions held during the Meeting, the participating States recommend:
…..
- that UNECE elaborate a framework convention on the protection and use of transboundary watercourses and international lakes.

A.   Integrated water resources management: a new approach to water management

The concept of integrated water resources management (IWRM) emerged from the international conferences on water and environmental issues in 1992. This new approach, in contrast to "traditional", fragmented water resources management, promotes the coordinated development and management of water, land, and related resources to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

For the EU countries, the Water Framework Directive (WFD) has established the framework for implementation of IWRM. The WFD's main goal is to establish a framework for the protection of all waters, including surface waters, groundwaters and transitional and coastal waters, taking into account ecological, economic (including pricing) and social functions throughout the entire river basin. The WFD specifies that "good status" must be achieved for all European waters by 2015 and that water use must be sustainable throughout Europe. The Directive applies the river basin principle for the protection and management of water resources at the level of the river basin district by a designated competent authority and through the adoption and implementation of a river basin management plan.

In EECCA and SEE the development of IWRM and the fulfilment of the Johannesburg targets have been significantly slower. IWRM is not the main priority in most EECCA water development and management practices and/or policies. Only four countries (Armenia, Moldova, the Russian Federation and Ukraine) base national water policy on IWRM, and only three countries (Armenia, Kazakhstan and Ukraine) have IWRM plans. The main IWRM challenge in EECCA is cross-sectoral integration. While there are many basin management organizations, these organizations have no mandate for IWRM and deal only with water distribution and that only in one (sub)sector. In SEE the responsibilities of different authorities involved in water management need to be clarified and their coordination improved before IWRM can be implemented.

The overall economic situation makes it difficult to finance capital investment in EECCA and SEE for water protection such as building water treatment installations or more efficient irrigation systems. It is also difficult to find resources to decrease the risk of accidents involving hazardous installations, tailing dams, and so on. Inadequate domestic funding is a major barrier and requires efforts to prioritize issues and actions in strategies and programmes, to set clear (and when possible, quantified) targets and deadlines for implementation, and to attract international donors.

Many initiatives have been developed to support IWRM in SEE and EECCA. Most noteworthy is the EU Water Initiative, launched at the WSSD in 2002, which includes EECCA and Mediterranean components. These components aim to support the implementation of the MDG on safe drinking water and sanitation and the development of IWRM and water efficiency plans. National Policy Dialogues are currently being initiated to support this process. The EECCA countries currently involved are Armenia and Moldova.

1. Water use and availability

Water resources and population are unevenly distributed in the UNECE region, and therefore countries and subregions are experiencing differing degrees of water stress. While overall the pan-European region abstracts a relatively small portion of its total renewable water resources each year (an average of 7% of the long-term available resources), 12 countries representing a third of the region's population can be considered water-stressed.

On average, 44% of total water abstraction in the UNECE region is used for agriculture, 40% for industry and energy production (cooling in power plants), and 15% for public water supply. But water uses and abstraction differ considerably in the region. In some Mediterranean countries, the public water supply can reach a very high proportion of total water abstraction (e.g. 34% in Cyprus, 87% in Malta) and seasonal demands vary considerably due to the inflow of tourists in summer. In the EECCA countries agriculture, industry and energy production are the dominating water uses, while public needs account for less than 15%.

Total water abstraction in the region has decreased by more than 20% during the last 15 years. The decrease was fastest from 1991 to 1997. Most of the decrease occurred in the EECCA countries and the new EU Member States, as a result of the decline in abstraction in most economic sectors. Since the late 1990s annual water use by agriculture, energy cooling and industry has remained nearly constant. Huge irrigation schemes (e.g. in Turkey) put great pressure on water resources.

Overuse of groundwater is a problem in the UNECE region, with overexploitation of groundwater for irrigation in agricultural areas (e.g. Greece, Italy, Spain and the United States) and for drinking water purposes in urban centres. As a result, the water supply of some 140 million European city dwellers comes from overexploited groundwater resources.

2. Water quality and drinking water

Preliminary results of the assessment of transboundary waters in the UNECE region carried out under the Water Convention show that some 20% of the rivers in the Caucasus and Central Asia, including most of the transboundary rivers in mountain areas, still have "high and good status". However, some of these water bodies show signs of increasing pollution or are threatened by mining and ore processing. In many cases, long-range air pollution of glaciers and high-mountain catchment areas is another potential source of increased pollution. The majority of the rivers in EECCA fall into the category "water bodies with moderate pollution". Rivers which take up their pollution load in lowland areas and/or foothills with intensive industrial and agricultural activities

are considered "polluted". Insufficiently treated wastewaters add to the pollution load. The pollution of these rivers and subsequent pollution of drinking water sources have resulted in an increase in water-related diseases in the region. Many rivers in these areas have become practically unfit for drinking-water supply. Ever-increasing eutrophication is the most serious phenomenon affecting transboundary lakes.[9]

Before 1990, in EECCA and SEE, large volumes of effluents were discharged into surface water bodies from municipal, industrial and agriculture sources, causing pollution of surface and groundwaters. With the collapse of many industries and reduced agricultural activities in the early 1990s, pollution decreased. However, the reduction generally did not result from the introduction of pollution control technologies such as improved wastewater treatment. Moreover, a number of polluting activities are ongoing, notably mining and metallurgical and chemical industries. In the future, with expected economic growth and the need to increase agricultural outputs, pollution charges are likely to increase unless stringent measures to cut application rates, such as wastewater treatment facilities and good agricultural practices, are more widely used.

Although the use of certain dangerous pesticides has been banned, unauthorized use of old pesticides (reported to be occurring in some transboundary river basins) and leakages from old stocks of DDT will continue to be an important pressure factor.

Despite investment in better wastewater treatment, eutrophication is still s major environmental problem affecting all types of water in Europe. It is caused by large inputs of nutrients (nitrogen and phosphorus) from a range of human activities. Run-off from agricultural land (diffuse losses) is the principal source of nitrogen pollution. Agriculture typically contributes 50%–80% of the total load. For phosphorus, point sources such as households and industry still tend to be the most significant source, but the input from agriculture is far from negligible.

According to WHO more than 100 million people in Europe still do not have access to safe drinking water or adequate sanitation. While there is generally continuous access to good quality drinking water in North-Western Europe, the supply in EECCA and SEE is often intermittent and of poor quality, and the quality of water supply and sanitation services has deteriorated over the past 15 years.

In the European part of EECCA water pollution by toxic and chemical substances represents the more immediate problem, while in the Central Asian countries microbiological pollution of drinking water is more important.

In EECCA and SEE countries many users now receive water for less than 24 hours a day. The daily switching on and off of the network allows pollutants to contaminate the network and increases wear on the infrastructure. Leaks allow cross-contamination between water and sanitation networks.

WHO estimates that unsafe water, sanitation and hygiene results in 18,000 premature deaths each year in Europe, mostly in EECCA and SEE, and mostly among children.

The entry into force in 2005 of the UNECE Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and Lakes is a major step to address these problems. The Protocol, which was adopted in 1999 and has been ratified by 20 countries, aims to protect human health and well-being through better water management, including the protection of

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[9] *Preliminary assessment of transboundary rivers and lakes in Eastern Europe, Caucasus and Central Asia* (ECE/MP.WAT/2006/16 and its addenda 1 to 6).

water ecosystems, and by preventing, controlling and reducing water-related diseases. The Protocol is the first international agreement of its kind adopted specifically to attain an adequate supply of safe drinking water and adequate sanitation for everyone, and to effectively protect water used as a source of drinking water.

To meet these goals, Parties are required to establish national and local targets for the quality of drinking water and the quality of discharges, as well as for the performance of water supply and wastewater treatment. They are also required to reduce outbreaks and the incidence of water-related diseases. This Protocol introduces a social component into cooperation on water management. Water resources management should link social and economic development to the protection of natural ecosystems. Moreover, improving the water supply and sanitation is fundamental for breaking the vicious cycle of poverty.

3. Extreme events

Flooding and drought

UNECE countries are experiencing more floods than ever before. During the last five years Europe suffered over 100 major damaging floods with severe economic and social impact (e.g. catastrophic floods along the Danube and Elbe rivers in summer 2002, in northern Caucasus in July and August 2002, in the Alps in summer 2005 and along the Danube in spring 2006). Since 2000 floods in Europe have caused at least 700 deaths, the displacement of about half a million people and at least EUR 25 billion in insured economic losses.

In the years 2000 and 2001 parts of Central Asia were hit by a severe drought. The 2000 drought was called the "worst in 95 years", and the 2001 drought was even more devastating, at least for the districts of Uzbekistan close to the Aral Sea, Khorezm and Karakalpakstan. SEE countries are increasingly facing long periods of droughts which harm their economies. During the 2003 heat wave and drought much of southern and central Europe experienced a substantial drop in crop yields.

Inappropriate river management (canalization, culverting, regulation), soil sealing and deforestation are major contributors to the risk of flooding.

The main impacts of droughts include water supply problems, shortages and deterioration of quality, intrusion of saline water into groundwater bodies and increased pollution of receiving water bodies (there is less water to dilute pollutant discharges) and a drop in groundwater levels. Drought has major economic impacts.

High leakage losses of water in water distribution systems and poor management and maintenance of irrigation systems and unsustainable cropping patterns exacerbate the impacts of droughts. The latest climate change scenarios suggest significant summer drying across many parts of Europe, in particular in the south.

Recognizing the acuteness of the floods and drought challenges in the UNECE region, the Parties to the UNECE Water Convention in 2000 adopted the *Guidelines for Sustainable Flood Prevention*, which contain recommendations for measures and management practices to prevent, control and reduce adverse impact of flood events on human health and safety, on valuable goods and property and on the aquatic and terrestrial environment. The Guidelines were incorporated into the work of the European Union in the European Flood Action programme and the negotiations on a Directive on the assessment and management of floods.

Effects of climate change

The main climate change consequences related to water resources are increases in temperature, shifts in precipitation patterns and snow cover, and a likely increase in the frequency of flooding and droughts. The effects of climate change on water will differ widely from area to area. Higher temperatures will generally intensify the global hydrological cycle. Annual precipitation trends in Europe indicate that northern Europe has become wetter by 10%-40% over the last century, whereas southern Europe has become up to 20% drier. Over the last century annual river discharge has increased in some northern areas, while it has fallen in others, including southern Europe.

Climate change may also markedly affect seasonal variation in river flows. Higher temperatures will push the snow limit upwards in northern Europe and in mountainous areas, and this in conjunction with the decrease in precipitation falling as snow, will result in higher winter run-off of northern European, central Asian and mountain-fed rivers such as the Rhine, the Danube and the Syr Darya. Moreover, earlier spring melts will lead to a shift in peak flow levels. As a result of the declining snow reservoir and decreasing glaciers, there will be less water to compensate for low flow rates in summer.

As climate change tends to increase the frequency and intensity of rainfall, it is likely that the occurrence of flooding due to heavy rainfall events will increase. Groundwater recharge may also be affected, and the availability of groundwater for drinking water may be reduced in some areas.

To address these challenges, the Parties to the Water Convention decided in 2006 to develop guidance on Water and Climate Adaptation by 2009. The Guidance will be targeted to support cooperation and decision-making in transboundary basins on a range of issues related to climate change, including possible impacts of climate change on flood and drought occurrences, health-related aspects and practical ways to cope with the transboundary impacts through, *inter alia,* integrated management of surface and groundwater for flood and drought mitigation and response, land use, regional and spatial planning and land use management.

B.   Transboundary water cooperation

1.   Cooperation at the regional level

Attempts to solve the above-mentioned complex water management problems in the pan-European region are complicated by the essentially transboundary nature of water resources. The region has several hundred transboundary water bodies, including 200 transboundary rivers, 40 lakes and around 120 transboundary aquifers. Twenty European countries depend on neighbouring countries for more than 10% of their water resources, and five countries draw 75% of their resources from upstream countries. Hungary and Romania, for example, receive between 50% and 75% of their total water resources from neighbouring countries. The reasonable and equitable use of transboundary waters is a major challenge in the entire region. Interstate distribution of water is a particular challenge in EECCA and SEE countries with arid or semi-arid climates.

In the 1990s, changes in Europe created new and compelling challenges to regional cooperation in general and cooperation on environment and security in particular. With the emergence of new countries, new frontiers cut through Europe. One example is the Danube river basin, the largest European transboundary river basin, which is now shared by 19 countries. Other examples include the Daugava, Dnepr, Kura, Syr Darja and Amu Darja rivers and Lake Peipsi, which became transboundary waters after the break-up of the Soviet Union.

The UNECE Water Convention provides a legal framework for regional cooperation on shared water resources (rivers, lakes and groundwaters). It has played a crucial role in the region to support the establishment and strengthening of cooperation. Several bilateral or multilateral agreements between European countries are based on its principles and provisions. A first example was the Danube River Protection Convention in 1994, which develops the Convention's provisions in a more specific subregional context. Other examples are the agreements on the Bug, Meuse, and Scheldt rivers, on Lake Peipsi, and on Kazakh-Russian and Russian-Ukrainian transboundary waters. The most recent examples include the 1999 Rhine Convention and the European Union's WFD.

After the adoption of the Protocol on Water and Health in 1999, Parties to the UNECE Water Convention in 2003 adopted the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters. The Protocol establishes, for the first time in international practice, a regime of compensation for ecological damage resulting from accidental pollution of transboundary waters. The Protocol deals with the prevention of industrial accidents through preparedness for and response to their transboundary effects. Its purpose is to promote international cooperation in the protection of human beings and the environment by preventing such accidents insofar as it is feasible, reducing their number and severity, and mitigating their effects.

2. Transboundary water cooperation in the European Union

With regard to transboundary waters, the WFD provides for the establishment of international basin districts, encouraging the use of already existing structures created by international agreements in force. When a river basin extends beyond EU territory, the Member States concerned should, in accordance with the WFD, seek to ensure appropriate coordination with a non-EU country in order to achieve the objectives of the WFD for the entire basin of a transboundary watercourse. The EU WFD and the UNECE Water Convention are thus complementary in their obligations to establish cooperation on shared water basins.

3. South-Eastern Europe

Effective management of transboundary water bodies is of particular importance in SEE since 90% of the territory of the SEE countries lies in transboundary river basins. Ratification and implementation of the UNECE Water Convention in SEE still needs to be strengthened. Major challenges regarding the management of transboundary water resources in the SEE region include:

(a)   *Water quantity management*. In several cases, one-sided exploitation of water resources by upstream parties causes critical water supply and allocation problems for downstream users and affects the natural water cycle in wetlands and aquifers;

(b)   *Water quality management*. Water in some shared water bodies is unfit for the supply of drinking water or even for bathing without extensive treatment. In most cases water quality is continuing to decline. Shared water bodies have been used as convenient sinks for urban and industrial wastewater. Unsustainable agricultural practices worsen the problem. In some cases investments in municipal wastewater treatment and regulation of industrial effluents and agricultural runoff have been introduced, but these only partly address the problem;

(c)   *Flood management*. All rivers in the SEE region are subject to irregular flooding, and annual flood damage is likely to increase, given the prevailing unsustainable management practices at the national level and limited investment in flood mitigation.

The development of cooperation in the Danube River and Sava River basins and a number of projects facilitating transboundary water activities are examples of progress, as is cooperation in transboundary flood prevention, protection and mitigation. But for a number of transboundary watercourses cooperation and joint management are insufficient or non-existent. To ensure stable cooperation and joint sustainable management of transboundary waters, the existing legal framework for cooperation needs to be strengthened, outdated agreements revised and missing ones developed.

4.   Eastern Europe, Caucasus and Central Asia

In EECCA countries, transboundary waters are a major source of drinking water and a crucial resource for agriculture. In the 1990s, several bilateral and multilateral agreements were developed in the EECCA region and joint commissions were established. In many cases these agreements follow the principles of the Water Convention. New agreements were concluded between Estonia and the Russian Federation on the Lake Peipsi/Chudskoe–River Narva basin; between Belarus and the Russian Federation; between Kazakhstan and the Russian Federation; and between Kazakhstan and Kyrgyzstan on the Chu and Talas rivers. Implementation of the 1992 agreement between the States in Central Asia to continue the cooperation on and allocation of water in the Syr Darya and Amu Darya basins according to practices and quantities used in Soviet times has been very important for a region with restricted access to water.[10]

In the past few years, international cooperation between countries has weakened somewhat, and the existing legal framework is still incomplete and in need of revision. Moreover, transboundary water cooperation deals largely with water sharing, while environmental limits and water quality are rarely the subject of transboundary cross-sectoral integration.

Attention should be given to drawing up/enhancing agreements in the following river basins:

- Amu Darya, shared by Afghanistan, Tajikistan, Turkmenistan and Uzbekistan;
- Syr Darya, shared by Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan;
- Zeravshan, shared by Tajikistan and Uzbekistan;
- Kura, shared by Armenia, Azerbaijan, Georgia, the Islamic Republic of Iran and Turkey;
- Samur, shared by Azerbaijan and the Russian Federation;
- Psou, shared by Georgia and the Russian Federation;
- Bug, shared by Belarus, Poland and Ukraine; no agreement exists between Belarus and Poland;
- Daugava/Zapadnaya Dvina, shared by Belarus, Latvia and the Russian Federation; no agreement exists between Belarus and Latvia; and
- Nemunas, shared by Belarus, Lithuania and the Russian Federation; no agreement exists between Belarus and Lithuania.

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[10] *Status and plans of EECCA countries in fulfilling the WSSD target on IWRM-plans by 2005*, Andriy Demydenko, A Transboundary Water Information Exchange Network for the Southeast Europe http://www.watersee.net/. Water Series No 4: *Transboundary Water Cooperation – Trends in the Newly Independent States*. UNECE 2007.

The further development of cooperation on the Dnieper and Dniester is important. There is also a need to formalize cooperation on smaller rivers, for example in the Fergana Valley of Central Asia and smaller rivers shared by the Islamic Republic of Iran and Turkmenistan.

Transboundary water management suffers from problems at the national level. Despite progress, regulatory reforms in the field of water are far from complete in EECCA countries and have resulted in some gaps and contradictions between new laws, decrees, codes and regulations. Many regulatory documents dating from the former Soviet Union are still in force, so it is not always clear which regulations apply in a specific case. It is also often impossible to comply with these norms, whether because appropriate measuring devices or financial and human resources are lacking or because they are not economically feasible or realistic.

At the same time there are many examples of successful transboundary integration where EECCA countries cooperate with their neighbours inside and outside EECCA.

Transboundary cooperation provides a comparative advantage for IWRM, particularly "trading" in water, which is, however, inhibited by unclear and controversial situations involving land tenure arrangements and water ownership issues. On the other hand, this cooperation is largely successful in water supply (distribution) management. Even where real cross-sectoral integration takes place for transboundary watercourses (like hydropower-irrigation integration in the Naryn–Syr-Darya basin), this integration is handled by other organizations, not by water commissions established for transboundary water coordination.

Challenges for transboundary cooperation include undefined shared responsibilities of national authorities and the lack of coordination between them. In many EECCA countries, the water sector has undergone more than two major reforms since 1991. Ongoing reform of institutions and their responsibilities and assignments has seriously hampered the continuity and sustainability of cooperation and the implementation of the Water Convention.

5.   The way forward

Improving the status of waters in EECCA and SEE will first and foremost require investments in municipal sewage treatment facilities, which often also receive wastewater from small and medium-sized enterprises. Many of these facilities are outdated. In addition to sewerage, manufacturing and waste management are challenge areas. This includes waste storage ponds containing hazardous waste from mining, metal processing and chemical industry. Illegal waste disposal along rivers and old and often uncontrolled waste disposal sites will generate increasing pollution, if they are not properly taken care off. The control of non-point pollution in agriculture calls for better policy integration. Strategies are also needed to adapt water management to climate change.

Many EECCA and SEE countries have struggled to match their administrative resources with the tasks of a sovereign country. In some cases they lack the necessary human resources, or the staff involved in transboundary cooperation do not have the required expertise. The capacity of managers of transboundary waters, especially at the local level, should be strengthened in order to increase their understanding of the complexity of managing shared water resources and strengthen their negotiation, hydro-diplomacy and conflict resolution skills.

UNECE and OSCE should continue their cooperation on transboundary waters. A specific proposal to intensify this cooperation is annexed to this report (annex II A).

IV. PROVIDING INFORMATION TO DECISION-MAKERS AND RAISING PUBLIC AWARENESS

A. Environmental information

Environmental monitoring and assessment systems are crucial for environmental policy. Improving and harmonizing data availability, parameters and quality are important, both at the national and international levels. National decision makers need the best available data and high-quality assessments in order to take immediate action to prevent and reduce adverse environmental impacts and to develop legislation, policies, plans and programmes. International forums, such as the "Environment for Europe" Ministerial Conferences, can review environmental information across countries, and governing bodies of MEAs can check country compliance with international obligations.

Conference on Security and Co-operation in Europe, Final Act, Helsinki 1975
Fields for cooperation

… (M)onitoring, forecasting and assessment of environmental changes
Study of changes in climate, landscapes and ecological balances under the impact of both natural factors and human activities; … harmonization of statistical data, development of scientific concepts and systems of monitoring networks, standardized methods of observation, measurement and assessment of changes in the biosphere; assessment of the effects of environmental pollution levels and degradation of the environment upon human health …

Eleventh Meeting of the OSCE Ministerial Council, Maastricht 2003
OSCE Strategy Document for the Economic and Environmental Dimension

We will regularly assess the state of our environment, building on the work already done by international organizations in the UN system such as UNECE, UNEP, UNDP, WMO and FAO.

We will share and disseminate this information on the state of our environment, on a voluntary basis, among all the participating States so that all parties which are or might be affected by environmental degradation are fully informed about the current situation and potential dangers…

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1. Monitoring networks

There is strong evidence of gaps, weaknesses and inconsistencies in raw data collection in several areas of importance for environmental policymaking in the region. Priority areas for improving environmental monitoring capacities include air quality, soil contamination, waste management, water quality, biodiversity and chemicals.[11] The development of appropriate data flows in these areas is required so as to allow regular national and international indicator-based reporting that enables progress to be assessed and preventive or corrective measures to be taken.

A number of OSCE participating States, although members of relevant MEAs and international organizations, do not submit data, or else their submissions are incomplete or do not cover the agreed time intervals (see the example of Moldova in box 8).

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[11] *Lessons Learned from Data Collection for the Kiev Report* (EEA and UNECE, 2003) (ECE/CEP/101) (http://www.unece.org/env/documents/2003/ece/cep/ece.cep.101.e.pdf)

Box 8: Major environmental data gaps in Moldova
The current monitoring networks remain insufficient to meet the requirements of the national legislation and international obligations of Moldova. Monitoring does not cover several important point sources of groundwater pollution, diffuse pollution of surface waters is not measured and there is not a single background monitoring station in the country. The lists of ambient quality parameters have not been revised or harmonized with international standards since Moldova became independent, except the drinking water quality parameters, which are being revised to meet WHO requirements. *Source*: *Second Environmental Performance Review – Republic of Moldova* (UNECE, 2006) (ISBN 92-1-116939-9) (http://www.unece.org/env/epr/countriesreviewed.htm).

In many Western European countries it is widely recognized that some of the systems for monitoring and gathering information about the environment are inefficient and wasteful. They generate excessive amounts of data on subjects which do not merit it, and they fail to provide timely and relevant information on other subjects where there is an urgent policy need for better-focused information, and for consistent environmental assessment and reporting.[12]

Nor do existing environmental monitoring system in EECCA and SEE meet all policy needs. In some countries, the large volume of data produced on certain topics contrasts sharply with the difficulty in using these data to support decision-making. Many countries still follow obsolete monitoring approaches, concepts, standards and methodologies, which are not harmonized with evolving international methodologies and do not meet data requirements for policy- and decision-making.[13] In many EECCA and SEE countries, owing to economic difficulties, the number of stations measuring aspects of the quality of the environment has been reduced compared with the early 1990s. As a result, many EECCA countries, for instance, self-assessed their current ability to report data on the core list of EECCA environmental indicators as being from 40% to 80%.[14]

The importance of environmental monitoring should be adequately backed at the political level. A higher level of national investment, in particular in EECCA and SEE countries, is required. Environmental monitoring investments are needed especially for raw data collection (networks), processing capacities (human resources) and equipment (computer hardware and software).

Furthermore, there is a need to establish an effective bridge between a responsive monitoring system and a relevant reporting process in support of decision-making. Countries in EECCA and SEE should start revising their monitoring programmes by making monitoring a practical tool for policy target setting, pollution abatement strategies and measuring progress in achieving policy targets and effectiveness of abatement measures.

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[12] See, for instance, *Europe's Environment: The Third Assessment* (EEA, 2003).

[13] for EECCA see *Environmental Monitoring and Reporting in Eastern Europe, the Caucasus and Central Asia* (UNECE, 2003) ISBN 92-1-116848-1)
(http://www.unece.org/env/europe/monitoring/EnvMonRep/index.html) and *Environmental Monitoring and Assessment – Eastern Europe, the Caucasus and Central Asia* – CD-ROM
(UNECE, 2004) (ISBN 92-1-002114-2)

[14] See *Core Set of Environmental Indicators for Eastern Europe, the Caucasus and Central Asia* (UNECE, 2003)
(http://www.unece.org/env/europe/monitoring/Indicators/Core_indicators_for_EECCA.En.pdf)

2.   Environmental indicators and reporting

Indicators

The OSCE participating States currently use a wide variety of environmental indicators when publishing governmental state-of-the-environment (SoE) reports and compendia of environmental statistics. Many countries that are members of OECD and/or the European Union produce data regularly on agreed lists of indicators (those of OECD, Eurostat and EEA), not only to meet their reporting obligations to these organizations or institutions but also for publication in national environmental assessment reports and policy documents.

Since the late 1990s, SEE countries have been reporting data to EEA on its indicators (see a discussion of the Serbian example in box 9). There are wide gaps in this reporting, and the reported data are rarely used for the production of national environmental assessment reports.

Box 9: Reporting on indicators in Serbia

Before 2002, assessment and indicators processing were a very weak part of the information provision process. Some progress has been made since then, mostly due to the establishment of the Environmental Protection Agency (EPA). In cooperation with EEA, a set of indicators has been produced for the preparation of the Belgrade Assessment in 2007. Out of the set of 37 EEA core indicators (of which three related to the sea are not applicable in Serbia), Serbia was able to report on 20 indicators, with varying degrees of quality and compliance with the proposed methodologies. The situation is worse for air, with only one indicator (exceedance of air quality) calculated, and with low reliability. No indicators are available on emissions, including greenhouse gases. For water the situation is better, although data are by far not comparable within the country or in the international context, because of the use of a methodology different from that proposed by EEA.

Source: Second EPR of Serbia, UNECE, forthcoming.

Until recently, EECCA countries had no agreed list of environmental indicators. When indicators were published at the country level, they frequently represented bulky figures in tons and cubic metres that did not help decision makers or the general public to understand the causes and effects of environmental conditions, to link these with economic and social developments, to assess the cost-effectiveness of policy implementation or to make comparisons with other countries.

The involvement of the EECCA countries in the preparation of pan-European assessment reports for "Environment for Europe" Ministerial Conferences triggered their interest in the development of an agreed set of indicators. Consequently, experts from EECCA countries in UNECE, in close cooperation with EEA, selected *a core set* of environmental indicators for application in EECCA.[15] To make the core set of the EECCA countries' environmental indicators operational, UNECE agreed to prepare practical guidelines for their application. The resulting *Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia*[16] cover 36 indicators that were evaluated as being (a) most important from the viewpoint of national and international requirements, (b) understandable to the public and (c) supported, to the extent possible, by international methodological guidance. Presence on other international indicator lists (e.g. those of UNCSD, EEA and WHO) was an important additional selection criterion.

The Guidelines are expected to help in:

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[15] http://www.unece.org/env/europe/monitoring/Indicators/Core_indicators_for_EECCA.En.pdf
[16] http://www.unece.org/env/europe/monitoring/Belgrade/CRP1.Indicators.En%20edited.MK..pdf

(a) Improving the systems of environmental monitoring and reporting for the purpose of environmental decision-making and public awareness raising;
(b) Making national environment assessments comparable with those of other UN member states; and
(c) Facilitating data gathering for future pan-European environmental assessment reports.

Indicator-based reporting

Until recently, OSCE participating States have been publishing various types of environmental assessments and reports, each with its own scope, level of detail and periodicity. Many OECD and EU countries have recently transformed their national SoE reports into indicator-based assessments that link data and information to policy targets and make it possible to evaluate progress in achieving these targets. Most SEE and EECCA countries are lagging behind in this area. The UNECE overview of SoE reporting notes that in EECCA countries, the "development of SoE reports is prone to serious difficulties". Common problems include a need to better define report objectives, structure, indicators used and target audiences. Moreover, countries across the subregion have to strengthen the legislative basis, financing and inter-ministerial coordination in this field.[17] There is a similar situation in several SEE countries (see box 10).

Box 10: Lack of environmental reporting in Bosnia and Herzegovina

There is no environmental reporting either to the state or to the entities. Parliaments and governments do not receive state-of-the environment reports to use as a basis for law- and policymaking. The absence of regular objective scientific assessments of the state of the environment and of trends in the main environmental indicators leads to difficulties in appreciating the impacts and the effectiveness of decisions taken. Information to the general public is provided mostly through newsletters and irregular brochures and upon request.

Source: *Environmental Performance Review #20 – Bosnia and Herzegovina* (UNECE, 2005) (http://www.unece.org/env/epr/studies/bosnia_and_herzegovina/welcome.htm)

The *Guidelines for the Preparation of Indicator-based Environment Assessment Reports*[18] recently prepared by UNECE represent an important contribution to improve the situation. Their objective is to provide the relevant government bodies with practical guidance on improving the analytical parts of state (national and territorial) environmental assessment reports so that these reports can support the setting of priorities and targets for environmental policy and the assessment of efficiency of environmental measures. Implementation of these guidelines will also help the EECCA and SEE countries to compare their national indicator values with those in neighbouring countries and in other UN member States.

3. Monitoring by enterprises

Substantial improvements in environmental monitoring and data collection are needed in some parts of the region, especially in areas such as air emissions, water discharges and waste

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[17] *Use of Environmental Indicators in Government Reports on the State of the Environment in the Countries of Eastern Europe, the Caucasus and Central Asia* (UNECE, 2003) (CEP/AC.10/2003/6/Rev.1) (http://www.unece.org/env/documents/2003/cep/ac.10/cep.ac.10.2003.6.e.pdf). See also: *Status of Environment Record-Keeping in the Newly Independent States* (UNECE, 2002) (CEP/AC.10/2002/18) (http://www.unece.org/env/documents/2002/cep/ac.10/cep.ac.10.2002.18.e.pdf) and *Electronic Networking And Databases* (UNECE, 2005) (CEP/AC.10/2005/3) (http://www.unece.org/env/europe/monitoring/5thMeeting/CEP-AC.10-2005-3.pdf)
[18] http://www.unece.org/env/europe/monitoring/Belgrade/CRP2.Assessment.En%20edited.MK.pdf

management. Such improvements are difficult to achieve without the commitment and cooperation of enterprises.

The main problems with the existing enterprise environmental monitoring and reporting systems in EECCA and SEE are frequently the following:[19]

(a)   Shortcomings or contradictions in basic requirements for enterprise environmental monitoring and reporting in legislation;
(b)   Weak coordination and communication between various environmental, health and statistics authorities at different levels in handling and exchanging environmental data that are collected and reported by enterprises;
(c)   Lack of trust between public authorities and enterprises;
(d)   Lack of a commitment by the general management of industries to environmental issues and a tendency to delegate these to an environmental department or an individual within the company.

As a rule, enterprises report data on emissions, discharges and waste and some additional environmental data (e.g. on land use, environmental expenditures) to statistical offices only. Although in a few EECCA and SEE countries these data are also made available to environmental authorities, in most cases the data on environmental pressure are not related to environmental quality or impact data collected by environmental authorities. This greatly inhibits the analysis of interlinkages in the environmental causality chain, which is indispensable for decision-making (see box 11).

Box 11: Compliance monitoring in EECCA

In a few countries, enterprises are obliged to report quarterly or annually specific emission data to local environmental authorities. Annual reporting on polluting emissions into the atmosphere in Kazakhstan is one example. These data are generally used for checking compliance with environmental permits or established limit values and adjusting the payments due for air emissions, wastewater discharges and waste generation. These payments are established for long lists of polluting substances and compounds. For instance, air pollution charges in Azerbaijan are levied on 88 different pollutants, while in Tajikistan charges for the discharge of pollutants into water bodies are specified for 197 compounds. Neither the reported data nor the results of sporadic checks by environmental authorities are assembled and published in environmental or statistical reports. As the mandatory statistical forms do not cover most of the compliance monitoring data, they remain in the archives of enterprises, local environmental inspectorates and state analytical laboratories.

Source: Enterprise Environmental Monitoring and Reporting in Eastern Europe, The Caucasus And Central Asia (UNECE, 2005) (CEP/AC.10/2005/5)
(http://www.unece.org/env/europe/monitoring/5thMeeting/CEP-AC.10-2005-5.pdf)

Self-monitoring requires that enterprises have reliable monitoring equipment and quality control standards for monitoring and record-keeping. This is not always the case in EECCA and SEE. Generally only large enterprises have their own environmental analytical laboratories.

Increasing the quantity of environmental information produced by enterprises, improving the quality of this information and enhancing access to it by the general public will help decision-making at various levels concerning the prevention and reduction of adverse environmental impacts by enterprises. This will strengthen monitoring of enterprise compliance with

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[19] On EECCA, see *Enterprise Environmental Monitoring and Reporting in Eastern Europe, The Caucasus And Central Asia* (UNECE, 2005) (CEP/AC.10/2005/5)
(http://www.unece.org/env/europe/monitoring/5thMeeting/CEP-AC.10-2005-5.pdf)

environmental regulations. It will also help to improve data collection in order to produce national environment assessment reports and other assessments for decision-making. Importantly, it will help public authorities report data under multilateral environmental agreements and programmes.

The development and implementation of effective environmental monitoring programmes by enterprises will have value added for them as well. Better enterprise environmental data collection will help the management to understand the effects of the company's environmental performance on profitability, market value and investment decisions. It will help increase efficiency in energy and resource use and the overall cost-effectiveness of the process, since good enterprise environmental monitoring provides useful information relating to energy use and materials flow.

Cooperation with business and industry on this issue will be an effective response to the general need to make environmental protection a shared responsibility of different stakeholders and to promote socially responsible behaviour by industry, especially in the environmental field. Such cooperation would be a good example of a strategic partnership between public authorities and the private sector.

There are some initiatives in EECCA to link data on the environmental pollution load of enterprises with local ambient environmental quality data in order to establish environmental impact. The development of a "local" monitoring programme in Belarus is one example (see box 12).

Box 12: Linking enterprise monitoring with environmental quality monitoring in Belarus

Belarus has been developing a new monitoring system since 2000 to provide information about the pollution load of major pollution sources and their compliance with environmental regulations. The intention is to link this information with ambient environmental quality to establish environmental impact. Initially, this so-called local monitoring programme covered 33 enterprises. Most of these were part of the Belneftekhim concern, which included large plants and conglomerates with aggregate emissions ranging from 2,000 to 55,400 tons per year. Municipal wastewater treatment plants with wastewater flows ranging from 243,000 to 270,430,000 m^3 per year were also included. In 2003, 80 enterprises reported data on their wastewater discharges. This covered 75% to 88% of all discharges in the basins of the Neman, Zapadnaya Dvina, Zapadnyi Bug and Dnepr rivers. The discharge data were compared with data from the Hydrometeorology Department on water quality in the recipient water bodies upstream and downstream from the discharge points to establish an environmental impact.

In 2003, 76 enterprises, representing 53% of total air emissions in Belarus, reported their emission data. Data covered total annual emissions and monthly average and maximum single emission volumes, and were compared with the emission limits. By 2004, the system covered 156 enterprises, which report data on their air emissions and their wastewater discharges into surface waters.

Source: Second Environmental Performance Review – Belarus UNECE (New York and Geneva, 2006) (http://www.unece.org/env/epr/countriesreviewed.htm)

To support these initiatives and to help EECCA and other interested countries resolve existing problems with enterprise monitoring, UNECE, in cooperation with other international entities, prepared the *Guidelines for Strengthening Environmental Monitoring and Reporting by Enterprises.*[20] The Guidelines result from the examination of good practices throughout the

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[20] ECE/CEP/2007/9
(http://www.unece.org/env/europe/monitoring/Belgrade/Enterprise%20Guidelines.Rev.En.Revised%2012.12.06.pdf)

UNECE region and from discussions with major stakeholders, including government bodies at the national and subnational levels responsible for environmental policy, environmental monitoring and compliance monitoring, as well as with statistical agencies, business and industry representatives and associations, and civil society organizations.

4.   The way forward

EECCA and SEE countries have to undertake effective measures for the adaptation of their systems for environmental monitoring, data collection and environmental reporting to requirements of policy making and public information. The legal and regulatory basis should ensure, first of all, that a specially authorized state body responsible for the preparation, publication and dissemination of environment assessment reports has been designated, and that publication of reports is financed from the state budget.

Constructive dialogue will have to be established between operators, public authorities and members of the public in order to strengthen enterprise environmental monitoring and reporting. Mandatory environmental monitoring requirements may relate, first of all, to enterprises with a certain threshold capacity in the main polluting sectors of economic activity in the country, irrespective of their ownership.

Public authorities should encourage operators to establish and enhance enterprise environmental monitoring programmes that go beyond regulatory requirements. Specific legal approaches, policy considerations and inducements may be considered to promote voluntary auditing and EMS, and publication of open environmental and sustainability reports through which stakeholders, clients and members of the public get information about the operator's environmental performance.

OSCE could join UNECE in its efforts to build, in cooperation with the EEA and other partners and stakeholders, monitoring and assessment capacities of EECCA and SEE countries. A specific proposal for cooperation on the subject is annexed to this report (annex II C).

B.   Education for sustainable development

1.   From environmental education to education for sustainable development

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The OSCE Meeting on the Protection of the Environment, Sofia 1989
Conclusions and recommendations

The participating States will … encourage education and instruction on environmental protection, promote the reproduction, circulation and exchange of information and data, as well as of audio-visual and printed material, on environmental issues, and encourage public access to such information, data and material.

One approach to promoting sustainable development that has gained prominence recently is education for sustainable development (ESD). Even if sustainable development is not a scientific concept, enabling understanding of the different interactions involved in it is crucial. Decision-makers and ordinary citizens would benefit from more learning. The United Nations Decade for Education for Sustainable Development, launched in 2005 under UNESCO's leadership, highlights the importance of education in achieving sustainable development.

Environmental education is being transformed as this topic is integrated into ESD. The role of education in ensuring a democratic and sustained future has become clear, and the following pillars have been recognized as the foundation for education: *learning to live together, learning to know, learning to do* and *learning to be*.[21] Empowering individuals with these skills has been recognized as the key prerequisite for effective cooperation and security.

Responding to this new challenge, high-level representatives of environment and education ministries of the OSCE participating States adopted a UNECE Strategy for ESD (Vilnius, 2005). Countries committed to incorporating themes relating to sustainable development into their formal education systems, in all relevant subjects, and into non-formal and informal education. These themes include poverty alleviation, peace, ethics, democracy, justice, security, human rights, health, social equity, cultural diversity, economy, environmental protection and natural resource management. The following six objectives establish a framework for implementation: (1) Ensure that policy, regulatory and operational frameworks support ESD; (2) promote sustainable development through formal, non-formal and informal learning; (3) develop the competence within the education sector to engage in ESD; (4) ensure that adequate tools and materials for ESD are accessible; (5) promote research on and development of ESD; and (6) strengthen cooperation on ESD at all levels within the region.

2. Achievements and challenges

The OSCE participating States committed to achieving progress in implementing ESD as follows: (a) phase I (until 2007) – take stock of existing activities, implement initial measures, define priorities for further activities; (b) phase II (until 2010) – start integrating SD into learning programmes and curricula, review progress made in the implementation of the national strategies and revise them, if necessary; and (c) phase III (until 2015) – make considerable progress in implementing ESD.[22]

On the first day of the Sixth Ministerial Conference "Environment for Europe", a special joint session of environment and education ministers will consider progress made and challenges encountered during Phase I and identify ways to further improve the effectiveness of ESD implementation. It will be the first time that ministers from two sectors come together for a joint decision, also encouraging other sectors to cooperate in support of sustainable development.

Most countries in the region have established education systems staffed by professional educators; ensured access to basic education and equal rights to education for all; and achieved high levels of literacy. However, there are still challenges involved in implementing ESD effectively. Because ESD is cross-sectoral, interdepartmental and multi-stakeholder cooperation, including the establishment of consultative mechanisms, is a prerequisite for effective implementation of ESD. There is a need to improve education systems to address the interdisciplinary nature of ESD and mobilize adequate legislative, policy, institutional and material provisions.

Obstacles to implementation, particularly in EECCA and SEE countries include lack of understanding of the concept of ESD in administrations, insufficient political support, limited resources at different levels for effective action, inadequate involvement of civil society, inertia in education systems and various problems in specific sectors of the economy. Economic incentives to support ESD appear to be lacking in many countries. Especially in EECCA and SEE countries,

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[21] Report *"Learning: the treasure within"*, which was addressed to UNESCO in 1996 by the International Commission on Education for the Twenty- first Century.
[22] See UNECE Strategy for ESD (UNECE, 2005; CEP/AC.13/2005/3/Rev.1) and Indicators for ESD. Reporting Format (UNECE, 2006; ECE/CEP/AC.13/2006/5/Add.1).

most activities in the field of ESD are financially supported by international NGOs and donor organizations. For these countries, the lack of resources remains a major obstacle to implementation (see box 13).

**Box 13. Some common obstacles to implementation of ESD
in EECCA and SEE**

- No distinction made between environmental education and ESD concepts; limited application of social and economic components of ESD
- Legislative gaps in laws on education; lack of coordination between the responsible authorities and institutions
- Inadequate qualifications of teachers and other staff of the education sector, especially in rural areas
- Lack of training of trainers
- Outdated programmes, lack of appropriate teaching materials and limited access to modern communication technologies
- General lack of financial and human resources

Source: Workshops for SEE and EECCA subregions (Athens, 2005, and Moscow, 2006) (http://www.unece.org/env/esd/events.htm).

However, some progress has been made in implementing the key initial measures. For example, most countries have taken steps to introduce ESD into their policy and legislative documents. A majority have addressed it in national strategies for sustainable development, while in a few countries it is included in other policy documents (e.g. strategies for environmental protection, strategies for poverty eradication). Some countries have started drafting their national implementation plans and introducing ESD into the curriculum and learning programmes. The majority of countries confirmed that they had completed translation of the strategy into the national official language(s) and the establishment of focal points and a consultative mechanism for the strategy's implementation. Box 14 gives an example of a good country practice for developing a national ESD programme.

Box 14: Learning for Sustainable Development: the Dutch platform for ESD

The national programme "Learning for Sustainable Development" covers most ESD-related activities in the Netherlands. The funding for this programme is 20 million euros for a 4-year period. The programme is managed by an intergovernmental steering committee, which includes the representatives from six ministries (Ministry of Agriculture, Nature Management and Food Quality; Ministry of Housing, Spatial Planning and the Environment; Ministry of Education, Culture and Science; Ministry of Foreign Affairs; Ministry of Transport, Public Works and Water Management, and Ministry of Economic Affairs). The representatives of the following stakeholders are also involved in the work of the Steering Committee: provincial authorities, water boards, Earth Charter and the National Committee for Sustainable Development.

Source: National Implementation Report on the UNECE Strategy for ESD, Netherlands (UNECE, 2007).

Of the key sustainable development themes currently being addressed at various levels of formal education, the environment component of ESD is the main one being adopted by educational institutions. In most cases, subjects in this category focus purely on the environment, especially in EECCA and SEE countries. Leading topics are air and water pollution, waste management and energy conservation. In some countries, such as Greece, Finland, Hungary, Kyrgyzstan and the Netherlands, a more integrative concept of ESD is emerging, but in the majority of countries social

and economic components of ESD are rarely addressed. Environmental topics seem to be addressed at all ISCED levels,[23] whereas topics such as poverty alleviation, ethics and philosophy, human rights, citizenship, corporate social responsibility, economics and rural/urban development tend to be dealt with only in higher education.

While in general none of the strategies for implementing ESD in formal education (e.g. through existing subjects only; a cross-curricular approach; the provision of specific subject programmes or a stand-alone project) is more developed than any other, there are differences between subregions. EECCA countries tend to focus more on the integration of ESD issues in existing subjects, such as ecology, social studies, economic and the sciences, while EU and other West European countries follow more of a cross-curricular approach.

Little has been done to develop ways of assessing the extent to which learning outcomes meet ESD-related criteria. Current quality assessment and accreditation schemes still focus on traditional learning outcomes such as discipline- oriented knowledge. Nevertheless, there are examples of developments in this field. For example, the Czech Republic has developed an award scheme related to the ecological footprint of schools, and Greece uses the Eco-management and Audit Scheme for education purposes.

Incorporating sustainable development into education requires new competencies, and competence building in ESD is necessary at all levels of formal education. The development of competence in ESD is a major challenge which has not yet been a part of the initial training and re-training of educators, leaders and decision makers in the education sector. Therefore, competence-building efforts are necessary at all levels of formal, informal and non-formal education in all countries across the region.

While ESD-related materials are produced and disseminated in many countries, many countries confirmed that a national strategy for encouraging the development of such materials and mechanisms to support their dissemination do not exist. Evaluating and controlling the quality of the materials is still a challenge for most countries.

Regarding research into ESD, more work is needed on issues such as effective learning methods; ways of incorporating aspects of sustainable development into different subjects; approaches to managing educational institutions; use of ICT; the economic effects of and incentives for ESD; and evaluation tools. Emphasis should be put on research that involves different dimensions of sustainable development. It is also important to share the results of research and examples of good practices. Post-graduate programmes focusing on or addressing ESD are scarce, and only a few countries indicate they have government-supported scholarships for post-graduate research on ESD.

Considerable steps are also being taken for cooperation on ESD at subregional levels There are a number of subregional intergovernmental processes, including Agenda 21 for ESD in the Baltic Sea region; the Central Asian Inter-State Working Group on ESD, the Mediterranean Education Initiative for Environment and Sustainability (see box 15); and the North American Association for Environmental Education. ESD has recently received prominent recognition in the framework of the European Union. For example, the newly amended EU Sustainable Development Strategy highlights the importance of ESD as a "cross-cutting policy contributing to a knowledge society".

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[23] International Standard Classification of Education (ISCED) was designed by UNESCO to serve 'as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally.

Box 15. MEdIES as a tool for subregional cooperation

MEdIES is a Mediterranean network on ESD for engaging the educational community in Agenda 21 and the MDGs through the implementation of innovative educational programmes on sustainable development. It was launched as a Type II Initiative at the World Summit on Sustainable Development (2002) by the Government of Greece. Greece's Ministry of Environment and Ministry of Education, Italy's Ministry of Environment, UNESCO, UNEP/MAP, GWP-Med and MIO-ECSDE comprise the Core Group that approves proposals and reviews activities. The Task Group includes ministries (environment and education), NGOs, universities and schools which plan and implement projects together with the Network of Educators. Under the auspices of MEdIES, an initial package of education materials has been translated into most of the languages relevant to this subregion (including SEE languages) and is being implemented by educators and students throughout the subregion.

Source: Compilation of Good Practices in ESD/Greece (UNECE-UNESCO, 2007)

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3.   The way forward

Since ESD is a rather new and evolving concept, using a variety of cooperation methods, such as exchanges of experiences, advisory services and pilot projects, would enhance countries' efforts to apply it. "Learning from each other" should become a key slogan for the implementation process.

All Governments of OSCE participating States should undertake: (a) capacity-building projects on thematic issues identified through workshops, trainings, roundtable debates and the like, and (b) development of new instruments and materials (e.g. methodological guidance for selected target groups). Many SEE and EECCA countries do not have sufficient human and financial resources to implement the strategy on their own, and yet they are responsible for implementing it. Their efforts to do so effectively need to be supported.

The priority action area for the SEE subregion[24] is developing a programme with two interlinked key elements: (a) creating a critical mass – training of trainers; and (b) developing teaching materials. A team of international experts would deliver training for different target groups in interested countries. Teachers would institute a separate target group. Priority action areas for the EECCA subregion[25] include annual seminars for national focal points and stakeholders; training of educators, national focal points and other decision makers; joint research and exchange programmes; and a digital catalogue of ESD resources and the creation of a discussion forum.

OSCE could join UNECE in its efforts to promote ESD. A specific proposal for this cooperation is annexed to this report (annex II D).

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[24] Workshop for SEE subregion (Athens, 2005).
[25] Workshop for EECCA subregion (Moscow, 2006).

V. CONCLUSIONS AND RECOMMENDATIONS

The OSCE participating States have made considerable progress in implementing their environmental commitments. These achievements have been uneven within and among participating States, and much remains to be done to resolve existing problems and address new challenges. It is recommended that governments of the OSCE participating States should strengthen their political support to resolving persistent environmental problems, increasingly involving civil society as a partner and using international environmental commitments as leverage.

Governments of EECCA and SEE countries should urgently address the serious bottlenecks caused by weak environmental institutions by strengthening the level, mandate and capacities of the environmental authorities to make these more competent and effective; by clarifying institutional task sharing; and by consolidating enforcement structures. To increase the effectiveness of environmental financing, they should review procedures, improve institutional capacity, and make proper use of economic instruments. Also, governments in all EECCA and SEE countries should adjust their environmental priorities and develop more realistic environmental programmes and strategies for their effective funding.

More effort should be devoted to effective national implementation of MEAs. Governments of the OSCE participating States should continue to explore opportunities for developing mechanisms to aid implementation across the region, in particular for capacity-building and sustainable funding, as well as for sharing their information and experience with regions outside UNECE. National coordination between the authorities involved in the implementation of an MEA should be further improved.

Improving the status of waters in EECCA and SEE will first and foremost require investments in municipal sewage treatment facilities. Areas needing attention include sewerage, manufacturing and waste management. Illegal waste disposal along rivers and old and often uncontrolled waste disposal sites generate increasing pollution when they are not properly taken care of. The control of non-point pollution in agriculture calls for better policy integration. Strategies are also needed to adapt water management to climate change. The capacity of managers of transboundary waters should be strengthened to increase understanding of the complexity of managing shared water resources and to strengthen their negotiation and conflict resolution skills.

There is a need to make monitoring and assessment an effective instrument in environmental policymaking at both the national and international levels. UNECE *Recommendations to Governments of EECCA Countries for the Application of Environmental Indicators and the Preparation of Indicator-Based Environment Assessment Reports* will help these and other interested countries to transform environmental data into policy messages and will enhance the comparability of national environment assessments throughout the region. EECCA countries and other interested countries should also implement the *Guidelines for Strengthening Environmental Monitoring and Reporting by Enterprises* to establish strategic partnerships with business and industry in improving environmental data collection and observations.

A wide range of relevant actors should carry out implementation of the UNECE Strategy for ESD. Governments of the OSCE participating States would be the major players. Public authorities, intergovernmental and non-governmental organizations, regional environmental centres and the education community would all take part in the implementation. Each actor would contribute its experience, financial and in-kind means in the most effective way so as to ensure synergies.

OSCE and UNECE should intensify their cooperation to promote the implementation of country environmental commitments. Annex II contains specific proposals to this effect.

Annex I

RATIFICATION OF CONVENTIONS AND PROTOCOLS IN UNECE SUBREGIONS

Numbers indicate the number of States that have ratified each instrument. Numbers in parentheses show the total number of countries in each subregion.

Instrument – year of adoption	EU[26] (28)	EECCA (12)	SEE (7)	Other Europe (7)	North America (2)	Total (56)
LRTAP – 1979	28	9	7	5	2	51
Water – 1992	24	6	2	3	0	35
EIA – 1991	27	7	3	3	1	41
IA – 1992	25	6	2	3	0	36
Aarhus – 1998	27	10	2	1	0	40
EMEP[27] – 1983	28	3	5	4	2	42
1st sulphur[28] – 1985	15	3	0	3	1	22
NOx[29] – 1988	23	3	0	3	2	31
VOC[30] – 1991	17	0	0	4	0	21
2nd sulphur[31] – 1994	21	0	1	4	1	27
HM[32] – 1998	21	1	0	4	2	28
POPs[33] – 1998	22	1	0	4	1	28
Gothenburg[34] – 1999	18	0	0	2	1	21
Water and Health – 1999	13	4	2	2	0	21
PRTR – 2003	2	0	0	0	0	2
SEA – 2003	5	0	1	0	0	6
Civil liability – 2003	1	0	0	0	0	1

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[26] These figures include the European Community and its Member States.

[27] Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollution in Europe (EMEP).

[28] Protocol on the Reduction of Sulphur Emissions or Their Transboundary Fluxes by at Least 30%.

[29] Protocol Concerning the Control of Emissions of Nitrogen Oxides or Their Transboundary Fluxes.

[30] Protocol Concerning the Control of Emissions of Volatile Organic Compounds or Their Transboundary Fluxes.

[31] Protocol on Further Reduction of Sulphur Emissions.

[32] Protocol on Heavy Metals.

[33] Protocol on Persistent Organic Pollutants.

[34] Protocol to Abate Acidification, Eutrophication and Ground-level Ozone.

Annex II

PROJECT PROPOSALS TO INTENSIFY OSCE/UNECE COOPERATION

A. Improving water and health in South-Eastern Europe and in Eastern Europe, Caucasus and Central Asia

1. Background

An estimated 140 million people (one person in seven) in the UNECE region lack access to safe drinking water and adequate sanitation, and are therefore vulnerable to water-related diseases. Lack of access to safe drinking water, poor sanitation and inadequate management practices are at the root of diseases such as cholera, bacillary dysentery, typhoid fever, hepatitis A and malaria and threaten the health of millions of people, most prominently in countries in South-Eastern Europe (SEE) and in Eastern Europe, Caucasus and Central Asia (EECCA). Of the roughly 877 million people in the European part of UNECE, almost 140 million (16%) do not have a household connection to a drinking-water supply, 85 million (10%) do not have improved sanitation and over 41 million (5%) do not have access to a safe drinking-water supply.

The situation is, if possible, even more tragic as overall access to safe water and sanitation has not improved over the last 15 years. For certain countries in the region – including Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Kyrgyzstan, Tajikistan, The former Yugoslav Republic of Macedonia, Turkmenistan and Uzbekistan –an average of 45.6% of the rural population lack access to improved sanitation, and 59.2% of the rural population lack access to a household drinking-water connection. A recent estimate of mortality from diarrhoeal disease attributable to poor water, sanitation and hygiene, showed that 13,500 deaths a year of children under 14 years of age in the UNECE region are due to poor water conditions. The above-mentioned countries make the largest contribution to this burden, with over 11,000 deaths.

The 1999 Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes was negotiated to address these issues. The Protocol entered into force in August 2005. Of its 21 Parties, only six countries from SEE and EECCA (Albania, Azerbaijan, Croatia, Moldova, the Russian Federation and Ukraine), the subregions which would particularly benefit from it, had ratified it to date.

The main aim of the Protocol is to protect human health and well-being through better water management, including the protection of water ecosystems, and by preventing, controlling and reducing water-related diseases. The Protocol is an important tool linking social and environmental aspects and addressing development and poverty issues. The Protocol is closely linked to several Millennium Development Goals.

To achieve this objective, the Protocol request Parties to establish targets and target dates tailored to their environmental, social and economic conditions in a number of areas linked to water supply and sanitation, health protection and water and environmental management. Parties are requested to periodically assess progress towards their targets and report on their implementation. Such a mechanism of setting targets, target dates and review of progress is essential for progressive and sustainable implementation of the Protocol.

The Parties to the Protocol decided at their first meeting (17–19 January 2007) to establish a Task Force on Indicators and Reporting to assist countries in setting targets and target dates as requested by the Protocol, and to develop guidelines for reporting on the progress achieved towards the targets.

2. Objective

The main objective of this project proposal is to develop and strengthen the capacity of countries in SEE and EECCA to set targets and target dates and review and assess progress according to the Protocol on Water and Health. This will support Parties' capacity to implement the Protocol and facilitate ratification by non-Parties.

To this aim the following activities will be carried out:

- Meetings of the Task Force on Indicators and Reporting with participation of experts from SEE and EECCA;
- Development of guidelines for target setting and guidelines for review and assessment of progress that take into account needs and specificities of countries with economies in transition. The guidelines will be made available in English and Russian;
- Organization of a workshop in 2008 to share experience with setting targets and target dates in the UNECE region;
- Preparation of a report on drinking water and health in the UNECE region.

3. Expected accomplishments

(a) Parties in EECCA and SEE will develop their strategy and road map to implement the Protocol on Water and health, tailored to their needs and capacity;

(b) Increased compliance by EECCA and SEE Parties with the Protocol provisions;

(c) Increased ratification of the Protocol on Water and Health in EECCA and SEE;

and therefore ultimately

(d) Improved access to safe water and adequate sanitation in EECCA and SEE, improved water management and reduction of water related disease.

4. Duration

The tentative duration of the project is 1 July 2007 – 31 December 2008.

5. Budget estimate

The total estimated costs are USD 150,000. Costs cover organizational expenses, travel of participants, consultancy fees, printing costs, etc.

B. Building capacity for environmental monitoring and reporting by enterprises and public authorities in Central Asia

1. Background

Substantial improvements in environmental monitoring and data collection are needed in Central Asia to address the problems of local and transboundary pollution in the region. Existing or potential pollution from industrial facilities, hazardous and radioactive waste sites has been identified as one of three main groups of issues relevant to environment and security in the Ferghana Valley, home to 20 per cent of Central Asia's population.

Under the auspices of the UNECE the Parties to the Aarhus Convention negotiated a PRTR Protocol to promote substantial pollution reductions and thereby reduce pressures on natural resources and human health and improve environmental performance in the region.

Adopted in Kiev in May 2003 by 36 States and the European Community, the Protocol seeks to enhance environmental performance and reduce pollutant loadings, thereby alleviating pressures on natural resources and human health, while improving public confidence in, and the competitiveness of, private and state enterprises. In Central Asia, Tajikistan has signed but not yet ratified the Protocol. Kyrgyzstan and Kazakhstan have expressed interest in acceding to the Protocol in the near future.

Some public authorities and enterprises may lack the necessary awareness, incentives, and technical ability and infrastructure to implement the monitoring and reporting requirements of PRTR systems. Strengthening enterprise environmental monitoring and reporting is needed to prepare enterprises to comply with the national reporting obligations in conformity with the Protocol's requirements.

The UNECE Working Group on PRTRs, recognizing that training for environmental personnel of reporting facilities is needed to overcome capacity deficits, adopted a framework programme on PRTR capacity-building. Communication and coordination also need to be strengthened among authorities responsible for monitoring pollutant releases and transfers. Systems for communicating PRTR information to the public will further need to be established, if registers are to work effectively as instruments to promote public participation in environmental decision-making.

Among the key proposed subregional and national activities of the framework programme are (a) development of strategies on establishing national PRTR systems, in cooperation with relevant government agencies, NGOs, and other stakeholders; (b) identification of needs and priorities to develop legislative and institutional frameworks for PRTRs; and (c) workshops on legal, institutional and/or technical themes related to the Protocol's implementation.

The UNECE Working Group on Environmental Monitoring and Assessment recently prepared the *Guidelines on Strengthening Environmental Monitoring and Reporting by Enterprises*, which provide public authorities and enterprise management in EECCA countries with a set of recommendations. As a follow-up, the Working Group is considering the feasibility of developing industry-specific manuals on environmental monitoring programmes by enterprises in EECCA.

2. Objective

The main objective of this project is to develop and strengthen the capabilities of Central Asian countries to adopt and implement pollutant release and transfer registers under the Protocol on

PRTRs. Through the development of legal, institutional and technical knowledge of PRTR systems, the project would increase the competencies of enterprise managers, public servants, civil society organizations and community advocates to improve the local and national environment, reduce pressures on natural resources and human health, and improve the overall environmental performance and competitiveness of enterprises.

To this aim the following activities will be carried out:

- Two national capacity-building workshops in Central Asia countries (Kazakhstan and Tajikistan/Kyrgyzstan) aimed at training experts in enterprise monitoring and reporting using PRTRs and UNECE Guidelines on Strengthening Environmental Monitoring and Reporting by Enterprises
- Preparation of training and outreach materials in support of the workshops and increasing awareness of PRTR systems
- Development of a pilot distance learning training module in the English and Russian languages, to be hosted on the UNITAR Virtual Classroom for PRTRs (http://prtrvc.unitar.org).

The United Nations Institute for Training and Research, the State Committee for Environmental Protection and Forestry of the Republic of Tajikistan and two NGOs ("Greenwomen" Public Association, Kazakhstan and "Eco-Accord", Russian Federation) have offered to partner with UNECE on the preparation and implementation of the Central Asian PRTR capacity-building programme. Through cooperation with the UNEP/Chemicals Unit, the proposed capacity-building activities would also support implementation of the Stockholm Convention on Persistent Organic Pollutants and the Strategic Approach to International Chemicals Management (SAICM), which view national PRTR systems as a key tool for environmental monitoring and reporting.

3. Expected accomplishments

(a) Strengthen capacities of enterprises, governments and NGOs for understanding and developing PRTRs;

(b) Augment enterprise management responsibility for regulatory compliance and the prevention and reduction of adverse impacts of pollutant releases and waste transfers on the environment;

(c) Promote understanding among enterprise management of the effects of the company's environmental performance on profitability, market value, and investment decisions;

(d) Foster pilot projects in selected enterprises or sectors resulting in progress towards developing national or regional PRTR systems;

(e) Make progress in establishing national PRTRs and in ratification and implementation of the Protocol on PRTRs; and

(f) Prepare and launch a distance-learning training module on the PRTR Virtual Classroom.

4. Duration

The proposed duration of the project is 1 September 2007 – 31 December 2008.

5. Budget estimate

The total estimated costs are EUR 75,000. Costs cover organizational expenses, preparation of materials, travel of participants and the launch of a distance learning module on the UNITAR Web portal.

C. Environmental indicator-based assessments in Eastern Europe, Caucasus and Central Asia

1. Background

EECCA countries produce various types of environmental assessments and reports, each with its own scope, level of detail and periodicity. Most are of a descriptive nature. When indicators are used therein, they frequently represent bulky figures in tons and cubic metres that do not help decision makers or the general public to understand the causes and effects of environmental conditions, to link these with economic and social developments, to assess the cost-effectiveness of policy implementation or to make comparisons with other countries.

Recent developments in the UNECE region have led to new requirements for environmental reporting at the national level. Many OECD and EU countries have transformed their national state-of-the-environment (SoE) reports into indicator-based assessments that link data and information to policy targets and make it possible to evaluate progress in achieving these targets. EECCA countries are lagging behind in this area. Two countries, Azerbaijan and Tajikistan are not publishing national SoE reports at all and have to establish the necessary legal, institutional and operational frameworks to start producing indicator-based assessment reports as soon as possible.

The *Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia* covering 36 priority indicators and the *Guidelines for the Preparation of Indicator-based Environment Assessment Reports* prepared by UNECE, in cooperation with the European Environment Agency (EEA), for the upcoming Ministerial Conference "Environment for Europe" provide EECCA governments with practical guidance on producing modern assessment reports that can support the setting of priorities and targets for environmental policy and help assess the efficiency of environmental measures. Implementation of these guidelines will also help the EECCA countries to compare their national indicator values with those in neighbouring countries and in other States.

The work on the Guidelines has already had an impact in some countries. For instance, the Government of Uzbekistan, with support from UNDP, has completed a project on "Environmental indicators for monitoring the state of the environment in Uzbekistan". The main task of this project was to develop, on the basis of UNECE indicators for EECCA, a national system of reporting on environmental indicators and to adapt the UNECE Indicator Guidelines to country specifics. As a follow-up, an Internet-based environmental information system (EIS) integrated with a geographic information system for Uzbekistan is being developed. It will help produce the indicators and the national SoE report.

To implement the *Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia* and the *Guidelines for Indicator-based Environment Assessment Reports*, governments of EECCA countries have to undertake a series of measures for the adaptation of their systems for environmental monitoring, data collection and environmental reporting. They will have to review and, where necessary, clarify the responsibilities of public authorities to ensure that each of the environmental indicators included in the Indicator Guidelines is backed by measurements, calculations and regular data collection. The existing coordination mechanisms among monitoring institutions will have to be reviewed to strengthen inter-agency cooperation. The legal and regulatory basis should ensure, among other things, that a specially authorized state body responsible for the preparation, publication and dissemination of reports has been designated.

2. Objective

The main objective of this project is to develop and strengthen the capacities of EECCA countries to produce data on the internationally agreed set of environmental indicators and to publish regular environment assessment reports based on these indicators. Through the development of relevant legal, institutional and technical knowledge and practical experiences, the project would increase the competencies of public authorities in EECCA in linking data and information to environmental policy-making and to the assessment of the efficiency of environmental measures.

It is proposed to:

- Establish a network of EECCA focal points responsible for indicator-based environment assessment reporting to exchange experiences and to assist those countries that do not have mechanisms for periodic SoE reporting to set them up using the above-mentioned UNECE Guidelines;
- Organize two meetings of the EECCA focal points to train them in the practical application of the UNECE Guidelines and to discuss the preparation of and lessons learned from, indicator-based environment assessment reports of Azerbaijan and Tajikistan;
- Assist Azerbaijan and Tajikistan in establishing legal, institutional and operational frameworks for the regular publishing of indicator-based assessment reports;
- Support the publication by Azerbaijan and Tajikistan of their first indicator-based assessment report.

The UNECE Working Group on Environmental Monitoring and Assessment, EEA, the Ministry for Environmental Protection and Natural Resources of Azerbaijan and the State Committee for Environmental Protection and Forestry of Tajikistan will implement the project. Regional Environment Centres in EECCA and environmental civil society associations will be involved.

3. Expected accomplishments

(a) Trained EECCA experts in the practical application of the *Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia* and the *Guidelines for the Preparation of Indicator-based Environment Assessment Reports*;

(b) A network of EECCA focal points responsible for indicator-based environment assessment reporting exchanging experiences and assisting each other in strengthening national mechanisms for periodic SoE reporting on the basis of the UNECE Guidelines;

(c) Legal, institutional and operational frameworks established in Azerbaijan and Tajikistan for the regular publication of indicator-based assessment reports;

(d) Publication by Azerbaijan and Tajikistan of their first indicator-based assessment report.

4. Duration

The proposed duration of the project is 1 September 2007 – 31 December 2008.

5. Budget estimate

The total estimated costs are EUR 100,000. Costs cover organizational expenses, preparation of materials, travel of participants and consultancies.

D. Creating a "critical mass": implementing education for sustainable development in South-Eastern Europe

1. Background

At the High-level meeting of Environment and Education Ministries (Vilnius, March 2005) countries of the UNECE region adopted the UNECE strategy for ESD as a practically applied policy instrument that would facilitate promotion of education for sustainable development (ESD) in the region. They also adopted the Vilnius Framework for Implementation setting up a Steering Committee and an expert group on indicators in order to facilitate coordination and review of Strategy's implementation. Interested donors were invited to support the process.

EECCA and SEE countries are contributing actively to this initiative at the same time expressing their need in support from international community to facilitate implementation of ESD. Pursuant to the Vilnius decisions a workshop for SEE [35] was held in November 2005 in Athens (Greece) and another one for EECCA was held in November 2006 in Moscow (Russian Federation), respectively. The workshops addressed specific needs of the subregions and contributed to capacity-building, sharing of experiences and strengthening of subregional cooperation.

The Athens workshop put forward a programme with two interlinked key activities that would facilitate implementation of the Strategy in SEE: (a) "creating a critical mass" – training of trainers and (b) developing teaching materials.

The key elements of the first activity are as follows:

- The workshop supported introducing "a two-phases" approach. The first phase would be dedicated to the coordination and training of the team of international experts in ESD.
- The second phase would be conducted on a country-by-country basis. Thus, a team of international experts would deliver training to the countries interested. [36]
- The training would last up to 3 days for different target groups. Teachers would be a separate target group.
- All countries of SEE should be proposed as target countries for this programme.
- Mediterranean Office for Environment, Culture and Sustainable Development (MIO-ECSDE), possibly in cooperation with the Government of Greece, would facilitate implementation of this exercise in partnership with other relevant organizations.

Public authorities of SEE countries that are responsible for education will be the main target audience. However, the Strategy addresses cross-sectoral cooperation and therefore its provisions would be of interest for industry, business, media, education and scientific and other communities as well as NGOs. Teachers would be a separate target group.

2. Objective

The main objective of this initiative is to develop and strengthen the capabilities of SEE member States to implement ESD through developing a "critical mass" of competent and enthusiastic

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[35] SEE countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Romania, Serbia, Montenegro, and The former Yugoslav Republic of Macedonia.

[36] A pilot country would be identified at a later stage.

individuals. The project would also allow for building a national multi-stakeholder dialogue around the ESD issue and would increase the competence of educators, a special target group.

To this aim the following activities will be carried out:

- Training of the team of SEE experts in ESD.
- A pilot multi-stakeholder training in an interested country.

3.   Expected accomplishments

(a) Creation of a team of SEE experts competent to deliver training in ESD;
(b) Adaptation of the legislation, policies and institutional frameworks of a pilot country to the needs of ESD;
(c) Provisions for developing a national implementation plan on ESD;
(d) Established mechanisms for national multi-stakeholder cooperation on ESD;
(e) Provisions for developing curricula and teaching materials relevant to ESD;
(f) Enhancement of educators' competence in ESD.

4.   Duration

The tentative duration of the project is 1 November 2007 – 1 November 2008.

5.   Budget estimate

The total estimated costs are USD 80,000. Costs cover organizational expenses and travel of participants. The financial expenditures for this activity are expected to be shared with the host country(-ies). Therefore, the total required costs from external donors would be USD 60,000.

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