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ENVIRONMENT DIRECTORATE
ENVIRONMENT POLICY COMMITTEE
TASK FORCE FOR THE IMPLEMENTATION OF THE ENVIRONMENTAL ACTION PROGRAMME FOR CENTRAL AND EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA

Cancels & replaces the same document of 07 March 2007

PROGRESS IN ENVIRONMENTAL MANAGEMENT IN EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA

Fifth joint meeting of the Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe (EAP Task Force) and the Project Preparation Committee (PPC)

15-16 March 2007, Brussels

Agenda Item 6(i)

This document presents a provisional draft report aimed at assessing progress in achieving the objectives of the EECCA Environment Strategy. It includes introduction, substantive chapters, conclusions and a collection of country profiles. The report has been prepared in cooperation with a number of international partners (CAREC, European ECO-Forum PPC, the REC, REC-Moldova, Russian REC, UNDP, UNECE, UNEP, WHO World Bank) and in coordination with the European Environment Agency. EECCA Environment Ministries have also actively contributed to the preparations of the report.

Action required:

The Task Froce will be invited:
-to discuss the EECCA Report and its main findings;
-to endorse it, subject to written comments to be provided by 30 March 2007.

Please contact Mr. Roberto Martin-Hurtado in EAP TF Secretariat
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EXECUTIVE SUMMARY

1. One of the main outcomes of the 2003 Kiev „Environment for Europe" Ministerial Conference was the adoption of the Environment Strategy for the countries of Eastern Europe, Caucasus and Central Asia (EECCA). This report provides an assessment of progress in achieving the objectives of the EECCA Environment Strategy since 2003 – focusing on actions taken by EECCA governments. It has been commissioned as a background to the sixth „Environment for Europe"Ministerial Conference that will take place in Belgrade in October 2007. The report has been drafted by OECD / EAP Task Force secretariat staff, but it is the result of the collaboration with EECCA countries and a number of international partners – CAREC, the European ECO-Forum, the PPC, the Regional Enviromental Center for Central and Eastern Europe, REC Moldova, Russian REC, UNDP, UNECE, UNEP, WHO and the World Bank. It has been prepared in close co-ordination with the European Environment Agency.

2. For the most part, EECCA countries lack the strong drivers for environmental improvement that Western countries (public demand, price signals) and Central European countries (EU accession requirements) have enjoyed. The opportunities offered by renewed economic growth – both for carrying out environmental investments and for getting the prices right – have not been fully utilised. The governance situation, given slow progress in public administration reform and tackling corruption, remains generally unsupportive of modern environmental management approaches. Nevertheless, there are many examples of successful action across countries and policy areas. The main body of this report documents nearly 200 examples of progress across the 12 countries and 15 policy areas analysed. And additional examples can be found in the environmental policy matrixes included in the country profiles.

3. The speed of progress varies across policy areas. Noticeable progress seems to have been made on compliance assurance, water supply and sanitation, water resources management and agriculture. Less progress seems to have been made on waste management, biodiversity, transport and energy efficiency. Even in some areas that seem "frozen" in time (such as environmental quality standards), at least the need for reform is finally recognised. The basic legal and policy frameworks are often in place and keep improving – even if further important reforms are still needed. The real problem is implementation – with the implementation gap being particularly evident at the sub-national level. Also, where progress is taking place there is little evidence of countries taking a coherent approach to reform.

4. Looking at progress across areas offers valuable insights. The situation with environment-related infrastructure (whether water supply and sanitation, waste, energy, urban transport or irrigation) is often characterised by unsustainable financial models that result in crumbling infrastructure, poor service and negative environmental impacts. And while it is increasingly recognised that progress on environmental policy integration will largely determine overall progress towards environmental sustainability, environmental authorities are still ill-prepared to engage in meaningful cross-sectoral policy dialogue and little progress has been made in adopting integrated policy responses.

5. Overall, progress does not seem to have accelerated after the Kiev Ministerial Conference. Indeed, in some cases there has been regression, with the authority and capacities of environmental authorities in some countries downgraded. The experience since 2003 confirms that environmental progress in EECCA will take a much longer time than in CEE countries. But there are signs that consistency and patience will pay off – recent progress in some countries was made possible by the foundations established several years earlier.

6. Finance is clearly a cross-cutting constraint to improving environmental management and advancing towards environmental sustainability,

but not necessarily the most important one in all cases. Environmental authorities share common institutional and organisational weaknesses – often related to public administration practices inherited from the Soviet era – including the role of political leaders and administrations that are seldom supportive of modern conceptions of environmental management and are biased towards "producing laws" rather than achieving measurable results. Additional actionable constraints include a shortage of skills related to the functioning of market economies, poor understanding of the role of information management in policy development and implementation, weak horizontal and vertical inter-institutional co-ordination; and low environmental awareness of the public and economic agents.

7. But environmental authorities also face structural and political constraints. They include the lack of strong drivers (and the subsequent low profile of environment on national policy agendas), a poor governance context (including widespread corruption), the challenge of decentralising responsibilities in a fiscally-responsible manner; concerns about the competitiveness and social impacts of environmental policies; decreasing donor co-ordination; and a common perception among top policy-makers that environmental protection is a hindrance to economic growth – rather than a necessary element to ensure socio-economic development over the long-term.

8. Although there is no single roadmap for accelerating progress in environmental management across EECCA countries, a number of key, common areas for action can be identified. In order to accelerate progress in achieving the objectives of the EECCA Environment Strategy, and towards environmental sustainability more generally, the following actions would be needed:

- A clear vision of where each EECCA country wants to go and how to get there – this will require setting clear objectives and targets, making the case for environment to be included in national development plans (and donor country programmes) and establishing alliances with finance and line ministries to support "win-win" sectoral reforms.
- A step-by-step approach to reform – this will require setting clear targets, sequencing actions and adopting a reform pace that is commensurate with each country's political, economic and technical restrictions
- A stronger focus on implementation – this will require linking planning, budgeting and monitoring processes; developing implementing regulations; improving inter-sectoral co-ordination and monitoring the contribution of line ministries to national environmental objectives; and empowering sub-national environmental authorities
- An approach that focuses on providing real incentives to encourage producers and consumers to improve their environmental performance in the most cost-effective manner – this will require streamlining regulation, stepping up enforcement and emphasising demand management
- An improved institutional framework – this will require institutional stability, clarification of responsibilities at sub-national level, removal of perverse incentives for staff and more robust and policy-relevant information systems
- A comprehensive approach to environmental financing – this will require considering the role of all potential funding sources and policy actions needed to leverage them (public expenditures, incentives for private investments in pollution abatement, user chargers for environmental services, climate for private investments in infrastructure, clean development mechanism, donor assistance) and building the capacity to mobilise and manage them
- A strategic investment in skills – this will require paying particular attention capacities on environmental economics, financial and human resources management, policy integration and stakeholder relations as well as those of sub-national actors

- A stronger engagement of stakeholders – this will require understanding industry concerns and the role of NGOs as both watchdogs and agents of action at local level
- A more supportive international co-operation framework – this will require efforts on the part of EECCA countries to motivate, co-ordinate and make efficient use of donor support, but also more strategic approaches to co-operation on the part of donors.

9. As regards the EECCA Environment Strategy, EECCA countries feel that, while it has been useful as a guidance document and a framework for benchmarking and guiding support, a more differentiated approach would now be needed, tailored to the specific needs of the EECCA sub-regions or individual countries. At the same time, there is still need for an EECCA-wide mechanism to exchange information and good practice in areas of common interest, and to facilitate dialogue and co-operation with donors.

INTRODUCTION

One of the main outcomes of the 2003 Kiev „Environment for Europe" Ministerial Conference was the adoption of the Environment Strategy for the countries of Eastern Europe, Caucasus and Central Asia (EECCA).

The overall objective of the EECCA Environment Strategy is to contribute to improving environmental conditions and to implementing the WSSD Plan of Implementation in the EECCA region. The Strategy provides a strategic framework for EECCA countries to help them strengthen their efforts in environmental protection and faciliate partnerships and co-operation between EECCA countries and other countries of the UNECE region, including all stakeholders.

The vision put forward by the Strategy is one of capable institutions that, in collaboration with partners, address priority problems and issues in environmental health and natural resources management by making better use of environmental policy instruments, promoting policy integration in key sectors, investing in environmental protection, involving the public in environmental management and tackling transboundary issues within the framework of international environmental agreements.

This report provides an assessment of progress in achieving the objectives of the EECCA Environment Strategy since 2003. In doing so, it provides an overview of environmental management in the region as well as progress towards achieving the environmental Millennium Development Goal. The report has been commissioned as a background to the sixth „Environment for Europe" Ministerial Conference that will take place in Belgrade in October 2007.

This report follows on the previous report „Environmental Management in Eastern Europe, Caucasus and Central Asia" (OECD, 2005) that served as main analytical background document to the Conference of EECCA Environment Ministers and their Partners that took place in Tbilisi (Georgia) in October 2004. The previous report provided a baseline, mostly by making use of materials available at the time of the Kiev Ministerial Conference. Following a critical review of that report, the set of indicators used to monitor progress has been modified, and an important effort has been made to collect new, relevant data.

The design, preparation and review of this report has involved many organisations and individuals. EECCA countries, donor countries and other international partners have guided the preparation of this report in the framework of the EAP Task Force. EECCA country representatives, in particular, have fundamentally shaped the design of the report and have provided a wealth of information, particularly through a dedicated questionnaire (referred throughout the report as the EAP Task Force questionnaire[1] but also through their participation in sub-regional and regional workshops.

The report has been drafted by OECD/EAP Task Force staff, but it is the result of the collaboration with a number of international partners – CAREC, the European ECO-Forum, the PPC, the Regional Enviromental Center for Central and Eastern Europe, REC Moldova, Russian REC, UNDP, UNECE, UNEP, WHO and the World Bank. Each partner has contributed dedicated input, made available early drafts of new work and provided expert advice or organisational support according to their institutional circumstances.

In addition, the report has been prepared in close co-operation with the European

1 . The EAP Task Force questionnaire was discussed in a Regional Workshop in May 2006, issued in July 2006 and responses received in October 2006. In order to assess progress, binary (Yes/No) questions referred to the situation in June 2003 and June 2006. Quantitative questions mostly referred to 2002 and 2005. Quality control of the responses has been limited. Access to the raw data files is available through the EAP Task Force Secretariat.

Environment Agency and should be read together with their forthcoming report „Europe's Environment: the Fourch Assessment". The report also builds on other relevant, available analyses– such as work by the EBRD, the Energy Charter Secretariat, the European Conference of Ministers of Transport or the International Energy Agency.

The structure of this report follows essentially that of the EECCA Environment Strategy itself. This section introduces the report and provides the context in which environmental management in EECCA countries takes place. Fifteen thematic chapters offer a „policy brief" vision of recent progress, main barriers and ways forward in each of the objectives/sub-objectives of the Srategy. When relevant, those chapters provide a snapshot of the current situation in the environmental or economic sector analysed. A brief concluding section identifes common threads emerging from the analysis of the different objectives/sub-objectives. Finally, a collection of country profiles, prepared on the basis of information provided by countries to international processes (including the EAP TF questionnaire) is included as annexes.

THE CONTEXT FOR ENVIRONMENTAL MANAGEMENT – RECENT TRENDS IN EECCA

Economic growth in the region has recently been higher than the world average. In 2003-2006 the region's GDP has been growing at 7% per year (EBRD, 2006). Average growth rates have varied greatly across countries. They have been between 4.5%-6.5% for Kyrgyz Republic, Uzbekistan, Moldova and the Russian Federation; some 8-8.5% for Belarus, Georgia and Tajikistan, around 10% for Armenia and Kazakhstan; 14% for Turkmenistan and 18% for Azerbaijan. Commodity exporters have generally reported substantial budget surpluses.[2] Economic growth has led to a reduction in poverty, mostly through wage increases. Nevertheless, in 2005 most EECCA countries' estimated level of real GDP was still below that in 1989. For Moldova and Georgia, real GDP had not yet recovered to *half* that in 1989 (EBRD, 2006).

EECCA is expected to grow at over 6% over 2006-2010 and could reach close to 10% under an optimistic scenario (EBRD, 2006). Per capita income is expected to double over the next 10 years, but it will still remain low, at around 30% of the EU-15 minimum in 2005. High growth rates are not guaranteed, however. The poor EECCA countries will need to overcome debt dependencies and resource-rich countries will need to diversify (World Bank, 2005). The growth agenda includes at least two items with clear environmental links: enterprise reform (linked to how to manage reform of environmental regulation beyond a simplistic elimination of "green tape") and productivity of agriculture (linked to the protection of the natural resource base).

The EECCA region has largely become a Russian-centric **trade** bloc – the share of EECCA exports shipped to EECCA countries grew substantially, while the share of exports to EU15 and EU8 declined substantially.[3] Trade is still dominated by commodity exports. Product diversification has notably deteriorated – mostly in Azerbaijan, Kazakhstan and the Russian Federation where oil and gas are increasingly the dominant exports. The Kyrgyz Republic and Tajikistan also rely extensively on primary commodities (gold and aluminium respectively).

Total merchandise trade in EECCA countries has grown since the start of the transition, although not as much as in other transition countries. In contrast, the services sectors remain largely closed. Some countries are active in buyer-driven production chains (Armenia in diamonds; Belarus in furniture; Kyrgyz Republic, Moldova and Turkmenistan in clothing), but the rest have largely stayed outside any network trade. This limits the potential for demands from western consumers to become a driver for environmental sustainability through the value-chain.

2 . Azerbaijan, Kazakhstan and the Russian Federation have saved most of the revenues in stabilisation funds.

3 . Interestingly, Latin America has emerged as an important market for EECCA exports (doubling over a decade).

As a share of GDP, the group of EECCA countries receive **foreign direct investment** (FDI) volumes higher than China. A large part of FDI is related to privatisations or acquisitions and comes from within the region – in 2005, only in Georgia, Ukraine and Uzbekistan major privatisations involved buyers from outside the region. Azerbaijan and Kazakhstan have managed to attract significant FDI, mostly in their oil sectors. In contrast, EECCA countries not exporting oil or gas still receive only limited inflows – Tajikistan received only USD 35 per capita of FDI at the end of 2003 (the corresponding figure for Estonia being over USD 4,000). To remain competitive the transition countries will need to offer strong growth prospects and an increasingly attractive business environment – this could offer opportunities for pursuing better environmental regulation.

Remittances have become an important source of external funds for the poorest EECCA countries – in Moldova and Tajikistan they are worth more than 10% of GDP (EBRD, 2006). The Russian Federation acts both an important source as well as a recipient of remittances. For half of the countries, including Belarus and the Russian Federation, remittances exceed FDI. They are more stable than FDI and are used primarily for consumption. Remittances are partly responsible for the import boom observed in countries like Moldova – but their link to sustainable consumption and production patterns remains unexplored.

Economic growth coupled with decreasing inequality[4] has led over the recent past to a decrease in **poverty** – particularly in the populous middle-income countries (Kazakhstan, Russian Federation, Ukraine). Low income EECCA countries,[5] however, still experience extremely high levels of poverty – more than 40%, reaching 70% in Tajikistan (World Bank, 2006). Poverty has declined far more rapidly in capital cities than elsewhere. In some EECCA countries, poverty risks are as high in secondary cities as in rural areas. But rural residents still form the bulk of the poor in low income EECCA countries – some 70% (World Bank, 2006). If poverty reduction is a goal, environmental action should be targeted towards tackling the environmental problems of the rural poor.

Governance is highly problematic in the region and constitutes the major obstacle to poverty reduction. In many EECCA countries there is a lack of institutional stability which results in key political actors reacting to every change in the balance of power (DFID, 2004). The Soviet legacy has left many EECCA countries with weak institutions and ever weaker policy-making capacities. Commitment to reform of state institutions is weak across much of the region. Corruption is endemic[6] and is proving a central challenge to progress with reforms[7]
The business environment is poor – particularly in the natural resource-rich countries.

4 . With the exception of Georgia and Tajikistan.

5 . According to the World Bank lending categories, Armenia, Georgia, the Kyrgyz Republic, Moldova and Tajikistan are IDA countries. Azerbaijan and Uzbekistan are blend IDA/IBRD countries. Belarus, Kazakhstan, the Russian Federation, Turkmenistan and Ukraine are IBRD countries.

6 . Transparency International's Corruption Perception Index reports that EECCA countries are among the most corrupt in the world.

7 . Since the start of the transition period, few issues have risen as rapidly in visibility as corruption. Reforms in the 1990s focused on macroeconomic stabilisation, price and trade liberalisation, privatisation and establishment of the legal foundations of a market economy. Institutional reforms to ensure accountability, transparency and public sector effectiveness often took a back seat. But by the end of the decade corruption came to be recognised as a central challenge to progress (Anderson and Gray, 2006).

Governance is improving in some countries, but not in the region as a whole. The World Bank Governance Indicators[8] show low levels of governance for all EECCA countries – in 2005, on a 0-5 scale only Armenia and Ukraine scored above 2. The evolution is mixed – Georgia and Ukraine experience noticeable improvements in the average scores, but six countries saw their scores decrease (Belarus, the Kyrgyz Republic, Moldova, the Russian Federation, Turkmenistan and Uzbekistan). Firms reported smaller incidence of corruption in 2005 than in 2002 in some but not all countries (Anderson and Gray, 2006)[9]. Most EECCA countries have experienced improvements in economic governance, but are still constrained by regulatory barriers and widespread corruption. Reform has been embraced in several Caucasus and Western EECCA countries by new or re-elected leaders who have strengthened their commitment to democracy and markets. The Russian Federation advanced in some aspects of reform but undermined the privatisation process with the re-establishment of state ownership and control over sizable assets in the oil and gas sector (EBRD, 2005).

Judiciaries are moving towards independence in EECCA countries (with the exception of the few regimens where democracy has not yet taken hold). Judicial accountability is now one pressing issue. Perceptions of honesty, affordability, ability to enforce decisions and speed are low. Perceptions of judicial honesty have improved in Georgia but worsened in Moldova (Anderson and Gray, 2006b). This has consequences for both ensuring access to environmental justice and for judicial enforcement of environmental regulations.

The region is experiencing **political diversification**. Since the Kiev Ministerial Conference so-called "colour revolutions" took place in Georgia (November 2003), Ukraine (November 2004) and the Kyrgyz Republic (March 2005). But according to analysis conducted by Freedom House, most countries in the region still experience low levels of political rights and civil liberties[10] as well as democracy.[11] The evolution is mixed, with improvements in the Kyrgyz Republic and Ukraine and degradation in the Russian Federation and Azerbaijan. Advances toward full democracy will provide more opportunities for public participation, NGO activism and widespread awareness-raising in the environmental field.

Security issues remain high in national and international agendas. Most EECCA countries have been affected over the 2003-2006 period by some level of political instability and/or armed conflict. The "no peace / no war" situation in several EECCA countries (including unresolved social tensions in the Kyrgyz Republic and Uzbekistan, and frozen conflicts in Western EECCA and the Caucasus) promotes the growth of parallel economies, contributing to increased corruption and poverty, and bringing a deterioration in the respect for human rights. These links are increasingly recognised by international partners – for instance, DFID's strategy (DFID, 2004) is built around improving governance, promoting pro-poor sustainable growth, and contributing to conflict-resolution. Within this context, the relevance of the environment and security nexus (see box 1.1) is increasingly recognised.

8 . The World Bank Governance Indicators look at six dimensions of governance: Voice, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption.

9 . Georgia is showing the most dramatic improvements. Moldova, Tajikistan and Ukraine are showing improvements along some dimensions. But corruption does not seem to have lessened in Azerbaijan and the Russian Federation. The Kyrgyz Republic continues to have the worst corruption indicators.

10 . Freedom House classifies one country as Free, four countries as Partially Free and seven countries as Not Free, four countries as Partially Free and one country as Free.

11 . Freedom House classifies three countries at the level of transitional government (Ukraine, Moldova and Georgia), five as semi-consolidated authoritarian regimes, and four as consolidated authoritarian regimes.

Box 1.1 Environment and Security

Environmental degradation, inequitable access to natural resources and transboundary movement of hazardous materials increase the probability of conflict and thereby pose a risk to human and even national security. Transboundary pollution often negatively affects the relations between neighbouring states sharing the common resource base. Health risks and involuntary migration due to, for example, water scarcity, inequitable access to land resources, uncontrolled stocks of obsolete pesticides or other forms of hazardous waste constitute threats to stability and peace. Ongoing disputes and disagreements over the management of natural resources shared by two or more states can deepen divides and lead to hostilities.

But common problems regarding the use of natural resources may also bring people together in a positive manner. Communities and nations can build confidence with each other through joint efforts to improve the state and management of natural resources. Environmental co-operation can thereby act as an important tool for preventing conflicts and promoting peace between communities.

Source: Environment and Security Initiative (ENV SEC) www.envsec.org

ENVIRONMENT FOR DEVELOPMENT

Across the world, environmental degradation brings high costs to the development of societies. Those costs have not been quantified for EECCA countries – but they are real. Degradation of the natural resources base (soils, water) affects the productivity of agriculture – a sector that, for example, accounts for nearly 30% of GDP in Uzbekistan and provides livelihoods for nearly half of the population in Azerbaijan. Poor air quality and contaminated water supplies have major health impacts – millions of Russians are exposed to high concentrations or pollutants and thousands of children die in EECCA countries due to poor water conditions. Poor environmental management enhances the vulnerability to natural and technological disasters –such as floods and toxic discharges.

The importance of environmental quality for development is recognised in the MDG framework (see box 1.2). As noted throughout this report, in addition to reducing the negative impacts from environmental degradation, better environmental management can also contribute to enhancing good governance, encouraging higher productivity in industrial facilities, improving the performance of environmentally-related infrastructure and reducing public expenditures.

Box 1.2 The Environment and the Millennium Development Goals

The Millennium Development Goals (MDGs) grew out of the agreements and resolutions of world conferences organised by the United Nations and have been commonly accepted as a framework from measuring development progress. The MDG framework captures the environmental concerns in *Goal 7: Ensure environmental sustainability*. The targets associated with that goal refer to mainstreaming the environment in policy and programs, reversing the loss of environmental resources, and improving access to environmental services.

If environmental sustainability is not ensured, achievements toward the remainder of the MDGs may be short-lived. For example, it is difficult to imagine achieving poverty reduction through improvements in agricultural productivity where land is degraded and water absent, and reductions in child mortality will be more likely if households have ready access to adequate water supply, sanitation facilities, and modern fuels. While the environment is no silver bullet – strong direct connections can be found with some of the other MDGs but not with all of them – environmental actions may be among the most cost effective ways of achieving many of the MDGs.

Source: World Bank (2002)

FURTHER READING

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PROGRESS ACROSS OBJECTIVES

OBJECTIVE 1. ENVIRONMENTAL LEGISLATION, POLICIES AND INSTITUTIONS

INTRODUCTION

As it can be seen throughout this report, good environmental policy benefits society by protecting human health and the environment. But for progress to be made across environmental policy areas (whether air quality, water, waste or biodiversity) cross-cutting, systemic flaws need to be addressed. Laws and regulations need to be clear, feasible and enforceable. Policy instruments need to be well designed and packaged. Implementation needs to be supported on adequate compliance assurance strategies. All this requires effective supporting institutions.

Good environmental regulation has also important consequences in terms of achieving political, economic and public administration goals. For those countries aspiring to EU membership, environmental legislation is a major area for convergence. For those countries looking to make the most of globalisation, environmental regulation plays an increasingly important role in guaranteeing a level-playing field for businesses in the global marketplace. For those countries seeking to strengthen the rule of law and improve governance, effective environmental compliance assurance systems help to reinforce the credibility of regulation in general.

Moreover, in coming years the bar for governments in general and for environmental regulators in particular will increase – the public will demand better environmental performance, while businesses will expect policy solutions that minimise compliance costs and bureaucracy.

As of early 2007, EECCA countries still face a large environmental policy and institutional reform agenda. Institutions suffer from weak authority, scarcity of resources, out-dated management, high turnover of professionals and frequent restructuring, thereby lacking both the incentives and means toe ensure the achievement of environmental results. Policies are not generally aimed at achieving specific targets, rely on unreformed or poorly combined instruments and are often dominated by revenue-raising objectives. Environmental legislation is extensive but inconsistent and unenforceable. And compliance levels are very low – almost every on-site inspection discovers one or several violations of varying severity.

This chapter discusses recent progress with environmental policy and institutional reform in EECCA. It has been prepared on the basis of dedicated input by EAP Task Force Secretariat staff. It also draws on the most recent UNECE Environmental Performance Reviews of EECCA countries.

RECENT PROGRESS

Since 2003 **strategic environmental planning** has been less of a priority in EECCA countries than in the 1990s, when most countries developed major environmental policy documents such as National Environmental Action Plans (NEAPs). Belarus has developed a National Strategy on Sustainable Development (what can be considered a "second generation NEAP") and Georgia is about to launch a similar process. At the same time, numerous thematic strategies have been formulated, but often in an uncoordinated manner and largely driven by the international agenda and donor support. As a result planning frameworks are still largely unsystematic and incoherent. Local environmental planning is limited to individual initiatives.

In the new policy papers, there has been a clear shift from detailed descriptions of environmental conditions to suggested mitigation measures. However, they are still mostly declarative, rarely establish targets or prioritise planned actions, do not include realistic financial plans and lack evaluation arrangements. At the same time, environmental issues have found their way into other strategic policy documents – in most Poverty Reduction Strategy Papers (PRSPs)

environmental protection is featured as a key policy direction.

The ambitious environmental **lawmaking** kept its pace. Substantive reforms are being guided by international benchmarks, including European legislation (see box 1.1). Lawmaking practices are evolving and include now broader stakeholder consultations in the drafting phase as well as clearer transitional provisions in laws and regulations. But legislative frameworks remain for the most part unsystematic. The development of **implementing regulations** has been slower and even more inconsistent. The complexity and incoherence of the regulatory system undermines its effectiveness, as the regulated community often does not know and understand the requirements.

In recent years, the idea of reforming **environmental quality standards** has become politically acceptable. The reform process has started in several EECCA countries – including Armenia, Moldova, Kazakhstan, and the Russian Federation. But reforms are not always coherent – for example, Kazakhstan is trying to combine the EU water quality classification with the old system without turning water quality objectives and standards into management tools.

Progress is also finally taking place in **environmental permitting**. Environmental authorities have come to realise the deficiencies of the Soviet-legacy permitting system and most countries have started a process of permitting reform, often with industry's support. Ukraine is planning to align its system with the European norms and will mandate a phased transition to integrated permitting based on best available techniques for large industry and simplified permit requirements for small and medium enterprises. Kazakhstan has consolidated separate medium-based permits into a single document and plans to introduce full cross-media integration of permit requirements for large industry in 2008. But the countries may lack the capacity to implement these are radical short-term change. Several countries (including Armenia, Belarus, the Kyrgyz Republic and the Russian Federation) are drafting regulations to replace environmental quality-based permit requirements with uniform technology-based emission/effluent limits values (ELVs), thereby limiting the discretion of permitting authorities but also eroding the level of environmental protection and the incentives for innovation.

Box 1.1 Convergence with EU Environmental Legislation in EECCA

Within the framework of the new European Neighbourhood Policy, action plans for enhanced cooperation were signed with Moldova and Ukraine in 2005 and with the three Caucasus countries in 2006. Their environment sections, fairly similar in content, emphasise further regulatory reforms, compliance assurance, public participation and implementation of regional and global environmental agreements. Although gradual convergence with key principles and standards of the EU environmental Directives has been largely accepted as a policy direction in many EECCA countries, neither EECCA governments nor the donors have a clear sense of priorities for the convergence efforts, which are hardly coordinated, leading to a waste of time and technical assistance funds. The first steps towards convergence have been taken in Ukraine, Moldova and Georgia but the process is very slow due to the limited institutional capabilities of the environment ministries.

Source: EAP Task Force Secretariat staff

Box 1.2 Lessons from the Kazakh Environmental Code

Several EECCA countries have decided to address legislative shortcomings by introducing Environmental Codes. The only document of this kind that has been enacted so far – the Environmental Code of Kazakhstan – seeks to incorporate all existing environmental laws and minimise the need for implementing regulations. It resolves many discrepancies in the preceding legal acts (albeit some contradictions remain within the Code) and advances important new concepts and instruments. Unfortunately, the analysis of regulatory impacts, most importantly of the potential costs and benefits of many new legal provisions, had not been carried out prior to the adoption of the Code, and questions remain about the feasibility of a number of its requirements. With Belarus, the Kyrgyz Republic and the Russian Federation also actively developing their environmental codes (and several other EECCA countries likely to follow) there is a real risk that new Environmental Codes in EECCA countries will turn into symbolic actions rather than bring regulatory and environmental improvements.

Source: EAP Task Force Secretariat staff

No significant progress in the regulatory basis and practical application for **environmental impact assessment** (EIA) has been reported in recent years. All EECCA countries have laws requiring EIA, although they vary in consistency and comprehensiveness and do not generally comply with international best practice, in terms, for instance, of diversification of requirements depending on potential impacts and of public participation. At the same time, countries that passed laws on EIA and state environmental review (SER) in the early or mid-1990s (such as Moldova, the Russian Federation and Ukraine) have now accumulated enough practical experience to contemplate the introduction of "second generation" EIA legislation that would bring EIA systems in closer conformity with international best practices.

Some progress has been made in the introduction of **strategic environmental assessment** (SEA) in the region (see Objective 4.1).

The old system of **pollution charges** continues essentially unreformed. Some improvements have taken place. The number of parameters subject to charges has been reduced in Armenia and Ukraine. Most EECCA countries have increased pollution charge rates (they have been more than doubled in Ukraine). And charge collection rates have generally increased – thanks partly to industry's improved financial situation and partly to shifting, in some countries, the responsibility for collection from environmental to tax authorities. But these changes have been too timid to provide real incentives for environmental improvements; the pollution charge systems retain an essentially revenue-raising nature. As regards charges on environmentally harmful products, they are in use in Armenia, Moldova and Ukraine, but they are not believed to have any incentive impact due to low charge rates and missing market availability (or higher price) of alternative, less harmful products.

N**atural resource taxes** also remain purely fiscal instruments without any incentive impact. Low rates and lack of environment-driven differentiation means they don't play any significant role in promoting sustainable use of natural resources. On the contrary, domestic under-pricing of many natural resources (such as energy, water, timber) and tax preferences for producers (for example in mining, forestry and fisheries) contribute to their unsustainable use.

Environmental liability is seldom used to secure monetary compensation from environmental violators. Methodologies for environmental damage assessment are still speculative, inaccurate, and often too complex to adequately support court cases. Progress is taking place in Kazakhstan, where the new Environmental Code envisages expert assessment of damages based on actual costs of a selected remedy, but implementation guidance is yet to be developed. Mandatory environmental insurance for hazardous industrial installations has long been introduced in the Russian Federation and several other EECCA countries, but it will remain a dysfunctional instrument until industry's exposure to environmental liability becomes real.

Across the region, more importance has been attributed to **environmental compliance assurance**. Environmental inspectorates have been created in Georgia (see box 1.3) and Kazakhstan, and they have been strengthened in some other countries. And laws on environmental control have been developed in Armenia and Georgia in accordance with the Guiding Principles for Reform of Environmental Enforcement Authorities endorsed in Kiev.

Compliance assurance strategies remain generally unbalanced, resting on a declared but selectively applied "zero tolerance" approach. Despite a gradual re-focusing on environmental results, revenue-raising objectives (collection of pollution charges and fines) still remain at the core of these strategies. The incentive framework for environmental compliance is not yet analysed. The non-compliance toolbox remains narrow, based almost exclusively on fines – softer means (such as warning letters) have been banned in some countries, such as Kazakhstan, as they are perceived to favour corruption. In some cases, lack of sound and transparent enforcement policies has allowed making use of environmental enforcement to pursue interests

that are unrelated to environmental objectives – such as shifting the ownership of large-scale projects from one company to another or increasing the participation of state-owned companies in such projects.

Compliance promotion efforts are taking place. Practically all EECCA countries have improved the access to laws and selected by-laws through their websites and half of them organise special events to inform the regulated community about legal developments. Authorities have also provided informational materials or training for industry, but not in a systematic way. Kazakhstan, the Russian Federation and Ukraine have adopted rating schemes to assess and disclose industry's environmental performance. And proactive mass media communication has been used (for example in Georgia and the Russian Federation) to promote public disapproval of environmental non-compliance. These efforts are being complemented by NGOs – for instance, a manual and case studies on cleaner production in Georgia, Moldova and Kazakhstan were published in 2004.

But the need and value of compliance promotion (especially when channelled through environmental inspectorates) is still poorly understood by policy-makers or NGOs – and often perceived as a form of corruption. Promotion of cleaner production still lacks institutionalised mechanisms founded on domestic resources rather on volatile external technical assistance. Voluntary initiatives beyond compliance are rare.

Some progress is taking place in **enterprise monitoring and reporting**. Several countries (Armenia, Georgia, Kazakhstan and the Russian Federation) have improved its legal basis. But legal provisions on the parameters and frequency of monitoring do not yet exist – forcing environmental authorities to impose all-encompassing monitoring that is expensive and unattractive for companies. Reporting remains administratively cumbersome, and (in contrast with permitting) has hardly received any attention within the "one-stop shopping" approach to regulation that is being discussed in the region.

Inspection efforts are still limited – only a small fraction of the regulated community is inspected annually. This can be attributed to restrictions faced by environmental inspectorates, aimed at fighting corruption and reducing the administrative burden of regulation. But also to the low compliance monitoring capacity of inspectorates and to a poor understanding of the regulated community – thus impeding the use of risk-based inspection approaches.

Box 1.3 Environmental inspection in Georgia

The Inspectorate for Environmental Protection of Georgia was established in September 2005. By EECCA standards, the Inspectorate is relatively well financed and staffed (300 people). Competitive salaries and new selection procedures were introduced to attract professional staff. And with assistance from international partners, the Inspectorate developed a long-term strategy and inspection procedures.

The Inspectorate has been working hard. It proposed (and saw approved) an increase in the level of administrative sanctions to provide a higher deterrent effect. It has established constructive relations with other inspection authorities, NGOs, and international partners. It conducts regular checks to prevent illegal use of natural resources. It has put in place telephone hotlines across the country to register complaints from the general public. And it is making use of mass-media to raise awareness about the hotlines and the effects of non-compliance.

Results can already be seen. The number of detected violations doubled in 2005-2006. Fine collection rates increased from 3-6% in 2002-2003 to 72% in 2006.

But environmental inspection in Georgia is also facing significant challenges. In order to fight corruption and support private sector development, the Government established in 2005 a moratorium on inspecting industrial facilities. If kept for long, the moratorium will likely contribute to a substantially lower environmental performance of industry.

Source: EAP Task Force Secretariat staff

EECCA countries claim to have achieved a higher deterrent effect of **sanctions** due to their increased severity. Indeed, in Armenia, Georgia, and the Russian Federation, administrative fines became more stringent. But in some other

countries (such as Azerbaijan), they were not even adjusted for inflation. While fine collection rates have increased to 70-90%, the quality of criminal enforcement has not improved and is still hindered by poor communication between environmental inspectorates, prosecutor's offices and courts.

Environmental institutions keep gaining strength, but from a low base and at a slow pace. Actions have been taken to strengthen environmental authorities – several EECCA countries have introduced civil servant status and codes of conduct for their staff, measures to increase transparency and optimise horizontal and vertical organisation, and equipment upgrades. These improvements are yet insufficient – as discussed throughout this report.

Many environmental authorities have undergone **structural changes** looking to increase their efficiency and effectiveness. But such changes have been too frequent and often coupled with replacements of managers at all levels – resulting in long transition periods of institutional uncertainty and inaction, as well as loss of qualified staff and institutional memory. In some cases (such as in the Kyrgyz Republic) restructuring limited the influence of environmental authorities over government policies. Cases of incoherent institutional changes under the same government (such as in Moldova and the Russian Federation) suggest a lack of strategic direction for institutional reform.

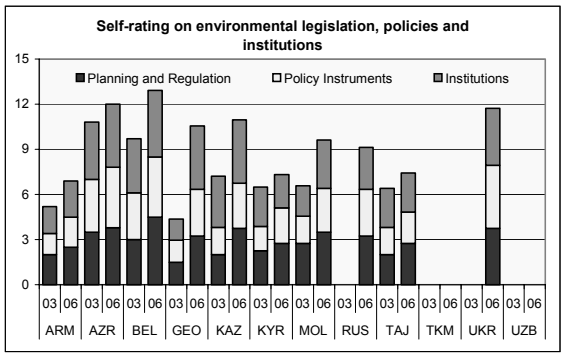
Inconsistencies in assigning **environmental management responsibilities** to various actors within the executive branch are being addressed, albeit slowly. In Armenia, Georgia, the Kyrgyz Republic, Moldova, and the Russian Federation such improvements are part of public administration reforms that aim to clarify responsibility for policy-making, regulatory, and compliance functions, and separate them from any economic activity undertaken by governmental agencies. At the same time, excessive internal fragmentation of environmental authorities and poor (although improving) inter-sector co-ordination of policies and actions runs contrary to the need for integrated approaches to policy implementation.

Box 1.4 How do EECCA countries see their own progress? Results from a self-rating exercise

For the 2004 report, in order to establish a baseline in the broad areas of legislation and policy development, policy instruments, and institutions, the EAP Task Force Secretariat developed a rating methodology and applied it to the 12 EECCA countries. For this report, the methodology was refined and questionnaires sent to EECCA countries for self-rating.

The countries' responses indicate that most progress has been achieved on the legal framework, inspection and human resource management, as well as environmental quality standards (EQS). Least progress has been achieved on Environmental Impact Assessment (EIA), natural resource taxes, permitting and self-monitoring, budget and funding, and information flows.

For some dimensions, comparison of scores across countries reveals major discrepancies. On EQS, the score is 1-2 in Armenia and 4-5 in Belarus; yet, the systems are almost the same. On EIA, the score is 2 in Armenia and 5 in Kyrgyzstan, and again the situation is very similar. This suggests that what constitutes best practice is not yet fully understood in all countries – and it is reinforced by some of the results from the scorecards presented throughout this report.



Source: EECCA Countries and EAP Task Force Secretariat staff

De-centralisation is deepening. New environmental management functions have been delegated to local public administrations, even though in several cases the fiscal autonomy of local authorities decreased. While regulatory and compliance assurance functions generally remain a prerogative of national governments, the Russian Federation has delegated them to the

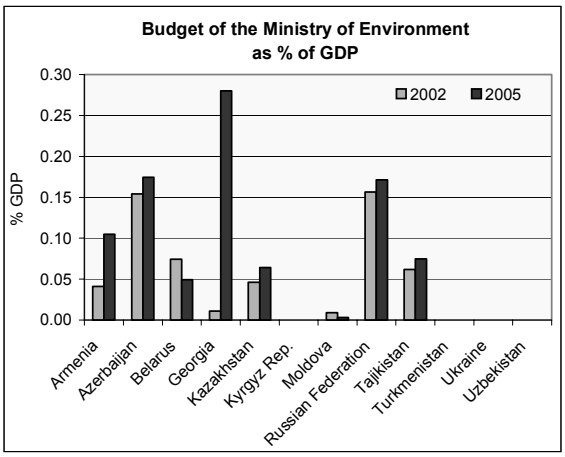
oblast and even municipal level for certain segments of industry. Sub-national authorities in the Russian Federation are also very active in the field of law-making – the City of Moscow has enacted new laws on integrated permitting and environmental inspection, ahead of federal authorities. At the same time, capacities at the sub-national level are still low and support for institutional development from the national level sporadic.

Relations with non-governmental stakeholders are slowly improving. Dialogue with the private sector is more structured and transparent in industrial countries such as Kazakhstan, the Russian Federation and Ukraine. Cooperation with NGOs seems to be improving, but it is not always the case (see Objective 6.2).

Except for the Kyrgyz Republic and Moldova, **budgetary resources** allocated to environmental ministries have increased. Authorities in Kazakhstan and the Russian Federation have received significant funds for outsourcing some research and regulatory development tasks. However, compared to other ministries, budgets are small. Budget planning is still based on historical figures rather than assessment of needs, partly due to the lack of sound methodologies. Adoption of performance-oriented budgeting (for example in Ukraine) has created demand for better performance indicators and reporting by environmental authorities.

Human resource management is improving. Appraisal of staff competencies and training curricula have been introduced or improved in Armenia and the Russian Federation. And the Ministry of Environment of Kazakhstan has established its own training centre. Overall, the number of staff in environment ministries and their subsidiary bodies has remained relatively stable. Among the exceptions, the Moldovan Ministry was almost halved and it now counts only 25 staff – by far insufficient to perform the Ministry's functions. In several countries, such as Armenia, Georgia and Kazakhstan staff salaries have been increased from the extremely low levels that made petty corruption unavoidable. But across the region, salaries are not yet high enough to attract and retain highly qualified staff.

Figure 1.1 Budget on the rise



Note: Data not available for Turkmenistan, Ukraine and Uzbekistan

Source: EECCA countries' responses to EAP Task Force questionnaire

MAIN BARRIERS

There are both internal (to environmental authorities) and external constraints that prevent faster improvements of environmental legislation, policies and institutions. Major internal barriers are the lack of leadership and strategic direction for reform, issue-specific and technocratic planning systems (that allow for little public participation and inter-sectoral coordination and cooperation), poor access to and management of information, and reform fatigue. Key skill shortages include understanding of decision-making by businesses and working across policy areas (both within the environmental domain and across public policies). Shortage of financial resources sustains a fear of reduced revenues if the present system of environmental management changed as well as pervasive corruption (linked to low wages).

Major external barriers include both general governance weaknesses (regarding rule of law, checks and balances, autonomy of local governments, and public scrutiny of government action) and social and competitiveness concerns related to increased resource pricing. A strong de-regulation drive (rather than better regulation) backed by intensive lobbying by industry and powerful line ministries is being experienced.

WAYS FORWARD

Address the fragmentation and lack of focus and coherence in environmental policy planning. Identify a small set of realistic priorities, based on analysis and consultation. Make use of regulatory impact analysis and meaningful stakeholder consultations to ensure that requirements of the new regulatory framework are ambitious, but also fair, feasible and clear. Mobilise further public support for the environment.

Provide real incentives for businesses and individuals to improve their environmental behaviour. As a pre-condition for any further reform, improve the instruments of direct regulation (primarily the system of environmental quality standards, EIA and permitting). Think in terms of policy packages, strengthening linkages between reforms of individual policy instruments. Radically change the system of economic instruments, separating the incentive objective of the system (charges for a few target parameters) from the revenue-raising one (this can be aid by introducing a product charge on motor fuel). Develop and officially enact sound methodologies for damage assessment to support environmental liability reforms.

Improve compliance assurance strategies. Raise the awareness of businesses and other stakeholders about the possible gains from win-win investments and the economic and social costs from non-compliance. Adopt transparent, proportionate and escalating non-compliance response policies. Encourage non-governmental actors (industry associations, banks or citizens' associations) to act as indirect enforcers.

Strengthen institutional frameworks by adopting performance-oriented planning and management; improving internal procedures; training staff; and clarifying relations between different actors and levels of government.

FURTHER INFORMATION

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OECD. 2004. Toolkit for Better Environmental Inspectorates in EECCA.

OECD. 2005. Integrated Environmental Permitting Guidelines for EECCA Countries.

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OBJECTIVE 2.1 AIR QUALITY

INTRODUCTION

Air pollution represents a significant health concern. Across Europe, fine particulates of anthropogenic origin (PM) are responsible for 80% of the health impacts of urban air pollution – for the EU25 more than 350,000 deaths a year can be attributed to PM, both in cities and rural areas affected by regional air pollution.

In addition to strict health impacts, air pollution also has impacts on public finance, both on the expenditure side (given by hospital admissions and increased use of medication) and revenue side (reduced fiscal receipts from reduced working time).

Following the structure of the EECCA Environment Strategy, this chapter focuses on policies to control urban air pollution. But indoor air pollution is also a major contributor to the burden of disease, particularly in the poorer EECCA countries were many households (predominantly but not exclusively in rural areas) use dirt fuels for cooking and heating[12]. Progress in the context of the UNECE Convention on Long-Range Transboundary Air Pollution is discussed under Objective 7.

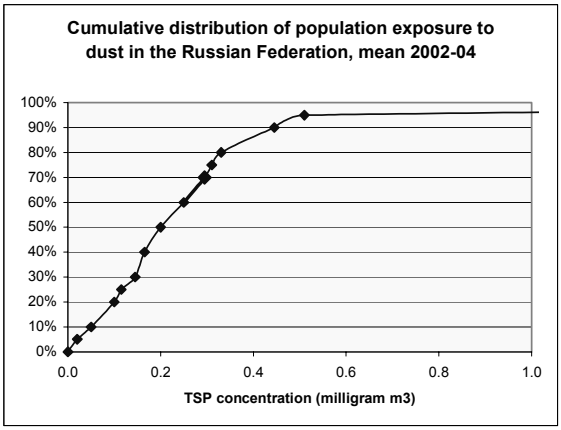
This chapter builds on work done by EEA (Air Pollution chapter of their Belgrade Report) as well as input from WHO staff.

CURRENT SITUATION

Lack of monitoring data of sufficient quality precludes an in-depth assessment of the state of air quality in EECCA, but both available data and modelling indicate that concentrations of pollutants in the atmosphere routinely exceed maximum allowed concentrations – for example, recent WHO analyses indicate that 47 million Russians are exposed to NO2 concentrations double the WHO guideline level (EEA, 2007), and in Azerbaijan authorities report that 27% of monitored samples breach the allowed limits (WHO, 2005b).

Box 2.1.1 Air Pollution in Russian Cities

WHO has recently studied the level of air pollution in the Russian Federation. Data on concentration of total suspended particulates (TSP) in background urban locations from 98 cities with a combined population of 45 million provided a population weighted mean (based on all available data) of 244 µg/m3. Even if PM10 contributes only half of the TSP mass, such levels of PM are several times above the current WHO Air Quality Guidelines level (20 µg/m3 of PM10 as annual average), and exceed even the Interim Target 1 of 70 µg/m3. These data indicate that the pollution levels in the cities are very high, and cause severe health risk in the urban population of the Russian Federation.



Source: WHO staff

While the precise extent of air pollution damages in EECCA is unknown[13], the main culprit is also thought to be PM – mostly related to transport emissions. In addition to primary PM

12. Indoor air pollution also has a link to biodiversity – the economic crisis and the increase in fuel prices led to a reversion to the use of dirty fuels that has put increasing pressure on forests.

13. The WHO project "Comparative Quantification of Health Risks" has estimated the health impacts of outdoor air pollution in major cities (population >100,000 people) of the world grouped in 14 regions, including region EUR-C consisting mostly of EECCA countries. The annual impacts of air pollution, indicated by particulate matter, estimated for this region amounted to 46,000 premature deaths and 320,000 years of life lost.

emissions (mostly from combustion processes), it is important to control emissions of other pollutants that contribute to the production of PM (so-called PM precursors) such as SO2, NOx and NH3.

Air pollution is set to worsen. Transport-related emissions, which may be responsible for over 80% of air pollution in EECCA cities, are rapidly increasing (EEA, 2007). Industrial and power-generation sources declined in importance during the first years of the transition, but remain significant and difficult to address, and emissions are increasing with resumed economic growth. In Central Asia, concentrations of PM (from desertification, desert dust and the dried Aral Sea bed) enhance the impact of particulates from cheap, low-quality coals used for power generation and from road transport. Transboundary sources of air pollution are also relevant – for instance, only 19% of PM2.5 levels in Georgia are "homemade" (WHO, 2006).

RECENT PROGRESS

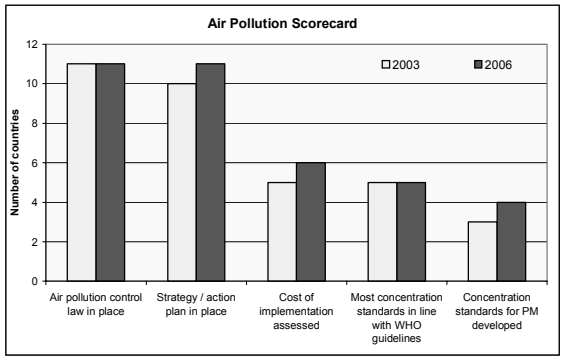
There is no evidence of accelerated progress on air pollution control. Overall, the problems identified in the EECCA Environment Strategy persist. EECCA countries have relatively well developed policy frameworks for air quality management. Those frameworks have been updated in recent years and generally have objectives and principles well covered, and several countries have issued additional regulatory acts. But implementation mechanisms are not yet described in sufficient detail.

A large number of policy measures could be applied to manage air quality. Some of those are under the purview of environmental authorities but many are the responsibility of other ministries or even local authorities. For example, as emissions from power generation are determined both by generation technologies and the level of electricity demand, energy efficiency measures constitute an important part of a comprehensive approach to air quality management (see Objective 4.2). Progress with transport-related policy measures (such as product standards for fuel and vehicles, fuel taxation or banning leaded fuels) is discussed under Objective 4.3.

There has been no significant progress in reform of ambient standards – most EECCA countries still use as air quality standards the maximum allowable concentrations (MAC) established by the Ministry of Health of the former USSR 30–40 years ago. Most MACs are more stringent than WHO guidelines, although they are laxer for heavy metals and non-existent for PM. These usually long lists of regulated substances (up to 3,619 in Moldova, of which only 9 are monitored) are not an effective instrument for air quality management – their comprehensive and regular control would be extremely difficult and costly and their violation does not generally trigger measures (such as higher pollution charges or lower emission limit values) that would provide incentives for emission reductions. On a positive note, Belarus has developed a standard for PM10.

Box 2.1.2 Air Pollution Control Scorecard

The baseline for this scorecard is contentious – international experts disagree that five countries have most concentration standards in line with WHO guidelines (see main text). Bearing in mind the shortcomings of self-reporting, the scorecard still provides useful insights. It suggests that policy frameworks are relatively well developed, that implementation measures are lagging behind, and that little progress has been achieved since 2003.



Source: EECCA countries' responses to EAP Task Force questionnaire

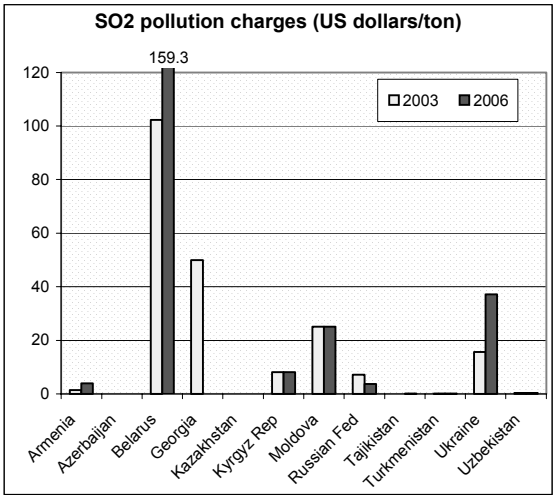
General issues of permitting, environmental impact assessment and economic instruments are discussed under Objective 1. In the area of **pollution charges** some, but limited, progress has taken place. Many countries report having increased rates – for example, SO2 and NOx charges have tripled and doubled respectively in Armenia, increased by 55% in Belarus and by 37% in Ukraine. As a result they may start having an impact on air pollution, particularly in Belarus (where rates are 160 USD/ton of SO2 and 480 USD/ton of NOx) and to a lesser extent in Armenia, Moldova and Ukraine. That is not the case for the other countries – in the Russian Federation and Kyrgyz Republic charges are only around 5-10 USD/ton, while in Azerbaijan, Tajikistan, Turkmenistan and Uzbekistan charges are below 1 USD/ton[14]. In any case, in no country has the system of pollution charges undergone the radical changes that are needed to make it an effective instrument.

Some countries, like Azerbaijan, have developed **awareness raising** campaigns. But this seems to be the exception rather than the norm. Awareness-rising will be important to support the implementation of measures aimed at energy efficiency and, particularly, transport (including the introduction and enforcement of emission standards for vehicles) that may otherwise encounter public opposition.

Despite some improvements, such as the introduction of PM_{10} monitoring in the Russian Federation (Moscow and Saint Petersburg) **i**n 2004 and in Belarus in 2005, **monitoring** of air quality has not made significant progress. The methods used are often obsolete and the equipment outdated. Emission inventories are still unsatisfactory in most countries. (See Objective 6.1 for progress on ambient monitoring and Objective 1 for progress on emissions self-monitoring).

Box 2.1.3 Pollution charges – not up to the job

Pollution charges can be a major policy instrument to fight air pollution from industrial and power-generation sources. The graph shows the level of pollution charges for SO2, according to data provided by EECCA authorities. For comparison, in 2004 SO2 pollution charges in Slovakia were around 60 US dollars per ton. The data suggests that (i) several countries have recently increased the pollution rates, but many have not done so, and (ii) pollution rates remain at very low levels, not providing incentives for the adoption of pollution abatement measures.



Note: In order to reflect only changes in charge rates and not fluctuations in currency exchange rates, the exchange rate for 2005 has been applied to both the 2003 and 2006 charge rates

Source: EECCA countries' responses to EAP Task Force questionnaire

MAIN BARRIERS

Progress in air quality management faces some of the same barriers that progress in other areas of environmental management. The economic crisis prevented political support for strong abatement measures in industry and energy utilities[15] – but as in many EECCA countries growth has strongly resumed, there is

14. For comparison, in 2000 the average for Lithuania, Czech Republic, Estonia, Latvia, Lithuania, Poland and Slovakia was around 45 USD/ton for SO2 and 55 USD/ton for NOx.

15. As it is discussed under Objective 5 (Finance), investments in air pollution control generally take place only after investment in water infrastructure and where a certain level of economic development has been achieved.

now a window of opportunity to introduce them. Policy implementation is also hampered by widespread violation of the law (related both to sociological and institutional issues) and weak inter-sectoral co-ordination.

A major barrier to improve air quality management may be one of approach. Air quality policy does not seem to be built around incentives – strategies are often declamatory, implementation mechanism absent, legislation incomplete, and pollution charges extremely low. In addition, transport issues seem not to be on the radar screen of environmental authorities.

Lack of funds for monitoring equipment and epidemiological studies, while important, is not the only barrier to develop fact-based air quality management strategies. There is little evidence that available information is being fully exploited to guide strategies and implementation activities. This has to do with methodologies (location of stations, sampling techniques) and skills, but also with institutional arrangements and the concept of the role of information in informing and guiding policy.

WAYS FORWARD

Develop a comprehensive air quality assessment and management strategy with a focus on priority pollutants, particularly PM10 and PM2.5. Within it, develop a realistic approach to enhancing monitoring (focusing on both ambient and emissions monitoring) that takes into account the monitoring capabilities of different agencies, including health ones.

Target transport-related emissions. Develop basic regulations to combat air pollution by mobile sources (fuel standards, exhaust gas emission standards) and enforcement measures (vehicle inspection programmes). Reform imported vehicles taxes and fines for polluters.

Put in place a realistic and effective incentive framework for industry. Drastically reform the system of environmental quality standards and shift the focus to alternative policy instruments. Drastically reform the system of economic instruments. Step up enforcement, in the context of policy packages that include awareness-raising and incentives for cleaner production.

Prioritise work on cross-sectoral coordination, particularly for transport-related issues. Environment authorities will need in many cases to take the lead and make important efforts in rallying transport, health and municipal authorities.

Invest in skills – making significant progress in the air pollution agenda clearly requires a different approach for which environmental authorities may not be fully prepared. Adopt a step-by-step reform process that is accompanied by upgrades in skills, particularly as regards implementation of policy instruments and cross-sectoral coordination. Take full advantage of existing guidelines and opportunities for capacity building available through international processes.

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WHO. 2005a. Health Basis for Air Quality Management in Eastern Europe, Caucasus and Central Asia.

WHO. 2005b. "Azerbaijan: progress towards Regional Priority Goal III" http://www.euro.who.int/eehc/implementation/20050826_7

WHO. 2006. Health Risks of Particulate Matter from Transboundary Air Pollution.

WHO. 2007. Air Quality Guidelines. Global Update 2005 (in press)

World Bank. 2006. Reducing Air Pollution from Urban Transport.

OBJECTIVE 2.2 WATER SUPPLY AND SANITATION

INTRODUCTION

Improving access to safe water supply and sanitation (WSS) services is a good social investment. According to WHO estimates, more than 13,000 children under the age of 14 die every year in the pan-European region, most of them in EECCA countries, and the social benefits of having access to safe WSS services exceed 13 times the cost of providing those services (OECD, 2006).

The international community is aware of the importance of WSS issues. Halving the proportion of population without access to an improved water source between 2000 and 2015 is one of the original targets of the Millennium Development Goals. And a companion target of halving the proportion of population without access to sanitation services was adopted in the 2002 World Summit on Sustainable Development.

This chapter focuses on the urban water supply and sanitation sector, as there is very little information available about the rural sector. This is not a reflection of the relative importance of rural issues, but rather of the information and analysis currently available. Indeed, in rural areas is where the water challenge is most difficult (see box 2.2.4). The chapter is based on work undertaken by the EAP Task Force Secretariat (OECD, 2006) including data that became available in early 2007.

CURRENT SITUATION

The official MDG water indicators provided by the UNICEF/WHO Joint Monitoring Programme provide a distorted picture of access to water supply and sanitation in EECCA – as they suggest that the region is on track to meet the water supply target. They suggest that the proportion of urban populations having access to centralised services in EECCA countries remains at high level (over 90% according to the official MDG indicator). However, they do not address the quality of that access, which has deteriorated.

The water systems in EECCA are falling apart – disruptions of water supply, pipe breaks and unaccounted-for-water are steadily increasing. As a consequence, water is not always available, and, when available, it is often contaminated – in Moldova 32% of water samples do not meet microbiological standards and 80% do not meet chemical standards (World Bank, 2006).

While overall trends are broadly shared across the region, the state of water services and their adverse impacts is quite diverse. Positive achievements have been registered in the richer EECCA countries and in some large cities. But the situation remains critical in small and medium sized towns, as well as in rural areas, where water services have effectively collapsed. Despite recent efforts, sector data show a continued trend of deteriorating infrastructure and the services that it provides. Significant additional efforts are required for the MDG targets be achieved, particularly in improving access to adequate sanitation facilities.

Figure 2.2.1 Country of services hours per day

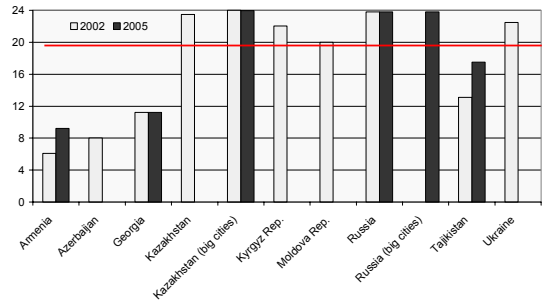
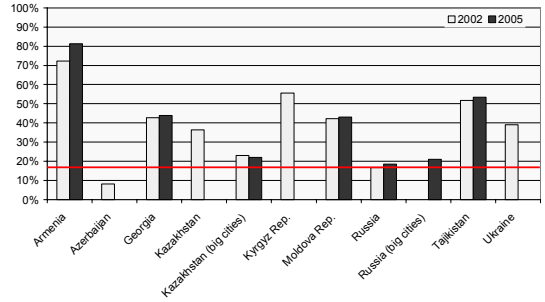


Figure 2.2.2 Unaccounted for water as % of total produced water



Source: EAP Task Force Water Utility Performance Indicator Database; OECD questionnaires

RECENT PROGRESS

Many EECCA countries have undertaken measures to improve the situation in the water supply and sanitation sector, most of them in line with the recommendations set out in the Guiding Principles adopted in Almaty in 2000**.**

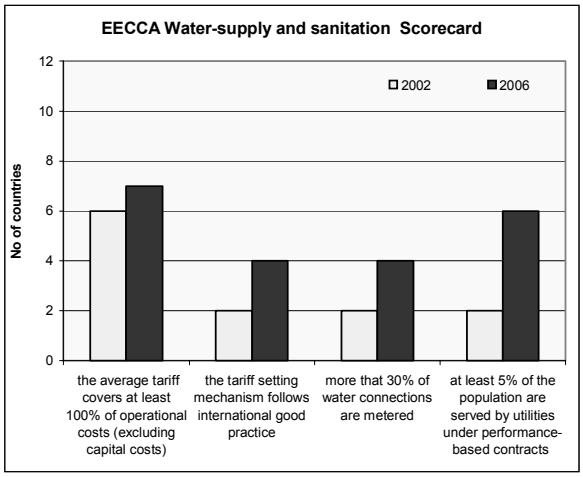
Many central governments have improved the **institutional and legislative framework** for the water sector. Some have developed legislation to better guide local level actors, mainly in setting tariffs. For example, the Russian Federation and Ukraine have changed their tariff-setting frameworks to better reflect the cost of service provision and insulate tariff-setting from political interference.

Less progress has been made with transferring **financial resources** from the central to the local level. The decentralisation of responsibility for providing WSS services has not yet been matched with commensurate financial resources, and in the current fiscal context local authorities can hardly be expected to cover investment costs in water infrastructure. As part of a regional development scheme, Ukraine has started to transfer co-financing funds from the state budget to local authorities to be invested in infrastructure, including WSS. However, across the region investment still falls short by a factor of five to 10 of the level that would be required to maintain and renew existing infrastructure (OECD, 2006). The low level of financial resources available for improving WSS services is likely to be related to the visibility of WSS issues in socio-economic development plans and poverty reduction strategies – where little progress has been made in including water sector targets.

Institutional arrangements at local level remain inadequate. There has been yet little progress in dissociating the responsibility for ensuring that WSS services are provided (attached to local authorities) from the actual provision of services (attached to local water utilities). Some cities have started to use performance-based contracts to engage private service providers or to better structure relations with municipality-owned utilities (see box 2.2.3), but these remain the exception rather than the norm. Few cities have made progress in corporatising those municipality-owned utilities.

Box 2.2.1 Water Supply and Sanitation Scorecard

This scorecard shows that progress is taking place, albeit at a slow place. Tariffs are now set in an improved framework in the Russian Federation and Ukraine. Tariffs in Ukraine now cover operational costs. Metering has improved in Armenia and Tajikistan. And the use of performance based contracts has reached a minimum critical mass in Azerbaijan, Kazakhstan and Ukraine.



Source: EAP Task Force Water Utility Performance Indicator Database; OECD questionnaires

Box 2.2.2. Promoting metering in Armenia

By helping to enhance the financial standing of water utilities, increased metering contributes significantly to improving water coverage. But how to promote metering? Armenia has devised and implemented an incentive framework for households to both voluntarily request meters and pay for their installation cost. In 2002 the National Assembly passed a law that offered to write off a portion of past arrears for those households installing meters within six months. The Household Arrears Restructuring Programme has had a major positive impact on the bill collection rate. In addition to improving the financial standing of water utilities, the programme has also enhanced transparency in the sector.

Source: OECD (2006)

Achieving financial sustainability also requires improving **operational efficiency.** Here progress has been limited. While increasing user charges have helped to reduce excessive demand, energy costs and unaccounted for water remain 2-3 times higher than in OECD countries.

Progress has been slow in **involving the public** in the reform of the water supply and sanitation sector. Public participation is an important prerequisite for securing public support for reforms and improving the effective implementation of reforms.

The role of **private operators** in the water sector remains very limited in most countries in the region, but has been evolving quickly in some others. In the Russian Federation, domestic private operators are now active in some 20 large cities (representing more than 10% of the urban population). In Armenia, all major cities are now being serviced by public-private partnerships with international operators. The debate between the public and private sectors has moved forward – it focuses now on the practical measures that will help to ensure the effectiveness of the involvement of the private sector.

Box 2.2.3 Getting it right at the local level

The West Siberian city of Surgut (population 282,000) launched in 2002 a EUR 87 million project aimed at improving its water and district heating services. The city's reputation for good management helped it to secure a EUR 45 million loan from EBRD. In addition to improving the quality of the services, capital investments have allowed for cost reductions through reduced energy consumption and increases in the operational efficiency. An institutional development component has focused in improving financial and operational performance by enhancing commercial, administrative and managerial capacities. Higher tariffs have allowed for debt service payments to be covered through the higher income of the two municipal utility companies. Most remarkably, in 2004 the municipality and the two utilities entered into service contracts, making the utilities and the water service "marketable" to private operators. Furthermore, the municipality publishes every year in the local press information on performance of the utilities, including operating efficiency.

Source: OECD (2006)

Box 2.2.4 What about rural water?

The water challenge is most difficult in rural areas, as shown by the wide urban/rural gap on access to drinking water. This is particularly true in the low income EECCA countries – for example, in Tajikistan 47 % of rural households have access to water, compared with 93 % in urban areas. The sorry state of the rural WSS sector in EECCA is related to a combination of issues, both institutional (unclear responsibilities), economic (high cost of providing "urban level" service to dispersed populations, extremely low ability to pay of rural inhabitants) and capacity-related issues (communities have little access to expertise). It is generally accepted that little progress has been made in taking policy measures to improve access to water supply and sanitation services in rural areas.

Source: EAP Task Force Secretariat staff

MAIN BARRIERS

Since in many countries the basic legal and institutional framework has largely improved, slow progress in reform at municipal level is now probably the most important barrier to enhance provision of water supply and sanitation. Increasing operational efficiency requires up-front investments. While finance for those investments would need to be provided by central governments, governments do not trust local authorities due to their poor performance record.

In most cases, capacities are the main bottleneck, particularly as regards the now needed commercial, financial and procurement skills. Technical skills, traditionally good, are now at risk, as many competent professionals are nearing retirement age and the sector proves unattractive for the younger generation. In some instances corruption also plays a role, as local politicians and utility managers may divert resources from water utilities for other ends.

Information is also an important barrier to faster progress, in several ways. In the area of rural water supply, even basic descriptive information is unavailable – this also contributes to rural water not being on central governments' radar screens. Also, the overly optimistic picture

provided by the MDG indicators risk diverting the attention of IFIs and donors to other regions and bypass EECCA countries.

WAYS FORWARD

Central governments could provide predictable resources for investment in water supply and sanitation infrastructure. An important step would be to develop sector-wide financial strategies in the framework of IWRM plans and to integrate them in Medium Term Expenditure Frameworks. Financial transfers to local authorities should be linked to outputs, such as extended coverage and increases in service quality. Given budgetary restrictions and affordability constraints, governments could consider maximising the number of households served by providing water and sanitation services through communal rather than in-house water services (particularly in poorer EECCA countries).

Central governments could also provide an appropriate incentive framework for local actors and help them to build their capacities. In the area of rural water supply and sanitation, establishing responsibilities for rural WSS at central level and learning from available experiences to develop their approaches should be the starting steps.

At the central government level, Ministries of Environment have a significant role to play in the water sector. Currently, effluent standards (a responsibility of Environment Ministries) are generally both very strict and not enforced. Their reform would contribute to improving the investment climate for water operators, as they currently find that an important cost element (wastewater treatment requirements) remains very unpredictable.

Local authorities could improve their planning efforts, particularly in terms of setting consistent and stable objectives, elaborating realistic financial strategies and translating those strategies into rolling, medium-term investment programmes. They could also clarify responsibilities of water utilities and municipalities (preferably through corporisation of water utilities and the establishment of performance-based contracts) as well as promote public participation in the development and implementation of reforms of water supply and sanitation services.

Donors could continue to provide grant funding, as their resources, while modest in terms of both overall funding needs and flows, are often catalytic. With bottlenecks now predominantly at local level (both in institutional and operational terms), international financial institutions need to develop mechanisms for borrowing at sub-sovereign level.

FURTHER INFORMATION

OECD. 2001. Guiding Principles for the Reform of the Urban Water Supply and Sanitation Sector in the NIS.

OECD. 2006. Financing Water Supply and Sanitation in Eastern Europe, Caucasus and Central Asia.

World Bank. 2006. Measuring What Matters.

OBJECTIVE 2.3 WASTE AND CHEMICALS

INTRODUCTION

Inadequate management of waste (particularly hazardous waste) and chemicals raise serious health concerns in the EECCA region. For example, inadequate waste disposal results in contamination of water sources and emissions of toxic and greenhouse gases.

But waste management also offers economic opportunities. Thanks to the context created by the Kyoto Protocol and the associated Clean Development Mechanism, capturing the methane produced in landfills can generate substantial income in excess of the necessary investment cost incurred (see box 2.3.2).

EECCA countries have accepted international obligations in the management of waste and chemicals. Relevant multilateral environmental agreements include the Basel Convention on transboundary movements of hazardous waste, the Montreal Protocol on emission of substances depleting the ozone-layer and the Stockholm Convention on persistent organic pollutants (POPs).

In addition, the World Summit on Sustainable Development established the goal that, by 2020, chemicals are used and produced in ways that minimize significant adverse effects on human health and the environment. To support global progress and coherence in the expanding chemicals agenda, the Strategic Approach to International Chemicals Management (SAICM) was launched in 2006.

Waste and chemicals management is an area where information, particularly on policy actions, is particularly hard to come by. This chapter draws heavily in the joint UNEP/EEA report "Sustainable Consumption and Production in EECCA and SEE countries", on the Waste Chapter of EEA's Belgrade Report, as well as on EAP Task Force work on Financial Strategies for Waste Management.

CURRENT SITUATION

Inadequate information systems mean that the size of the challenge posed by waste and chemicals in EECCA is not fully known. Illegal dumping and inadequate disposal sites are widespread. More than 90% of municipal waste is land-filled (EEA, 2007), but inspections have showed that over 90% of approved municipal landfills do not meet sanitary norms (UNEP, 2007). Around 6-18% of total waste in EECCA is classified as hazardous, of which only a minor part is properly handled (UNEP/EEA, 2007). This is aggravated by the legacy of radioactive, military and industrial and agro-chemical waste – including persistent organic pollutants (POPs). Also, a high-share of resource extraction sectors (mainly metals and fuels) in the economy results in high amounts of mining waste.

The challenge keeps increasing, as the small but growing middle classes are increasingly adopting the consumption patterns of Western Europeans. For a selection of 5 countries for which data is available, waste generation increased 27% between 2002 and 2004 (EEA, 2007). Average growth of collected municipal waste in the Russian Federation and Ukraine is about 9% per year (EEA, 2007). High disposal costs for hazardous waste in Western Europe puts additional pressure on EECCA systems – such as those of Belarus and Ukraine – through illegal waste trade.

RECENT PROGRESS

Some progress is taking place at the **policy development** level. Waste legislation is being revised and national strategies for waste and chemicals management are being developed. But many countries have not yet prepared action plans and effective legislation to manage municipal waste.

Good waste **registration and statistics** is often a prerequisite for initiating action. Belarus, the Russian Federation and Ukraine have now better waste data collection systems, but half of EECCA countries report not having a system to monitor waste flows.

Not many efforts have been devoted to waste **prevention**. An exception is Belarus, where extended producer responsibility has been introduced. Use of economic instruments remains limited and ineffective across the region, as waste charges are not linked to any regulatory system for waste management, and revenues from the waste charges are not earmarked for the development of waste management facilities.

Proper waste **collection** remains a challenge. Some major cities, such as Tbilisi and Tashkent, have recently invested in bins, collection trucks and transfer stations. But in most countries, source separation of the different kinds of municipal waste is not taking place. A particular problem is the lack of separate collection and disposal arrangements for hazardous waste – including in Armenia, Kyrgyz Republic, Moldova and Uzbekistan.

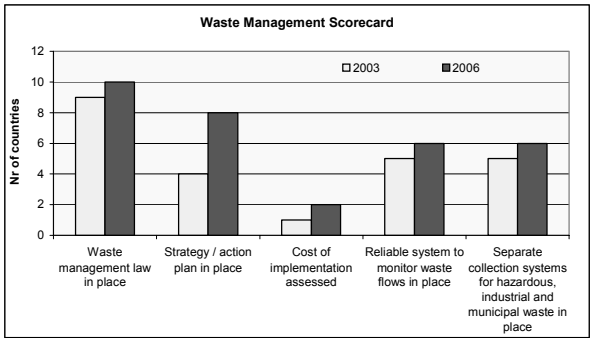
There has been no measurable progress in **recycling** and recovery of municipal waste since the Kiev meeting. Current recycling efforts concentrate on industrial waste, driven by economic forces (value of raw materials). Belarus has introduced a system of coloured-bins to facilitate recycling of household waste.

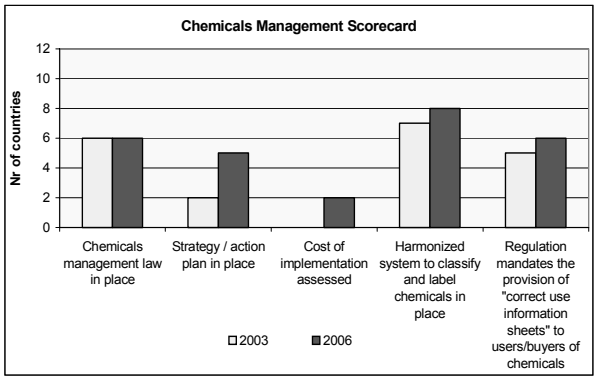
Safe land-filling remains a major issue. Municipalities still cannot afford major investments in waste management, and obstacles to inter-municipal co-operation remain. But some progress is finally happening. Azerbaijan is building one sanitary landfill with German support. Belarus has launched a programme for mini-landfills, particularly targeted at rural communities. And Armenia and the Kyrgyz Republic are taking advantage of the opportunities offered by the Clean Development Mechanism to upgrade their landfills (see 2.3.2).

Little progress seem to have happened in dealing with **hazardous waste** – despite it being the most important type of waste in terms of health impacts. There are no domestic systems to track hazardous waste in the region. Only a few countries have technical facilities for safe disposal of hazardous waste. No progress seems to have happened with on-site storage.

Box 2.3.1 Waste and Chemicals Management Scorecards

While EECCA countries providing information for these scorecards may have interpreted the goalposts and their achievement in different ways, the scorecards suggest that progress is happening, particularly in the formulation of strategies. The cost of implementing waste strategies is rarely assessed, though – an indication that implementation will not be automatic. Recent chemicals strategies seem to do better in that regard. Overall, country responses suggest that waste management has a stronger basis in Azerbaijan, Belarus, the Russian Federation and Ukraine.





Source: EECCA countries' responses to EAP Task Force questionnaire

Box 2.3.2 Waste-to-Energy: Unlocking the potential

Under the Clean Development Mechanism, the Kyrgyz Republic is working with Denmark to capture the methane generated in the Bishkek landfill and use it to produce energy. This project will help to prevent the equivalent of 0.5 million tonnes of CO2 emissions, valued at EUR 3.3-5.2 million, generating a net income (after deducing project costs) for the Kyrgyz Republic of EUR 1.1-2.5 million. Armenia has made similar agreements with Denmark and Japan. The Armenian project will help to prevent the equivalent of 2.2 million tonnes of CO2 emissions and generate 200 GWh of clean energy over 16 years.

Source: EEA (2007)

EECCA countries still lack sound law enforcement and monitoring systems to halt illegal **transboundary movements** of hazardous waste. While all EECCA countries (except Tajikistan) are party to the Basel Convention, and for the most part report to have implemented most of the principles of the Convention in their national legislation and strategies, the implementation of strategy and legislation on hazardous waste is to a great extent dependent on international support. Six EECCA countries report training customs officials in transboundary movements of hazardous substances.

The waste management sector has started to attract **private operators**. But service levels are generally not well defined, capital investment plans are not devised or followed through, and compliance with environmental standards is not thoroughly monitored and enforced.

Progress is happening on **chemicals** management, largely thanks to international support. Information on chemicals is particularly unreliable, but it is improving – partly thanks to POP-related projects. Armenia and Moldova have submitted national implementation plans to the Stockholm convention. POPs-related projects have been launched in Belarus and Georgia. Several projects are underway in Moldova dealing with re-packaging, safe temporary storage and final disposal of pesticide waste. Under SAICM, Armenia has developed a country profile and Belarus will develop a pilot project. Under the Artic Council Action Plan, several projects addressing obsolete stocks have been launched in the Russian Federation.

Legacy issues and resource-based economies mean that **soil contamination** is a very significant problem in EECCA. Some remediation activities have been carried out by the public and private sectors (such as oil companies). But there are no systematic procedures and coherent plans for the clean up of contaminated land, except in the areas affected by the Chernobyl accident. Inadequate liability provisions means that contaminated sites are often "orphan".

Box 2.3.3 PRTRs – Making eco-efficiency gains possible

Pollutant Release and Transfer Registers (PRTRs) are databases of chemical releases to air, land and water from factories or other sources. Targeting a broad public audience, they support the right to information on toxic waste and other forms of pollution. But the main benefit will accrue to industrial facilities, as they will be able to benchmark themselves with other facilities and identify areas were costs from inefficient processes can be reduced. Examples of progress on PRTRs include the establishment of state committees in Kazakhstan and Tajikistan, the decision of Armenia to develop a PRTR to meet the inventory demands of the Stockholm convention (with UNITAR expertise and Canadian funding), several initiatives in the Russian Federation, and the launch of a SAICM pilot-project in Belarus. A major barrier to the introduction of PRTRs is that their benefits are not well documented (useful estimates of implementation costs, on the other hand, are readily available). The implementation of PRTRs demands reforms of the legal frameworks related to information management (so that integrated information systems can be built around PRTRs) as well as inter-ministerial coordination. Progress with PRTRs will demand active involvement of Ministries of Industry and Trade, with programmes focused on awareness-raising and training for the business community. Ministries of Environment have a fundamental role to play in launching and structuring such multi-stakeholder processes.

Source: UNECE staff

MAIN BARRIERS

Major barriers to improving waste management in EECCA include the lack of basic information, the fragmentation of responsibilities and an inadequate financing system.

In contrast with CEE countries, EECCA countries lack the strong driver of EU legislation to invest in waste management systems. But this offers as well the opportunity to use more flexible and less costly technologies.

Dealing with legacy issues is made more difficult by the lack of clear ownership of contaminated sites ("orphan" sites)

Progress in developing and implementing new chemical policies is slow partly due to intense international and/or stakeholder processes.

WAYS FORWARD

Define clear responsibilities for waste management and improve co-ordination among relevant agencies. Provide guidance from central level to municipalities on how to manage waste.

Develop integrated waste management strategies with realistic short, medium and long-term goals. Pay particular attention to waste prevention, hazardous waste management and safe disposal – including by taking advantage of Kyoto mechanisms. Strategies should be supported by basic information on waste composition, consider waste as a resource (maybe modernising existing reuse systems), and include a public awareness element.

Develop a business model to manage waste. Define service areas. Consider inter-municipal co-operation – to take advantage of economies of scale. Assess carefully technology choices – favouring flexible and less costly ones. Engage private operators making use of performance-based contracts – contracts should define service levels and capital investment plans and have built-in efficiency and compliance incentives. Monitor and enforce the performance of private operators.

Fix the financing system for waste management. Provide co-funding from the central budget to cover the public good aspect of waste management. Progressively revise fees and charges for waste management services (collection charges, tipping fees) – to apply the polluter pays principle and cover the private good aspect of waste management. Ensure that those resources get invested in the waste system.

Improve national and regional coordination for the management of chemicals and hazardous waste. Improve definitions of hazardous waste to facilitate control and sound management. Develop domestic tracking systems for hazardous waste.

KEY READINGS

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EEA. 2007. Europe's Environment: the Forth Assessment. (forthcoming).

OECD. 2007. Environmental Finance Trends in EECCA. (forthcoming).

OBJECTIVE 3.1 WATER RESOURCES MANAGEMENT

INTRODUCTION

Sustainable water resources management is part and parcel of the MDG target on reversing the loss of environmental resources. Water resources management requires infrastructure (for managing floods and droughts, multipurpose storage, water quality and source protection) but also institutional frameworks, management instruments and also to consider the political economy of water management.

Water is the basis for the development of key economic sectors in the region, starting with agriculture, but also including energy and industry. Although water supply and sanitation (see Objective 2.2) accounts for less than 15% of water uses, integrated management of water resources is increasingly important to deliver quality water supply and sanitation services. Ultimately, what is important is not water itself but water services (from irrigation to navigation to sustaining biodiversity). That perspective shift has not yet happened in EECCA.

This chapter focuses on domestic management of water resources, paying particular attention to integration aspects (the Johannesburg target) and water pricing. It partially draws on dedicated input produced by UNDP as well as available reports from EEA, Global Water Partnership, UNEP and the World Bank. Trans-boundary water issues, as well as marine issues, are covered under Objective 7.

CURRENT SITUATION

EECCA countries face a wide and diverse water resources agenda. On the quantity side, Azerbaijan, Turkmenistan, and Uzbekistan are classified as water stressed, while 300 major Russian cities are prone to floods. Irrigation accounts for over 60% of water use in arid EECCA countries (EEA, 2007).

On the quality side, large rivers such as the Volga, Kura and Syr Darya are heavily polluted. Pollution hotspots are found downstream of large cities due to discharge of insufficient treated wastewater; heavy metals from mining and industry and ammonia and nitrates from the fertiliser industry.

Despite high wastewater connection rates large amounts of wastewater are discharged untreated into watercourses as many treatment plants are no longer operational – around 80% in Georgia, Moldova and Tajikistan (EEA, 2007). Discharges from diffuse sources, in particular agriculture, are very difficult to control.

Water abstraction and pollution discharges experienced reductions during the economic crisis years, but water-efficient or pollution control technologies have not been introduced.

Climate change will aggravate many of these problems, changing rainfall and river flow patterns, but also affecting demand, particularly in agriculture.

Box 3.1.1 Water Management Issues in EECCA

EECCA countries face a complex water resources management agenda. Still, all water resource management issues do not have the same importance in all EECCA sub-regions. The table identifies what water resource management issues are most important in each sub-region. Water supply and sanitation is not included in the table, as it is dealt with elsewhere in this report.

	RF	BUM	CAU	CA
Legislation and regulation			√	
Institutional strengthening		√	√	√
Floods	√	√	√	√
Water flow monitoring and glaciers		√	√	√
Climate mitigation and forecasting	√	√	√	√
Irrigation and drainage	√		√	√
Wetlands and coastal zone management		√	√	√
Dam safety	√		√	√
Integrated basin management		√	√	√
Transboundary water management	√	√	√	√

Note: RF=Russian Federation; BUM=Belarus, Ukraine, Moldova; CAU=Caucasus; CA=Central Asia

Source: World Bank (2002)

RECENT PROGRESS

Progress on **integrated water resources planning** is happening, although at a relatively slow pace. Transition of the water sector to a governance system based on integrated water resources management (IWRM) principles is in progress in just about all EECCA countries. But countries in the region are at different levels of readiness to develop and implement appropriate IWRM and Water Efficiency plans. Some countries are already on the way towards practical implementation of more integrated approaches to water resources development, management and use (Armenia, Kazakhstan), but others have only taken initial steps in this direction (see box 3.1.2). Overall, a river basin management approach has not yet been adopted

New **legislation** has generally focused on establishing the framework for bilateral cooperation, not on river basin management (although very few bilateral agreements have been concluded since Kiev). Kazakhstan and the Russian Federation have passed Water Codes, establishing the priority of water body protection over water use and a river basin management approach. Armenia has integrated IWRM principles in the bylaws that develop the 2002 Water Code.

Little progress has been achieved on **integration.** Achieving *integrated* water resources management requires buy-in from line ministries. In EECCA, IWRM implementation has started with the establishment of river basin organizations (with different names) on the basis of the old territorial branches of water committees. This is a positive step, but early experience suggests that integration of other sectors in the work of those river basin organizations is not yet happening.

While the legal and institutional framework are relatively well developed and IWRM issues are often included in national development plans, gaps in **institutional capacity** and serious resource constraints result in action plans not in place—for example in the Kyrgyz Republic, Moldova, Tajikistan and Uzbekistan.

There are examples of successful community mobilization – for example in Uzbekistan and the Crimean peninsula. But lack social capital on which to base **participatory** water resource management is a real problem.

Awareness raising campaigns for politicians and water professionals have taken place – for example in Kazakhstan and Armenia. But in many cases there is still little progress with raising awareness among major water users.

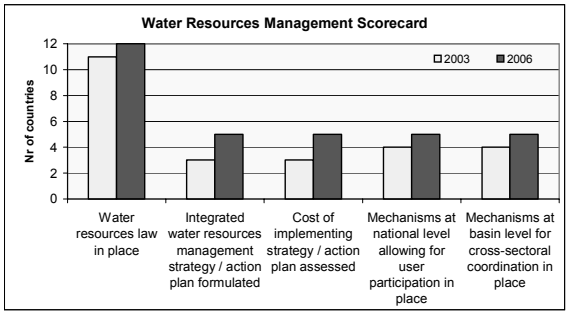
Box 3.1.2 Has EECCA met the 2005 IWRM target?

At the 2002 World Summit on Sustainable Development (WSSD) 193 countries committed to "develop integrated water resources management and water efficiency plans by 2005". Progress in the EECCA region is roughly in line with the rest of the world. According to a survey by the Global Water Partnership, Armenia and Kazakhstan are classified as having plans/strategies in place, or a process well underway, and incorporating the main elements of an IWRM approach. The other four Central Asian countries are in the process of preparing national strategies or plans (the Kyrgyz Republic, Tajikistan and Uzbekistan have developed "roadmaps" on the reform process towards IWRM) but require further work to live up to the requirements of an IWRM approach. Azerbaijan and Georgia have taken only initial steps in the process towards preparing national strategies or plans and have not yet fully embraced the requirements of an IWRM approach. The other four countries (Belarus, Moldova, Russian Federation and Ukraine) were not surveyed or didn't respond. The MDG Task Force has suggested that the WSSD target should be interpreted as calling for the "initiation of a robust water resource management process" rather than simply the creation of a traditional prescriptive "Plan" – by this definition 75% of EECCA countries have met the target.

Source: Global Water Partnership (2006), UNEP (2006)

Box 3.1.3 Water Resources Management Scorecard

As it is the case with the scorecards presented elsewhere in this report, countries may have interpreted the questions in different ways. Their responses suggest that water resources management is an area lagging behind but also one where progress is taking place, albeit slowly.

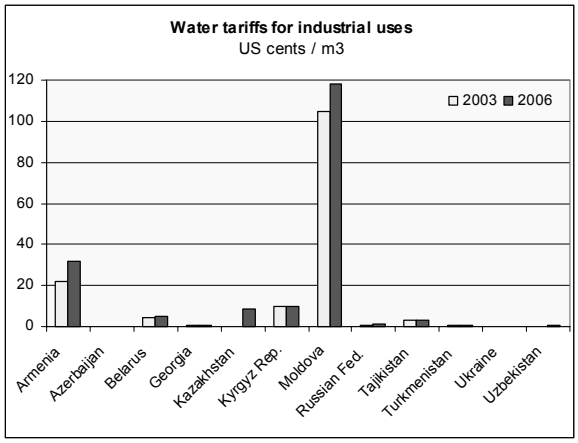


Source: EECCA countries' responses to EAP Task Force questionnaire

Progress on **water pricing** is uneven, at best. Water prices were heavily subsidised before 1990, but in some countries there has been a marked increase in prices during transition, resulting in lower water use. Currently, Azerbaijan, Georgia and Turkmenistan effectively have "zero tariffs" (less than 0.1 US cents/m3) for all water users. In addition, Kazakhstan, the Russian Federation and Uzbekistan charge "zero tariffs" for irrigation. Even for countries that charge for water, tariffs are not always revised annually and so are eroded by inflation – that has been the case of the Kyrgyz Republic and Tajikistan.

Countries that have recently increased nominal tariffs include Armenia (doubled for household and agricultural uses), Belarus (doubled for households and increased by 18% for industry), Moldova (13% increase for industry), the Russian Federation (70% increase for industry and 17% increase for households), and Uzbekistan (roughly a 150% increase for all users). Only Armenia, Kyrgyz Republic and Tajikistan seem to charge above 5 US cents/m3 for irrigation. In EECCA, tariffs for industrial uses are rarely above 10 US cents/m3 (see figure 3.1.1)[16].

Figure 3.1.1 Water tariffs for industrial uses



Note: No data for Ukraine. No data for Kazakhstan in 2003. Tariffs calculated using 2005 exchange rates.

Source: EECCA countries' responses to EAP Task Force questionnaire

Box 3.1.4 Kazakhstan's National IWRM

In Kazakhstan, a formal network of 24 institutions (government authorities; planning, research, and academic institutions; and NGOs) is facilitating the development and implementation of the national IWRM plan. Progress runs from the incorporation of the basic IWRM principles in the 2003 Water Code to awareness raising campaigns for politicians and water professionals. The Kazakh experience highlights the need for a modern Water law, an inter-ministerial working group, the availability of an "early draft of the draft plan", education of stakeholders, establishment of stakeholder river basin councils, and public awareness campaigns.

Source: UNDP Water Knowledge Fair

EECCA countries have been a long history of water **monitoring**, although biased towards monitoring larger rivers with an emphasis on upstream/downstream monitoring of major cities. There are not signs that the significant decline in water quality monitoring experienced over the last 15 years has reversed.

16. For comparison, in the late 1990s water prices in OECD countries were generally about USD 1-2 for households, USD 5-1.5 for industry, and less than USD 0.01 for agriculture (OECD, 2003)

Box 3.1.5 Building bridges in the Volga basin

The Volga basin comprises 40% of the population of Russia, 45% of the country's industry and 50% of its agriculture. The river and its basin suffer from poor water quality and ecosystem degradation. Mainly as a result of household and industrial wastewater discharges (and given the absence or poor condition of wastewater treatment systems) most sections of the river are classified as polluted and 22% as dirty. Water management problems include weak institutional coordination, lack of good local governance, the safety of dams and hydro-facilities, and unsound waterway and infrastructure conditions.

The Russian government passed in 2006 a Water Code that establishes and strengthens basin management bodies, including regional ones. But lack of cooperation between all stakeholders slows down progress. To help solve this problem, the CABRI-Volga project (an international project involving 17 public and private sector partners from the Russian Federation, the EU and the UN) has made use of institution-twinning and networking to enhance institutional cooperation around environmental risk management.

Source: CABRI-Volga Project staff (www.cabri-volga.org); EEA (2007)

MAIN BARRIERS

EECCA countries face major political, cultural and capacity barriers in their way towards integrated water resources management. In many countries in the region there is still little political willingness to reform water tariffs and enhance public participation. The water sector has not yet completed a transition to a "water services" mentality. And water institutions are weak – particularly as regards "integration" aspects of water resources management.

In addition, there is no clear sense of the costs of inaction (whether regarding water services, ecosystem services or transboundary cooperation) *viz-a-viz* investment costs.

WAYS FORWARD

Advance with IWRM planning. Make the preparation of the IWRM plan/strategy a dynamic instrument which progressively identifies necessary future actions in water resources management, water infrastructure development, improved water efficiency and better water service provision. Define clear and measurable targets, and strengthen water monitoring and information management to assess whether the targets are met – including by developing skills for data collection and analysis.

Work towards integration bottom-up, by promoting decentralization (including pricing functions and public involvement in water management).

Focus on the efficiency of water use and on improving the management of river ecology. Speed up demand management, including pricing reforms to encourage technical and allocative efficiency, but also through public information campaigns.

Strengthen institutions and build capacity in water management. Support the establishment and operation of basin authorities. Encourage water user associations aimed at improving water use efficiency in the irrigated agriculture sector.

FURTHER INFORMATION

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World Bank. 2002. Water Resources in Europe and Central Asia. (2 volumes).

OBJECTIVE 3.2 BIODIVERSITY CONSERVATION

INTRODUCTION

Biodiversity is a global public good. And the EECCA region is a significant "provider" of this global public good, as it is home to ecosystems of global importance – including the Caucasus region, the Black Sea wetlands complex and the Central Asian mountains.

But biodiversity – and the ecosystem services it provides – also contributes to national development goals, including sustainable livelihoods. Reconciling land use and development needs with the conservation of biodiversity and maintenance of ecosystem services will help to ensure both the conservation of the rich natural heritage of EECCA countries and the improvement of the well-being of their citizens.

EECCA countries are signatories to many biodiversity-related multilateral environmental agreements (MEAs) and have committed to achieve some demanding targets. Globally, the Parties to the Convention on Biological Diversity (CBD) committed to halt the loss of biodiversity by 2010, the World Summit on Sustainable pledged to achieve by 2010 a significant reduction in the current rate of loss of biodiversity, and the Millennium Development Goals include now the CBD target. In the pan-European region the biodiversity target is stricter, as the Pan European Biological and Landscape Diversity Strategy (PEBLDS) agreed to halt the rate of biodiversity loss by 2010.

EECCA Ministers of Environment, however, find it very difficult to ensure implementation of biodiversity-related MEAs and achieve biodiversity targets, since many of the topics that need to be addressed lie under the purview of their colleagues in Agriculture, Forestry, Economic Development or Trade ministries.

The transition from centralised economies to market economies provides an opportunity to look at better and more sustainable models of development that address biodiversity conservation issues from all perspectives: space (protected areas), sectors (sustainable use) and species (legal measures and control of invasive alien species).

This chapter draws on EEA work (Biodiversity chapter of the Belgrade Report) as well as input from UNEP (PEBLDS Secretariat).

CURRENT SITUATION

Biodiversity status and threats keep evolving. Overall, biodiversity is still in decline in EECCA – particularly in farmland, mountain regions and coastal zones. The main threats to biodiversity continue to be habitat destruction, degradation and fragmentation, followed by the introduction of invasive alien species, overexploitation and pollution. Current trends include the following (EEA, 2007):

- Damage from long-range air pollution has stabilized.
- Agriculture still exerts a high pressure on biodiversity, particularly in the core areas of production, such as Ukraine.
- Over-grazing is a major problem in several countries, such as Georgia and Armenia.
- Water quality has generally improved, but water extraction causes large-scale desertification and salinisation in Central Asia.
- Forest cover has generally increased, mainly due to spontaneous re-growth and afforestation of abandoned agriculture land, but it has decreased in Armenia, Kazakhstan and the Russian Federation.
- Illegal logging remains a substantial issue (particularly in the Caucasus), linked both to illegal trade of timber and fuelwood collection.
- Climate change is increasingly recognised as a serious threat, in particular for (endemic) species with a limited range in the Caucasus and the Central Asian mountains.

RECENT PROGRESS

The situation is relatively good in terms of **basic legal and planning framework**. Most of the EECCA countries have some sort of environmental legislation that also refers to biodiversity conservation and some have specific biodiversity legislation. At the same time, all countries report having biodiversity strategies. Progress on this front seems to have stopped, as suggested by the fact that half of the countries have not yet calculated the cost of implementing their biodiversity strategy / action plan.

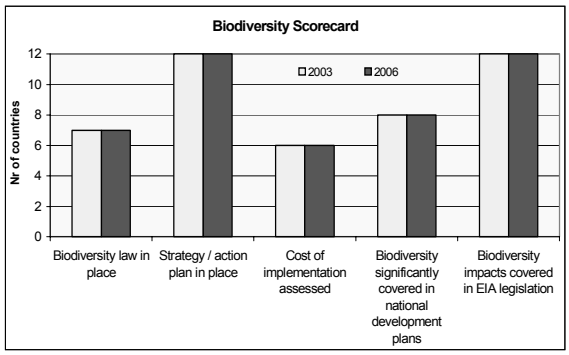
Little progress has been done on improving biodiversity **information**. After the collapse of the Soviet Union, funding was no longer made available for data collection and much of the scientific work related to the environment and data has not been updated on a regular basis. Lack of information has been used as an excuse for inaction. On the positive side, the Russian Federation is actively participating in a pan-European effort aimed at producing specific biodiversity indicators.

Area under protection has increased in half of the countries. Progress varies widely – among the countries with the lowest proportion of protected area in 2003, Kazakhstan has increased it from 2.4 to 7.9% of national territory, while Moldova has not extended its network of protected areas. Also noteworthy is Azerbaijan, which has increased its protected area by 20% to reach 6.8% of national territory (see Figure 3.2.1). EECCA countries are taking part in the pan-European Ecological Network (PEEN) initiative – PEEN pilot projects have taken place in Azerbaijan, Georgia, Russian Federation and Ukraine.

Significant efforts are being made in improving the **management of protected areas**. National funding is increasing, in some cases very rapidly. In dollar terms, it has increased over 7 times in Kazakhstan, more than doubled in Azerbaijan, Armenia and Turkmenistan, and increased 65% in Ukraine. Staff numbers have increased in at least 4 countries: 7% in Uzbekistan, 30% in Azerbaijan, 50% in Kazakhstan and 190% in Tajikistan (which had the lowest staff/area ratio in the region). Nevertheless national budgets are still modest: spending rarely exceeds one dollar per hectare and in most countries there is less than one staff member per 1000 hectares of protected land.

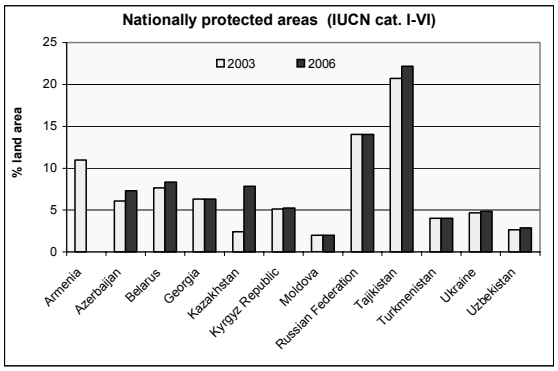
Box 3.2.1 Biodiversity Scorecard

While many countries have basic legislation and strategies in place, no progress is reported on costing strategies or including biodiversity issues in national development plans.



Source: EECCA countries' responses to EAP Task Force questionnaire

Figure 3.2.1 Area under protection



Source: EECCA countries' responses to EAP Task Force questionnaire

Progress on **integration of biodiversity issues in national development plans** is unclear. Eight countries report that biodiversity issues were already included to a significant extent in socio-economic development plans (such as PRSs and NDPs) in 2003. This is a relatively high number, and it is unclear to what extent this translates in biodiversity issues being included in programme implementation in the different economic sectors. The other four countries have not made progress.

High-nature value (HNV) farmland has not received much attention so far and there are no established instruments in any of the EECCA countries to support its conservation – although in Moldova and Uzbekistan there are international projects focusing on HNV farmland. In fact, there are no actual agri-environment programmes in EECCA countries except for some assistance for organic farming.

A majority of EECCA countries have explicitly identified **invasive alien species** (IAS) among the threats to biodiversity in their country in their reports to the Convention on Biological Diversity, but the countries that have incorporated IAS issues in their national biodiversity strategies and action plans have done so to a limited extent. A typical example is Kazakhstan: the problem is described but targets are not set. A noteworthy exception is Armenia, which includes a time schedule and budget. Ukraine has held a national IAS seminar and is developing a national strategy on invasive alien species.

Some progress is taking place in **awareness raising**. Kazakhstan is implementing a Communication, Education and Public Awareness programme, while four other countries (Armenia, Kyrgyz Republic, Tajikistan and Uzbekistan) have started to develop one.

Box 3.2.2 Sub-regional Initiatives to Conserve Biodiversity

To tackle the risks faced by the **Caucasus** ecoregion, a major global biodiversity hotspot, WWF led in 2004 the preparation of a comprehensive strategy for action to conserve and restore biodiversity over several decades. Two international funds have been established to achieve those goals. The Critical Ecosystem Partnership Fund will provide USD 8.5 million in small grants over 5 years to support the efforts of grassroot NGOs in transboundary cooperation, protected areas, sustainable resource use and awareness raising. The Trust Fund for the Caucasus Ecoregion will provide EUR 40 million to improve the management of current protected areas.

In the five **Central Asian** republics, land degradation – from overgrazing, soil erosion, salt damage to irrigated land, and desertification – directly affects the livelihood of nearly 20 million rural inhabitants. In 2006, those countries entered into a partnership with 12 development agencies to develop and implement a USD1.4 billion program to restore, maintain, and enhance the productivity of degraded land. The programme, that includes both national projects and multi-country activities, will run from 2006 to 2016.

Source: UNEP (PEBLDS Secretariat) staff

Box 3.2.3 The Kiev Resolution on Biodiversity

Approved at the same time of the EECCA Environment Strategy, it represents a more concrete framework for work on biodiversity conservation. Pan-European initiatives focus on development of biodiversity indicators, the creation of a pan-European ecological network (PEEN), conservation of high-nature value farmland (HNV), co-operation with forest agencies, invasive alien species and awareness-raising. EECCA countries have failed to meet the two targets of the Kiev Resolution on Biodiversity for 2006. Progress on HNV is particularly slow – no country has identified HNV areas. Progress on identifying PEEN areas seems a little more advanced – an indicative map has been completed for the Caucasus, Azerbaijan is working towards establishing a national ecological network, priority conservation areas and potential corridors have been identified in the Caucasus, and the Central Asian republics have adopted the WWF-led Econet project as the framework for the development of national plans of protected areas.

Source: UNEP (PEBLDS Secretariat) staff

MAIN BARRIERS

Biodiversity conservation in EECCA is facing a particularly challenging situation. While biodiversity is still in decline, there is low public awareness, low level on national priorities and decreasing donor funding. Major problems are created by the double perception that biodiversity conservation and economic development are incompatible, and that biodiversity policy and legislation are separate from all the other political and economic decisions taken at the national and sub-national level.

The current skill mix in Ministries of Environment is also posing problems. While biodiversity specialists in EECCA have solid scientific backgrounds, management, partnering and fundraising skills are in short supply. The ability to work on integration issues (agriculture and environment, forestry and environment) is also limited. Particularly critical is the absence of expertise to carry out exercises to demonstrate the costs associated with the loss of ecosystem services as well as the economic benefits that conservation and sustainable use of biodiversity provide to the economy.

Plain lack of awareness is still a major barrier – from the real costs of neglecting the maintenance of ecosystem services (at the decision-maker level) to the concept of HNV farmland (at the technical level both in the agricultural and environmental sectors).

WAYS FORWARD

Be realistic. Actions planned in the EECCA Environment Strategy may have been too ambitious.

Prioritise "mainstreaming" work, including through developing capacity on economic analysis of ecosystem services.

Develop policies on the areas of agricultural impacts and alien species – including new policy instruments, implementation and monitoring.

As regards protected areas, focus on enforcing protection of currently designated areas rather than expanding the protected area network.

Explore innovative financing for biodiversity conservation.

Improve biodiversity monitoring to have a basis for action and develop biodiversity indicators, but do not use lack of information to justify inaction. Make sure that biodiversity assessments evaluate and communicate the economic and social impacts of biodiversity loss.

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OBJECTIVE 4.1 ENVIRONMENTAL POLICY INTEGRATION

INTRODUCTION

Action by environmental ministries alone will not be enough to achieve environmental sustainability. This is recognized in target 9 of the Millennium Development Goals – it calls for environmental concerns to be integrated into country policies, plans and programmes. Environment is no longer to be considered exclusively as a sector to be managed by the environmental authorities, but rather a theme to be incorporated in different policy areas – whether energy, transport, agriculture, industry or trade.

A modern approach to achieving environmental objectives contributes to policy coherence and joined-up government – by promoting synergies between policies, reducing inconsistencies, maximizing policy effectiveness and/or service delivery, and providing a framework to solve potential inter-sectoral conflicts. In EECCA countries, the transition to market-based, democratic societies provides distinctive opportunities for pursuing "win-win" policies, where environmental (including environmental health) and sectoral policy goals can be achieved simultaneously.

The EECCA Environment Strategy identified energy, transport, agriculture and forestry as key sectors where integration of environmental concerns (sometimes known as "environmental mainstreaming") was particularly needed.[17] [18]

Progress with such integration is discussed in the following three chapters. This chapter presents a brief cross-sector comparison, building on the EECCA countries' responses to the EAP Task Force questionnaire. It also discusses progress with Strategic Environmental Assessment (a key tool to promote integration at strategic level) based on dedicated input by UNDP and Regional Environmental Centre for central and Eastern Europe.

RECENT PROGRESS

Slow progress is taking place across a number of variables that map the **institutional and strategic dimensions** of environmental policy integration (as opposed to programmatic and operational ones). The EAP Task Force questionnaire explores, in a rather crude way, seven "integration dimensions" across four sectors. Out of the possible 28 "opportunities" in 13 cases one country has achieved progress and in four cases more than one country made progress (most of those "opportunities" are covered in the scorecards presented for Objectives 4.2, 4.3 and 4.4). Overall, the bases for integration are stronger in the forestry sector and clearly lowest in the transport sector.

Inter-ministerial working groups are common, but not yet universal. New working groups have been established in Belarus (agriculture and environment) Georgia (energy and environment, forestry and environment) and Kyrgyz Republic (transport and environment, forestry and environment).

In roughly half of the countries the sectoral ministries have set up specialised **environmental units**. This is more usual in ministries dealing with natural resources (agriculture, forestry) than in those dealing with pollution (energy, transport). In the Russian Federation specialised environmental units in the ministry of energy and transport seem to have been closed down. In Kazakhstan and Turkmenistan, the ministry responsible for transport issues has not allocated environmental responsibilities – neither to a specialised unit nor across units.

Most countries have some sort of **environmental training** for sectoral ministry

17. One possible definition of environmental policy integration or environmental mainstreaming is "*integration of environmental considerations into sectoral programs, strategies and investments by shifting from pure compliance with environmental standards and regulations to environmental sustainability as a broad goal of the development process"* (World Bank, 2007)

18. Environmental policy integration is also needed in other sectors, such as industry or urban planning. Those two issues are briefly touched upon under Objective 2.3 and Objective 4.3, respectively.

staff. Since 2003, environmental training has been introduced in Armenia for agriculture staff, in Georgia for energy staff and in Tajikistan for energy and forestry staff.

In most countries, sectoral strategies include now **environmental targets**. Most progress has been achieved in including environmental targets in agriculture strategies – Armenia, Azerbaijan and Tajikistan have now done so. The transport sector clearly lags behind – only in five countries environmental targets are included in transport strategies, while that is the case in 10 countries for the other three sectors.

In half of the countries, sectoral ministries do not provide **input to environmental strategies** – this makes more difficult to ensure alignment between environmental and sectoral strategies.

Even if sectoral strategies include environmental targets, the strategies are usually not subject to any kind of **environmental assessment**. This is the area that gets the "lowest score" across the dimensions analysed – for example, Kyrgyz Republic, Tajikistan and Uzbekistan are the only countries reporting environmental assessment of energy and transport strategies.

Environmental Impact Assessment (EIA) can already be considered as a traditional tool to integrate environmental concerns in sectoral investments (see discussion under Objective 1). Still, several countries report not yet applying EIA to investments in energy and transport sectors.

More recently, **Strategic Environmental Assessment** (SEA) has emerged as a major tool to ensure integration of environmental concerns into plans and programmes. In EECCA, after four countries signed up the SEA Protocol to the Espoo Convention in Kiev, several initiatives have been developed to support SEA development and implementation in the region. They are usually carried out in the context of international projects involving UNDP, Regional Environmental Centre for central and Eastern Europe, UNECE, UNEP or the Dutch EIA Commission.

As a result, capacity development needs in SEA have been identified, strategies elaborated and training manuals (including national manuals for Georgia, Moldova and Ukraine) prepared. Several pilot SEAs have been implemented – for example for the Yerevan Master Plan, the Belarus National Tourism Development Programme and local planning in several Russian oblasts. In addition, new legislation to support SEA has been adopted (Armenia) or drafted (Georgia). But despite the legal obligation to conduct an environmental assessment of plans and programmes, it has proven challenging to align the Soviet-inherited system with internationally accepted SEA principles. Audiences in EECCA are still far from fully understanding the requirements and implications of the SEA Protocol.

MAIN BARRIERS

One major barrier to improved environmental policy integration is the culture of limited inter-ministerial cooperation. But the current skill mix in environmental authorities also plays an important role. Experts in environmental authorities usually have a strong scientific background. There is much more limited expertise in economics, in understanding how policy is developed in sectoral ministries and in linking environmental and sectoral developments – in sum, the skills to make the case for environmental sustainability. Also, the ability to relate with stakeholders (whether business community, civil society or, in this case, sectoral ministries) is still low in many countries.

In the particular case of SEA, extensive practical application is discouraged by the absence of clear, practically applicable guidance on how to implement SEA in the EECCA contexts – existing guidance often mechanically extends project-level Soviet-based requirements to strategic activities. Other barriers include limited experience among environment officials with internationally-recognised SEA practice, and limited openness of the planning system – which poses obstacles for carrying out assessment and consulting relevant authorities and the public during elaboration of plans and programs.

WAYS FORWARD

Further develop inter-ministerial coordination mechanisms, particularly in the transport area. Build the capacities of environmental staff to deal with sectoral issues, as well as the capacity of sectoral ministries to analyse the environmental implications of sectoral developments and how to manage them.

Further encourage the introduction of environmental targets in sectoral strategies. Introduce mechanisms to assess performance. Improve the timeliness and transparency of current planning and decision-making processes.

Review current national systems for environmental assessment of strategic initiatives to align them with international practice (such as the EC SEA Directive) and the requirements of the SEA Protocol. Raise awareness on SEA benefits among decision-makers and the public. Develop methodological guidance and train environmental and other public officials as well as environmental assessment practitioners. Implement SEA demonstration projects and support regional exchanges of SEA experience.

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UNECE and the REC (2006), Resource Manual to Support Application of the UNECE Protocol on Strategic Environmental Assessment.

OBJECTIVE 4.2 ENERGY AND ENVIRONMENT

INTRODUCTION

Environmental impacts from energy production, transport and use are many and significant. They range from land and water contamination from fossil fuel extraction and transport, to emission of local air pollutants and greenhouse gases (GHG) from fuel combustion, to radiation from inadequate disposal of nuclear waste. Local environmental impacts may be considered more pressing issues for EECCA policy-makers, but EECCA generates nearly 10% of global GHG emissions (UNFCCC, 2007).

Reliable and affordable energy supply is a pre-condition for economic growth. Ensuring access to affordable energy at the household level is becoming a significant issue for EECCA countries, partly due to infrastructure deterioration. Upcoming massive investment in energy infrastructure – the Russian Federation alone needs to invest around EUR 30 billion per year in energy infrastructure – may open up an opportunity for a more environmentally-sustainable development of the energy sector.

Integration of environmental considerations into the energy sector's policies and practices may have substantial rewards. Investments in energy efficiency would reduce energy costs, improve security of supply and mitigate the environmental impacts of energy use. On a global scale, some of the best opportunities for reducing GHG emissions will come from investments to improve energy efficiency in EECCA. The energy efficiency market in EECCA could potentially reach EUR 200 billion (UNECE, 2005), including resources mobilised through the Clean Development Mechanism (CDM).

Climate change will influence the design of energy systems. Energy demand patterns will change (with a greater need for summer cooling), and investment in energy transport infrastructure will need to take into account climate impacts, such as the melting of permafrost areas, putting the pipelines and other infrastructure at risk.

CURRENT SITUATION

In the 1990s, the large decrease in energy consumption in the EECCA region following the economic restructuring led to reductions in greenhouse gas and air pollutant emissions. But since 1998, energy consumption has been increasing, counteracting some progress made in reducing emissions intensity. Despite improvements over the transition period, energy intensity in EECCA is still 3 times higher than in Western Europe (EEA, 2007). Lack of investment has led to a decline in energy production efficiency to 31% (compared to 45% in Western Europe) and resulted in badly maintained pipelines (EEA, 2007). The use of renewable energy has stagnated – in 2003 it was only at 81% of 1992 levels (EEA, 2007).

Increasing oil and gas prices have made coal – the most polluting fuel – more competitive, further contributing to the rise in GHG emissions. While oil consumption has stabilised, production increased by more than 40% between 2000 and 2005 (EEA, 2007). Projected consumption increases in Western Europe will continue to drive energy production increases and related environmental problems in EECCA countries.

Access to energy services is not a major concern, as EECCA has high connection rates to electricity and heat supply networks. But quality and affordability of services are. Energy supply structures are mostly based on old-fashioned, inefficient technologies and a highly-intensive supply pattern. Electricity consumer prices for electricity will have to be increased substantially in most EECCA countries (more than doubling in some cases) in order to cover the cost of electricity from new plant and to incorporate the cost of environmental externalities through taxation (EEA, 2007).

RECENT PROGRESS

A major event since 2003 has been the ratification by the Russian Federation of the **Kyoto Protocol**, giving new impetus to the JI/CDM market. Several countries that previously did not have a national designated agency for submission of JI/CDM proposals have

identified or set up one – they include Belarus, Georgia, Kyrgyz Republic and Moldova. Most countries are developing JI/CDM proposals – Ukraine and Belarus are particularly active. But overall, the region is not taking advantage of the global carbon market.

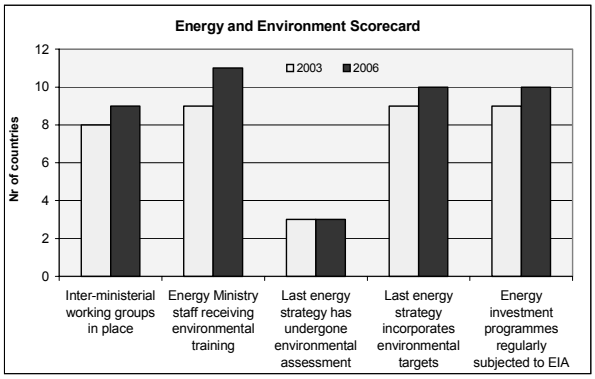
Little progress seems to have been made on **energy efficiency**. Most countries report having an energy efficiency agency – Georgia is one exception. But this does not seem to have translated into a much wider use of instruments to promote energy efficiency. Several countries do not yet have a national energy efficiency programme – they include Armenia, Georgia, Turkmenistan and, chiefly, the Russian Federation. Armenia has passed an Energy Savings and Renewables Law and established a dedicated Fund. Seven countries report having energy standards for home appliances in 2003, but none of the other five have introduced them. Most countries make use of performance-based energy codes (Armenia has introduced them recently), although they may need updating.

Some countries are moving quite strongly in terms of **pricing policies** for energy services such as gas and electricity. While this is probably not due to environmental concerns, it could have major environmental impacts if complementary policies (such as metering and information provision) are put in place. Indeed, in Georgia, consumption has dropped from 200-300 to 150 kWh per month per customer following re-metering (Energy Charter Secretariat, 2005).

In the case of **electricity tariffs** the situation and progress vary widely across the region. Armenia and Moldova have the highest electricity tariffs in the region (some 6 usc/kwh) and avoid cross-subsidisation, but tariffs have not changed in the last three year and inflation has eroded them. Tariffs in Kazakhstan, the Russian Federation and Belarus have significantly increased (for example, around 80% for industry in Belarus and 60% for agriculture and households in the Russian Federation) and average now some 4 usc/kwh. Uzbekistan has more than doubled tariffs – current levels average some 3 usc/kwh, but still only half that for agriculture. The Kyrgyz Republic has also increased nominal tariffs, 40% in the case of households, but they remain very low at around 2 usc/kwh. By far the worst situation takes place in Turkmenistan, where electricity is free for households and costs just 0.3 usc/kwh for industrial and agricultural users. The power sector does not seem to be yet on a financially sustainable path in any country, as generation, transmission and distribution costs are likely to add up to some 8 usc/kwh (Pagiola and others, 2002).

Box 4.2.1 Energy and Environment Scorecard

According to this scorecard, most countries have some basic "environmental mainstreaming" elements in place. Georgia and Tajikistan in particular have made progress on the dimensions tracked. The scorecard suggests that particular attention needs to be paid on getting the next generation of energy strategies formally reviewed from an environmental perspective.



Source: EECCA countries' responses to EAP Task Force questionnaire

Most countries had a target for **renewable energy** in 2003 (Turkmenistan being one exception). Since then, Azerbaijan, the Kyrgyz Republic and Tajikistan have put in place national programme to develop renewable energy, bringing the total to six countries. But, overall, policy frameworks to promote renewable energy are still in their infancy. Positive developments include the introduction of incentives in the form of guaranteed feed-in tariffs in Armenia, a resolution to develop wind power in Kazakhstan and the mapping of wind potential in Georgia.

Box 4.2.2 Will Ukraine realise its energy efficiency potential?

High energy intensity and high energy dependency from natural gas imports make Ukraine's economy vulnerable to price shifts and reduce its competitiveness. The country has an enormous potential to save energy, however – assuming modest improvements in energy efficiency, by 2030 energy savings would be as large as the UK's total energy consumption in 2004. Estimates in the new Energy Strategy show that energy efficiency will have a greater impact on the country's energy balance at a lower cost than all investments in new supply combined. In 2006, energy policy achievements included a stronger energy efficiency policy, raised energy tariffs and better government coordination. But for the energy efficiency promise to materialise, more attention and funding from the government are needed, so that policy and legislation are followed through with support for implementation plans.

Source: IEA (2006) Ukraine: Energy Policy Review

Major environmental improvements could be generated from improving **energy operations** According to IEA, at least 30 billion cubic meters – a fifth of Russian exports to European OECD countries – could be saved every year by enhanced technology or energy efficiency. Leakage of gas from the pipeline network of the EECCA has long been a concern (fugitive emissions account for 20% of all GHG gas emissions in the region), but the extent of this problem is lessening with increased investment (EEA, 2007). Kazakhstan – whose dependence on coal as a major energy source is responsible for nearly half of air pollutants in Central Asia – is working towards adopting clean coal technologies, including through incentives distributed by a dedicated Fund. Turkmenistan has rebuilt the Turkmenbashi refinery to comply with ISO standards. Georgia's efficiency policy actually puts the emphasis on generation and transmission, not on the consumer end.

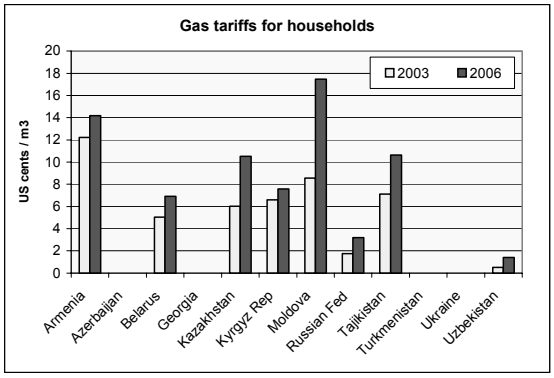
MAIN BARRIERS

Low prices are a major barrier to progress in the environmental performance of the energy sector. Final energy users do not have incentives to be more frugal in their energy use and invest in energy efficient appliances. And energy providers are starved of resources to upkeep energy infrastructure. In turn, social considerations reduce the appetite for price reform.

Lack of policy and regulatory frameworks are also a major barrier for the development of energy efficiency and renewable energy.

Box 4.2.3 Feeling the heat

As it can be observed in the graph, the last three years have witnessed important hikes in household gas tariffs. In nominal terms, tariffs have tripled in Uzbekistan, doubled in Moldova, and increased by about 80% in Kazakhstan and the Russian Federation. As it is the case with electricity, gas is free for households in Turkmenistan. But all countries seem to effectively subside gas consumption – the January 2006 agreement between the Russian Federation and Ukraine delivers Central Asian gas at 6 usc/m3 and Russian gas at 23 usc/m3.



Note: Azerbaijan, Georgia and Ukraine have not reported data.

Source: EECCA countries' responses to EAP Task Force questionnaire

Energy efficiency is facing a full set of additional barriers. There is a low level of awareness among consumers, vendors, and policymakers. Lack of up-front capital to buy new energy-efficient equipment or undertake required retrofit measures is difficult to access – as many projects are small and thus suffer high transaction costs and international investors are unfamiliar with local lending conditions. Energy efficiency also lacks the political lobby of the fossil fuel industry, with governments are more

likely to invest in increased supply, than to reduced demand.

WAYS FORWARD

Support the economic reform of the energy sector – it will generally be beneficial for the environment

Take advantage of the opportunities offered by the global carbon market. Provide constant political support and build capacity to develop carbon projects. Train bankers on energy efficiency and establish a network of financing specialists.

Make a wider use of instruments for promoting energy efficiency – such as labelling, audits, building codes, refurbishment of district heating networks, metering, and specific incentives for insulation. Include energy efficiency performance in permitting. Establish and regularly update performance standards.

Educate and inform – policy measures will have little impact if there is no understanding of them and what they imply.

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OBJECTIVE 4.3 TRANSPORT AND ENVIRONMENT

INTRODUCTION

A well developed transport system is an aspiration for all societies – it enables the free movement of people, services and goods, and it offers possibilities for trade, living, leisure, learning and shopping.

But transport, as we know it today, is not sustainable. Poorly functioning transport systems result in multiple and severe negative impacts – they include excess fatalities from accidents, time losses in traffic jams, mortality and morbidity from air pollution, contribution to climate change, and fragmentation of natural habitats from linear infrastructure (such as roads or pipelines). They also result in noise and reduced opportunities for physical exercise.

EECCA societies are faced with the challenge of reducing transport's irreversible damage to the environment and to the health of people, without losing the benefits of transport for society and economies. The 2002 World Summit on Sustainable Development emphasised the development of sustainable transport strategies as well as the deployment of investments and partnerships in sustainable transport systems.

This chapter draws in a number of available documents, including the Transport chapter of the forthcoming UNEP/EEA report on Sustainable Consumption and Production in EECCA and SEE countries and reports prepared in the framework of the UNECE/WHO Transport Health and Environment Pan-European Programme (The PEP).

CURRENT SITUATION

Across EECCA, 60,000 people die annually as result of road transport injuries, with head fatality rates twice as high as in other European regions even though traffic levels are much lower (UNECE/WHO, 2005), transport contributes to over 80% of air pollution in many cities (EEA, 2007) and the transport sector contributes around 8% of greenhouse gas emissions (EEA, 2007). In the Russian Federation the external costs of the motor transport has been estimated at up to 9% of the country's GDP in 2003: 48% from accidents, 33% from traffic jams and 19% from air pollution (Donchenko, 2004).

These impacts are exacerbated by outdated car technologies (90% of cars in Armenia and 86% in Belarus are more than 10 years old), low quality fuels (including leaded petrol), and the fact that cities – such as the centres of cities such as Yerevan, Almaty and Tbilisi – were not designed to take the levels of traffic that they are now experiencing (UNEP/EEA, 2007).

Declining public transport systems and growing demand for private transport make matters worse. In Moscow, the private car fleet has increased by 7.3% annually on average in recent years and has reached 240 cars per 1000 inhabitants. The Russian average is 160, three times the average of other EECCA countries and one third of the EU-15 average, leaving plenty of space for further increases across the region as economies keep growing (EEA, 2007).

While public transport in the Russian Federation still has over 85% market share in urban areas (Donchenko, 2004), public urban transport systems are declining across EECCA – for example, Armenian and Azeri trams halted operations in 2005 and the Georgian trams lost 94% of ridership in the last 20 years (UNEP/EEA, 2007). The decline of state-owned public transport system is being filled with private operators, usually using minibuses. But these bring new problems – particularly as regards safety.

RECENT PROGRESS

Strategic environmental **policy documents** tend to include transport as a priority, usually trough the air pollution link. Existing transport strategies still focus largely on infrastructure development, although some of them incorporate environmental targets.

Several EECCA countries have **procedures** or processes in place to improve the integration of environmental concerns into transport policies. In Armenia, Moldova, Ukraine,

Kyrgyzstan, Tajikistan and Uzbekistan, transport and environment issues are discussed in inter-ministerial working groups and the relevant ministries have regular contacts. In around half of the EECCA countries, transport ministry officials have received environmental training and there is a specialised unit in the transport ministry to deal with environmental issues. In Tajikistan the new transport strategy has undergone environmental assessment.

The use of economic instruments to influence transport demand, modal share and fuel choice is still limited. In some countries, **fuel duties** have increased in recent years – for example in Belarus, where they have trebled since 2003, and Azerbaijan, where taxes on petrol and diesel have increased by 11% and 112%, respectively. In some countries, such as Armenia and the Kyrgyz Republic, they have actually declined. Diesel fuel in Azerbaijan and all fuel in Turkmenistan are effectively subsidised (sold below the world market price before taxes). In most EECCA countries fuel prices are still too low to cover the direct cost of road maintenance and construction.

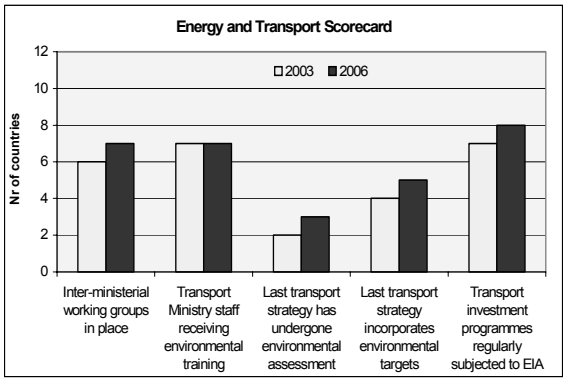
As many countries do not produce cars, import taxes have a potentially large impact in car fleet composition. However, current **import tax differentiation** is not always consistent with environmental objectives. For example, in Belarus cars less than 3 years old face higher import taxes that those between 3-10 years old. In Georgia, the import tax differentiation system (as well as the annual vehicle tax) works fully against environmental objectives, as decreases with vehicle age.

Leaded petrol has not yet been fully phased out in EECCA. Since 2003, leaded gasoline has been phased out in Kazakhstan, Kyrgyz Republic, Moldova and Uzbekistan. It is now legal only in Tajikistan and Turkmenistan. But leaded gasoline can be still bought in the black market of countries that have formally phased it out – such as Georgia.

No much progress has been made on improving **fuel quality standards.** As of July 2005 gasoline in 10 EECCA countries still had sulphur content above 2000 parts per million (ppm) – by comparison, it was below 500 ppm in Romania and Bulgaria and below 50 ppm in the Baltic countries. Moreover, these standards are often not enforced, as authorities are poorly equipped to measure fuel quality.

Box 4.3.1 Environment and Transport Scorecard

This scorecard suggests that slow progress is taking place in better integrating environment considerations into the transport sector. Progress in the dimensions considered is limited to the Kyrgyz Republic and Tajikistan. Glaring gaps appear in some fairly basic elements – such as working groups and training. The region is still a long way from greening transport strategies consistently.

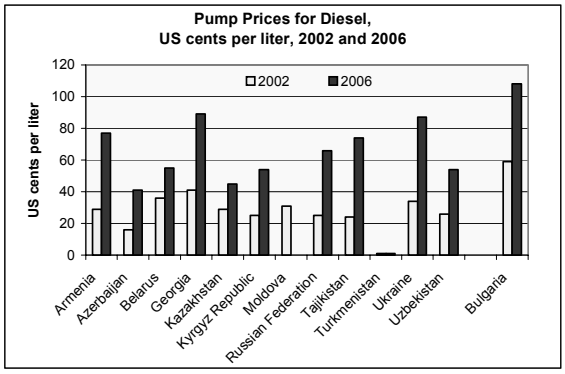


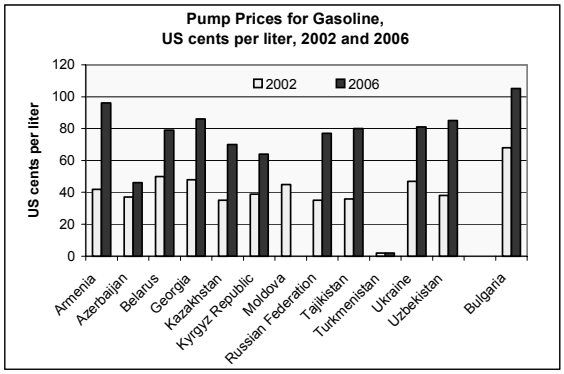
Source: EECCA countries' responses to EAP Task Force questionnaire

Over the last few years there has been a gradual introduction of European **vehicle emission standards**. The Russian Federation and Ukraine introduced EURO II in 2006 – this affects more than 70% of the EECCA population and will have a knock-on effect via imports on countries that do not produce cars (UNEP/EEA, 2007). Laws revising emission standards have been passed or are being discussed in other countries, such as Belarus and Armenia. Enforcement of EURO standards will be an issue, as a large part of the fleet fails to comply with the laxer GOST standards that are in place in most countries – for example 25–30% of vehicles fail to comply with the standards during random spot checks by the Moldovan State Ecological Inspection and the Road Police (Dimitrov, 2004).

Box 4.3.2 Fuel taxes

Fuel prices have significantly increased in the EECCA region due to higher oil prices. However, the differential with Bulgaria (the EU country with the lowest fuel prices) has persisted or even increased. Transport fuels are almost free in Turkmenistan. Oil producers such as Azerbaijan and Kazakhstan keep prices below the already low regional average. But the Kyrgyz Republic, not an oil producer, has significantly lower prices than comparable Tajikistan. Belarus and Uzbekistan also maintain diesel prices below the regional average. In absolute terms, the gasoline/diesel differential has increased – this is a negative development as it will encourage the consumption of diesel, a more polluting fuel than gasoline.





Source: GTZ, International Fuel Prices, 2007.

Bans on older vehicles, or vehicles without a certain technology, have also been put in place. In an effort to reduce emissions from cars, from 1 January 2007, Armenia banned the import of cars without catalytic converters.

Progress in **vehicle inspections** is uncertain. Most EECCA countries have a vehicle inspection programme in place, which consist of annual tests, and often random, roadside checks. But inspections are not always systematic and authorities are often poorly equipped for measuring technical vehicle requirements.

The annual vehicle inspection is not longer compulsory in Tbilisi, where only 3% of vehicles were subjected to technical inspection in 2004 (Tkhilava and Karanadze, 2006).

Many countries are recognising the importance of improved **traffic management**. Examples include the diversion of traffic onto city ring roads in Minsk; restrictions on the use of main roads by freight traffic in Almaty and Tbilisi; the introduction of one-way systems, also in Tbilisi; and improved coordination of traffic lights in Moscow.

Negative trends in **public urban transport** systems have not been reversed. Public transport operations used to be state-owned and heavily subsidised, but ownership was transferred to municipalities without commensurate financial resources. Support for public transport is still significant – Tbilisi and Yerevan are investing in new buses. But it does not suffice to cover operational, let alone investment costs – for example, only 25% of investment needs in new vehicles are funded in the Russian Federation. Service levels are declining and some services, such as tram systems in the Caucasus, are being closed. As cities channel limited resources into developing infrastructure for private transport (roads and car parks), car use is further boosted to the detriment of alternative transport modes.

Inter-city transport infrastructure also suffers from under-investments. It is easier to attract investment for roads than for public transport. Efforts to reform the national rail networks are also taking place – for example in the Russian Federation, where separation of the management of infrastructure and operations is a key element.

Box 4.3.3 Institutional co-ordination: critical and elusive

As in most EECCA countries, a multitude of agencies have responsibilities in the development of urban transport in Tbilisi. They include the Ministry of Environment, Ministry of Health, three different departments (transport, urban development, roads) in the Ministry of Economic Development, the Municipality of Tbilisi, the Patrol Police (under the Ministry of Internal Affairs) and the Road Transport Administration.

Low levels of communication and lack of coordination are endemic. For example, the standards for ambient quality (set by the Ministry of Environment) and emissions (set by the Ministry of Health) are not consistent, while none of the ministries has a complete picture of the situation. When the Municipality of Tbilisi decided to improve traffic management, the options were not discussed with the environment or health sectors. As the first step to improve coordination, experts suggest to establish a permanent inter-agency coordination unit at national level.

Source: Tkhilava and Karanadze (2006)

MAIN BARRIERS

The integration of environmental considerations in the transport sector is critically hampered by the dysfunctionality of the sector itself. This includes a lack of a strategic vision (of a future transport system in which both demand and supply considerations are taken into account), a weak understanding of the potential role of policy instruments, the non-existence of supportive national policy frameworks, and under-developed institutional structures that would deliver a more integrated and coordinated approach.

More concretely, unsound legal and regulatory frameworks at federal/national level (regarding for instance the authority of municipalities to introduce traffic restrictions and fare structures) are hindering improved public transport management at the municipal level.

The small number of non-governmental organisations working on transport policy helps to explain the low level of awareness of the problems.

WAYS FORWARD

Provide a supportive national policy framework that integrates environmental targets, making sure that new issues (such as climate change) are not overlooked. Coordinate national policy approaches on urban land-use, travel, health and the environment. Pay more attention to demand management. Provide a consistent integrated financing framework that considers all modes of travel. Abolish fuel subsidies and introduce self-financing of the transport sector via a coherent fiscal structure.

Work towards improving the environmental performance of the vehicle fleet. Update emission standards. Step up technical inspections and fuel testing. Phase out lead. Improve traffic management (bus lanes, traffic light setting).

Develop a strategic vision for urban transport at national level. Provide the legal basis for municipalities to manage urban transport (including traffic restrictions, parking fees, public transport fares, and oversight of private operators of public transport services). Focus work on public transport at municipal level on improving coordination among agencies (maybe through the creation of a permanent coordinating body) as well as the operational efficiency of public urban transport systems (including fare collection).

Work on gaining public support for new policies, particularly those aimed at managing transport demand. Develop driver education programmes.

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OBJECTIVE 4.4 AGRICULTURE, FORESTRY AND ENVIRONMENT

INTRODUCTION

The agriculture and forestry sectors are of major importance to the resource-dependent economies of EECCA countries, where they often account for 20% or more of the economy (World Bank, 2007) and provide significant sources of export earnings and rural employment.

Yet, poor management can also lead to major environmental impacts – particularly in terms of biodiversity conservation, water pollution or climate change – which translate in important economic losses for the sectors themselves and for society as a whole.

Inadequate water and salinity management is a major economic concern. Ten of the twelve EECCA countries have major irrigation development, and poor management is resulting in crop yields well below potential levels and large-scale land degradation – the proportion of irrigated land that is salinised varies from 21% in Ukraine to 89% in Turkmenistan (World Bank, 2007).

There is a wider range of agro-environmental and sustainable forestry practices whose introduction will also bring economic benefits. Sustainable land management will help ensure that farm incomes are secure over the long term. Integrated pest management (IPM) can control pests cost-effectively while reducing the need for chemical pesticides. Improved nutrient management will help protect drinking water sources. Carbon sequestration can attract carbon finance. Organic farming and forest certification could produce export revenue from growing international markets. And combating illegal logging would help to promote the rule of law.

This chapter is based on the forthcoming World Bank report "Mainstreaming Environment into Agriculture and Forestry Policies and Operations".

CURRENT SITUATION

Decades of input-intensive agriculture led to widespread problems of soil erosion, fertility and humus depletion, compaction, mismanagement of drylands, waterlogging and salinization of irrigated lands – trends are negative in most EECCA countries. The irrigation and drainage sub-sector is characterized by weak management, insufficient expenditure on operation and maintenance, and inefficient use of water. Nutrient runoff shows an improving trend mainly because use of fertilizers and livestock numbers have dropped dramatically, though they are beginning to increase again.

Cutting of forests, even including illegal felling, remains below incremental growth throughout the region, and forested areas are increasing in most countries. Forest health varies from year to year but fire remains a major threat, especially in the Russian Federation. Despite a strong heritage of sound forest planning and sustainable management, illegal felling has become a major problem in most EECCA countries – ranging all the way from villagers collecting fuelwood to large corporations bribing officials to take timber without paying taxes or observing sustainable management standards.

RECENT PROGRESS

Full **property rights** (the right to use, inherit and sell land) provide incentives for farmers to conserve their land and adopt good agricultural practices. But privatization of the means of agricultural production is not yet complete and, even where privatization has taken place, former collective farms have often not been restructured into individual family farms. In contrast, forest land, with minor exceptions, is still owned and managed by the state in all EECCA countries, which is a potentially positive factor for sustainable use given the public good nature of many services provided by forests (including biodiversity conservation, watershed protection and tourism).

Development of **agricultural advisory services** still has far to go in the EECCA region, especially in natural resources management and sustainability, which are often considered of

lower priority than raising production. Successful pilot programs to provide information to farmers (including through private providers) are taking place – for example, World Bank or ADB supported efforts in Armenia, Georgia, Moldova, Russia and Uzbekistan.

Public participation in policy and program formulation and in project development remains limited. While EECCA countries now have robust systems for environmental impact assessment (EIA) – at least for larger projects – these typically do not provide for public participation or cover farm or forestry management plans.

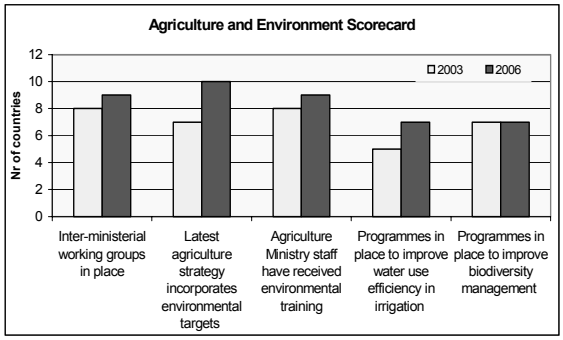
Programs to improve **soil management**, through good agricultural practices like conservation tillage, contour cultivation and buffer strips, rangeland and watershed management exist, but funding remains limited.

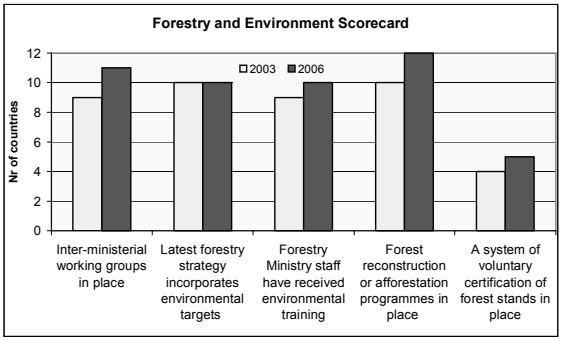
Considerable success in **nutrient management** is being achieved at a pilot project level (with GEF, World Bank and other donor support, such as the Danube - Black Sea Strategic Partnership Program and the Baltic Sea Regional Program, and projects like the Swedish SIDA projects for northwest Russia), but this still has not been scaled up into broader, national programmes. . Fertilizers are still subsidized in six EECCA countries and some Russian regions.

Several countries have adopted strategies and programs to address **water and salinity management**. In addition to infrastructure improvements, these programmes often include development of water user associations to manage water delivery at the local level as well as the introduction of water charges. Such innovations represent positive steps in moving irrigation towards sustainability. However, implementation needs to expand by building on the successes of the initial set of projects, and intensified effort is required to address the specific challenges posed by salinity.

Box 4.4.1 Agriculture, Forestry and Environment Scorecards

These two scorecards help to track progress on institutional support for sustainability in the agriculture and forest sectors. In agriculture, Armenia reported the most changes since the Kiev meeting, followed by Azerbaijan and Belarus. For forestry, Armenia and Tajikistan reported the most improvements, followed by Georgia. However, the scorecard methodology used in this report has obvious limitations derived from self-reporting and a yes/no format. The World Bank has supplemented the results by a scoring derived from staff knowledge and consultant reports. Seven countries (Armenia, Kazakhstan, Moldova, Russian Federation, Turkmenistan, Ukraine and Uzbekistan) scored more than 15 out of a possible 30 points, showing that mainstreaming has made notable progress but still has a way to go in EECCA. Integration is generally better in forestry than agriculture – which is understandable, given that resource conservation has always been a key element of forestry practice





Source: EECCA countries' responses to EAP Task Force questionnaire

Integrated pest management (IPM) programs have been successfully expanded in a few countries – especially Uzbekistan, Turkmenistan and Moldova. The current low use of chemical pesticides in the remaining countries (due to lack of knowledge and limited affordability) provides a window of opportunity to transfer successful IPM experience on a broader scale. IPM is now recognised by many in the region as a superior method of pest control, but its adoption needs to be greatly broadened. A related problem concerns the lack of a mechanism for the disposal of obsolete pesticides in most EECCA countries.

The growth of **organic farming** is a promising development. Ukraine and Moldova have done the most to date.

Progress is taking place in combating **illegal logging**. The Russian Federation, which accounts for 96 % of the region's forests, is moving strongly, taking a lead in the Forest Law Enforcement and Governance (FLEG) process. At a smaller scale, a World Bank project in Armenia is providing alternative fuel sources to discourage illicit wood cutting.

The **timber certification** process – through which accredited non-government bodies certify that timber from a certain forest area is being produced in an environmentally sustainable manner – is now taking hold in the Russia Federation, Ukraine and Belarus. It promises to be a powerful driver for sustainability, at least for those countries which export timber. Interest is also growing in other countries.

In forestry, there is a clear trend to increase **protected areas**.

Radiological contamination is also an issue in selected countries. Belarus and Ukraine have made impressive efforts to restore farm and forest lands in the Chernobyl region and to ensure food safety.

Box 4.4.2 Towards indicators for sustainable agriculture and forestry

The World Bank is attempting to build a comprehensive set of indicators to measure progress in mainstreaming in the agriculture and forest sectors. Further work is needed to derive credible and consistent quantitative data, but trends can already be reported.

Indicator	ARM	AZE	BEL	GEO	KAZ	KYR	MOL	RUS	TAJ	TRK	UKR	UZB
Agriculture												
Soil Protection	↓	↓	↑	↓	↓	↓	↓	↓	↓	↓	↓	↓
Nutrient Conservation	↑	↑	↑	↓	…	…	↓	↔	↓	↔	↑	…
Water Use Efficiency	↑	↔	…	↓	↑	↑	↑	↔	↓	↔	↔	↑
IPM Coverage	↔	↔	↔	↔	…	…	↔	↔	↑	↑	↓	↑↑
Forestry												
Protected Areas	…	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑↑	↑
Forest Health	↑	↔	↓	↓	↑	↓	↓	↔	↑	↔	↔	↑
Certification	↑	…	↑	↔	…	…	↔	↑	↔	↑	↑	…
Sustained Yield	↓	↑	↑	↑	…	…	…	↑	↑	↑	↑	↑
Agriculture												

Note:

↑ = positive trend ↑↑ = very positive trend

↓ = negative trend ↔ = no change … = no data

Source: World Bank (2007)

Box 4.4.3 Integrated Pest Management pays off in Uzbekistan

Concerns on the indiscriminate use of chemical pesticides in cotton cultivation in Uzbekistan grew in the 1980s, so research and demonstration on biological methods began. After independence, interest in Integrated Pest Management (IPM) was revived and the Ministry of Agriculture and Water Resources, initially with World Bank support, started to promote a number of IPM techniques. Biological controls are now used on 90% of cotton fields, with effective management of pests. Not only has chemical use been reduced 75% in the last five years but the cost of biological methods has been less than 50% of the cost of chemicals.

Source: World Bank (2007)

Box 4.4.4 Money does grow on trees

Reforestation in the Russian Federation has enormous potential to attract carbon finance, but smaller-scale opportunities to obtain external support exist throughout EECCA. In Moldova, the government has teamed up with the World Bank Prototype Carbon Fund, BioCarbon Fund and Japan to address the links between afforestation efforts, protection of forest ecosystem diversity, agricultural land degradation and carbon sequestration. In total, the projects will plant new forests and restore degraded land on 53,000 hectares.

Source: World Bank (2007)

MAIN BARRIERS

Undeveloped institutional frameworks, lack of knowledge, and the means of disseminating it to farmers (advisory services) are clearly barriers for IPM, nutrient management, water management, salinity control, conservation tillage and carbon sequestration.

Agriculture and forest agencies may have the right strategies and action plans but their capacity to influence Ministries of Agriculture is limited – partly due to the lack of analyses to show the "cost of inaction" and to set priorities for action.

At farmer level, beyond lack of knowledge, low progress in privatizing land and lack of access to capital also play a fundamental role.

WAYS FORWARD

Move decisively to implement programmes, building on past policy development and programme design work. Scale up successful pilot projects.

Enhance public awareness. Start with improving monitoring systems, so that the public can exert more pressure on decision-makers. Ministries of Environment have generally had the initial responsibility but the involvement of agriculture ministries and forestry agencies will also be required.

Strengthen institutions. Develop environmental skills within the line ministries. Establish or make more effective inter-ministerial coordination mechanisms. Ministries of Environment could play a pivotal role, in tandem with the other concerned agencies.

Improve governance and accountability. Develop transparent monitoring and evaluation systems for government-sponsored activities in agriculture and forestry. Introduce results-based budgeting.

Make use of policy instruments and public expenditures to discourage unsustainable behavior and to provide incentives for the spread of good agricultural and forestry practices. Examples might include: enforcement of existing forest laws; greater cost recovery for water; targeted, time-limited subsidies for adoption of greener technologies like soil conservation, IPM or manure storage; and development of multi-use, landscape approaches to forest management.

Reorient public expenditures from unsustainable subsidization of production inputs like fertilizer and pesticides to improved management of public goods like land, water and biodiversity.

Strengthen agricultural advisory services.

Engage in international cooperation – at the regional level, to ensure the exchange of experience between EECCA countries, with CEE countries and at the global level, where donors can play a catalytic role.

FURTHER INFORMATION

World Bank. 2007. Mainstreaming Environment in Agriculture and Forestry Policies and Operations.

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OBJECTIVE 5. FINANCE FOR ENVIRONMENT

INTRODUCTION

Limited availability of financial resources is clearly a cross-cutting barrier to achieve progress across environmental policy areas (whether air, water, waste or biodiversity). Improved financial management of financial resources for environment would also support achievement of policy objectives by ensuring both that financial resources are not wasted and that they are allocated to the highest-value activities. Good financial management would also increase the confidence of partner countries and encourage them to provide additional financial resources.

Mobilisation and management of environmental finance has also relevance in terms of public finance, good governance, and social policy. While budgetary allocations to the ministries of environment are generally low from a national budget perspective, financing needs (and eventually expenditure) for environmental infrastructure can be very significant.

The environment can also represent important sources of finance – primarily from user chargers related to environmental services (such as water supply and sanitation or waste management), but also from innovative sources, such as carbon finance. Other sources of environmental finance, although modest, may play a critical role for the financial sustainability of certain sub-sectors – such as nature-based ecotourism.

Ensuring that management of environmental finance (both in the revenue and expenditure sides) is aligned with good financial management practices will also contribute to the good governance agenda. In addition, measures needed to ensure the financial sustainability of environmental services (such as water supply, sanitation and waste management) may conflict with social policy goals – and reforms may require policy dialogue across ministries to develop coherent "policy packages".

Progress in environmental finance will require progress in environmental policy. Environmental policy priorities are needed to guide spending. Market-based environmental policy instruments can act as a source of finance (although their primary objective should be to provide incentives). And, critically, environmental policy instruments should provide incentives for private environmental spending.

Overall, mobilisation of finance for environment should be guided by the polluter pays and user pays principles. And its management should be guided by environmental effectiveness, fiscal prudence and management efficiency – as described in the OECD Council Recommendation on Public Environmental Expenditure Management.

This chapter draws heavily on long-standing EAP Task Force work on environmental finance and in particular the 2007 "Environmental Finance Trends" report (from where most of the figures are taken), on dedicated PPC input, and on the joint PPC/EAP Task Force/REC/World Bank report "Mobilising Finance for Environmental Priorities: Recommendations for the Future".

RECENT PROGRESS

Total environmental expenditure in the region has increased (in constant USD terms) in all countries reporting data. Environmental expenditure is steadily increasing in the three major economies (the Russian Federation, Ukraine and Kazakhstan). Environmental protection expenditure remains generally low – particularly in smaller, poorer countries, where it has stabilised at around USD 5 per person and year (see figure 5.1). As a share of GDP, environmental expenditures have increased in Kazakhstan, decreased in Belarus, Ukraine and the Russian Federation, and remained roughly stable in Armenia, Azerbaijan, the Kyrgyz Republic and Moldova. As a share of total government expenditure, environmental expenditures have increased in Armenia and Kazakhstan and decreased in other countries (see figure 5.2)

Armenia has made particular progress in raising the ratio of **environmental investments** to total environmental expenditures – from 6% in

2000 to 35% in 2005. The ratio has also increased in the Russian Federation, reaching 32% in 2005. Belarus and Kazakhstan keep it above 40%. In other countries, it remains below 15%. Environmental investments focus almost exclusively on end-of-pipe technologies, although investments in cleaner technologies have been identified in Ukraine (wastewater) and Azerbaijan (air pollution control). As a share of total investment, since 2000 environmental investments have increased in Armenia, Kazakhstan, Moldova and Ukraine – Kazakhstan and Ukraine have caught up with the Russian Federation, reaching 2%, while in other countries it remains at below 0.6% on average over 2000-2005.

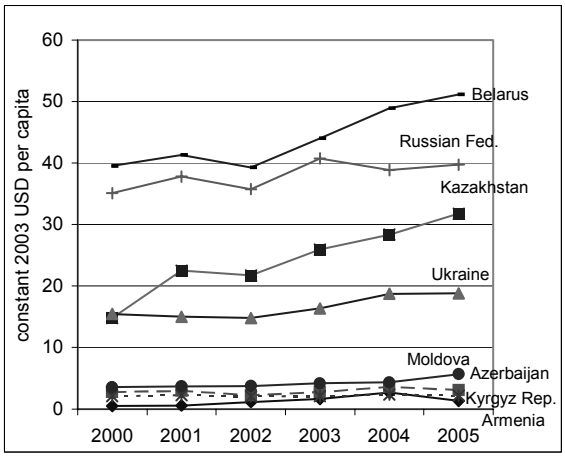
Sectoral allocation of resources is dominated by wastewater, where practically all EECCA countries spend above 40% of their resources (although figures reported may include water supply investments). In addition, Armenia, Belarus, Kazakhstan, the Russian Federation and Ukraine spend an important share on air pollution control (32%, 20%, 37%, 22% and 22% respectively); Moldova and Azerbaijan on biodiversity and landscape protection (37% and 15% respectively); and Kazakhstan and Ukraine on waste (18% and 15%). The public sector tends to spend on wastewater management, while the private sector tends to spend on air pollution control.

Progress has been made to harmonise environmental expenditure **information** systems with OECD/Eurostat standards.

User charges represent the largest source of finance for environment-related expenditures. Although hard figures are not available, user charges (channelled through service providers) are likely to be contributing over half of financial resources for the provision of water and waste services. Tariffs and collection rates have been increasing, and, in most countries, are coming close to cover operation and maintenance costs – aided by increases in operational efficiency.

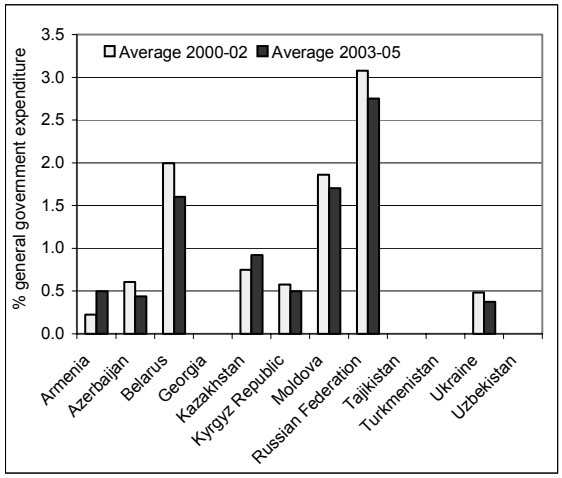
Private industry is also a major contributor to environmental expenditures. Almost all air pollution control expenditures and a significant share of waste management expenditures can be attributed to industry. As a consequence, and with the possible exception of the Russian Federation, the private sector (combining users of environmental services and private industry) spends more on environmental protection than the public sector.

Figure 5.1 Environmental protection expenditure per capita



Source: EECCA countries' responses to EAP Task Force questionnaire.

Figure 5.2 Environmental protection expenditure in the public sector as share of general government expenditure



Source: EECCA countries' responses to EAP Task Force questionnaire.

Inter-governmental transfers are the main recourse to fill the gap between the costs of providing local environmental services (now a responsibility of sub-national levels of

government) and the revenues generated from the service through user charges. Examples of progress in managing those transfers have started to show up. For example, the Russian Federation has made use of broad-based statistical information to estimate revenue capacities, expenditure liabilities and the need for equalising transfers; it has allocated resources between regional governments on a competitive basis; and it has introduced transfer mechanism to allocate finance directly to investment projects. Also, Ukraine has set priorities and stipulated procedures for considering proposals made by regions.

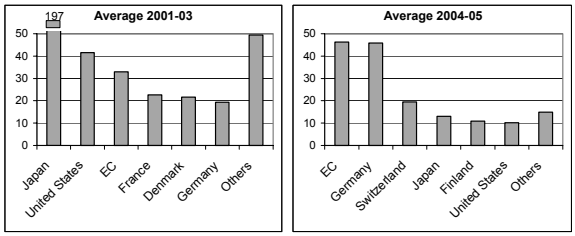
Resources raised through **environmental levies**, when earmarked, can represent significant financial resources for environment. According to information reported by countries, Ukraine raised USD 676 million USD in 2005 (up 37% in nominal terms from 2002; reaching 0.82% of GDP), the Russian Federation USD 465 million (up 176%; 0.06% of GDP), Belarus USD 365 million (up 264%, 1.23% of GDP), Kazakhstan USD 188 million (up 267%, 0.34% of GDP), Uzbekistan USD 52 million (up 22%; 0.45% of GDP), Armenia USD 10.4 million (up 56%; 0.27% of GDP) and Moldova USD 2.6 million (doubled from 2002, 0.09% of GDP). In other countries, environmental levies seem mostly testimonial, as they generate less than USD 1 million per year. Earmarking ratios seem to have increased slightly since 2002 – they are generally between 40% and 60%.

Not much progress has been made on tapping **local capital / financial markets**. The recent revitalisation of financial institutions provides opportunities to mobilise local savings to finance environmental investments.

While available data on national expenditures and **international assistance** flows are not directly compatible, they show that EECCA countries cannot rely on international environmental assistance to solve their environmental problems. Total environmental expenditure in four countries (Belarus, Kazakhstan, the Russian Federation and Ukraine) reached some USD 7.5 billion in 2005. By comparison, total environmental assistance reached USD 526 million in 2005 for the whole region[19].

The structure of environmental assistance is changing. While bilateral and multilateral assistance had the same order of magnitude in 2001, in 2005 the level of multilateral assistance was almost six times that of bilateral assistance. IFI-channelled assistance doubled, while bilateral assistance decreased. This last fact can be attributed to a change of donor priorities, since environmental assistance as a share of total bilateral assistance halved over the period. With bilateral donors progressively exiting the region, the EC is assuming a more prominent role as the lead provider of environmental grant assistance (see Figure 5.3)

Figure 5.3 Environment-related ODA/OA by donor



Source: OECD Aid Activity database, donors reporting.

In absolute terms, environmental assistance (loans and grants combined) has concentrated in commodity-rich countries, such as the Russian Federation, Kazakhstan, Uzbekistan and Azerbaijan. Poorer countries receive much less – the most notably exception is Armenia, which seems to have earned a reputation as a good performer. In per capita terms, Armenia and Kazakhstan are at the top of the league (see Figure 5.4). As a share of GDP, Armenia has been able to attract resources equivalent to 0.8% of GDP and the Kyrgyz Republic 0.6%, while in the rest of the region environmental assistance represents less than 0.4% of GDP.

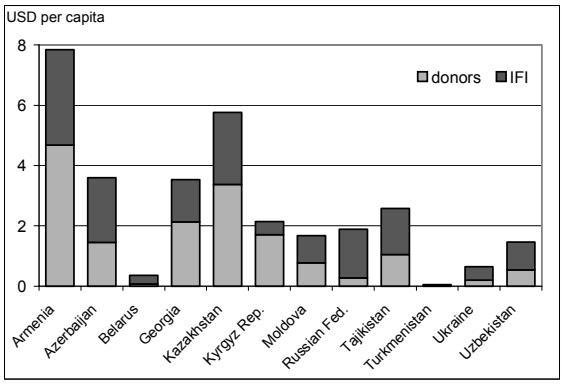
The share of donor assistance to EECCA that is environment-related has decreased. It is

19. Note that bilateral assistance is mainly grants or soft loans while multilateral assistance is mainly loans

now below 10%, the lowest among all world regions (see figure 5.5).

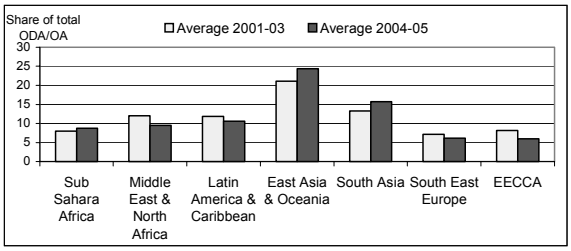
International assistance (whether grants or loans) focuses largely on water-related projects. Biodiversity and solid waste management receive the lowest allocations (see figure 5.6)

Figure 5.4 Environment-related international assistance by donors and IFIs



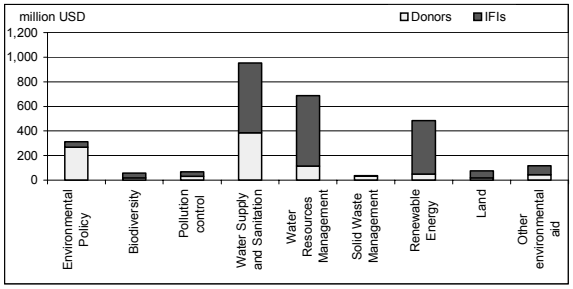
Source: OECD Aid Activity database, donors and IFIs reporting.

Figure 5.5 Regional comparison of environment-related ODA/OA



Source: OECD Aid Activity database.

Figure 5.6 Environment-related international assistance by policy area



Source: OECD Aid Activity database, donors and IFIs reporting

Innovative approaches in environmental financing have been explored in some countries – such as debt-for-environment swaps in Georgia and the Kyrgyz Republic and CDM in Armenia. For EECCA Ministries of Environment, preparations for debt-for-environment swaps are a good exercise, because they require continued analytical and communication efforts with exigent partners, including the Ministry of Finance. However, the most promising innovative financing mechanism is carbon finance. Despite the EECCA region having the potential to capture up to 40% of the global carbon market (PPC, 2006), EECCA submissions to the CDM represent less than 1% of total submissions – by contrast Asia Pacific represents 61% and Latin America represents 36% (UNFCCC, 2006).

Overall, progress in improving the **management of financial resources** seems limited. EECCA countries have reasonably well developed strategic frameworks (in terms of thematic environmental strategies having been developed), but for roughly half of those strategies/action plans the cost of implementation has not been assessed, and this ratio has not improved recently. Costing seems to be well established for water strategies and rare for waste strategies. At the same time, there is an increasing awareness of the need to develop "financial plans" to support implementation of environmental strategies and action plans – for example Uzbekistan's latest national environment programme now includes identification of possible funding sources.

Box 5.1 Mobilising finance through bundling

Bundling' a number of smaller environmental projects has been an effective way of enabling IFI involvement in projects that would otherwise be too small to attract investment. This procedure enables IFIs to finance projects that fall below their normal threshold for lending but also increases the effectiveness of the IFIs and improves that beneficiaries' capacity to develop, assess and implement environmental projects. For example, the Lake Sevan Environmental Project in Armenia will reduce pollution in Lake Sevan and the Hrazdan River, through the rehabilitation of two operating wastewater treatment plants and building three new ones. Bundling together the investment needs of five small municipalities has made it possible to attract an EBRD loan of €7.2 million loan together with grant co-financing of €5 million and technical assistance from the EC. In addition to obvious local environmental and health benefits, these investments will enhance the potential for eco-tourism and improve the quality of the environment in national parks.

Source: PPC staff

Some countries, such as Kazakhstan, Moldova and Ukraine, have showed progress in the management of public resources by implementing **results-oriented budgeting**, developing MTEFs and better controlling budgetary resources. Since investment and operational costs are generally not calculated ex-ante in a robust way, they are not used to inform policy development. Most public resources in the environmental sector are still spent without clear programmatic frameworks stating objectives to be achieved. On a positive note, EECCA countries are increasingly aware of the benefits to be gained from the improved management of public environmental expenditure programmes.

There has been some progress in the management of environmental **investment programmes**. In 2005, the number of investment programmes overseen by national environmental authorities varied from none (Moldova) to 16 (Kyrgyz Republic) – with the average being 5.4 programmes. Most countries claim that their investment programmes are fully funded – notable exceptions being Georgia (only 2 out 9) and the Kyrgyz Republic (11 out of 16). It is generally recommended that project selection is done by a specialized unit in the Ministry of Environment, while project procurement should be done outside the Ministry. In EECCA, the number of countries using those specialised units has increased from 5 to 7 between 2003 and 2006, and only 2 among those 7 units also undertake procurement functions.

Environmental funds in EECCA are not playing the same role as in some CEE countries and if poorly managed, risk leading to marginalisation of environment in public expenditures. Some EECCA countries do not have environmental funds – such as Georgia and Kazakhstan. Armenia, which had none in 2003, has created 3 funds (each one managing on average 0.3 million USD). Most countries have a small number of environmental funds (1 to 4). Those countries with a greater number of funds have started to reduce them – the Kyrgyz Republic has reduced from 10 to 8 and Moldova from 7 to 4. As environmental funds generally manage modest resources (less than 0.4 million USD on average, with as little as 17,000 USD in Azerbaijan), this is a positive development that should help to reduce management costs.

Box 5.2 Adopting a Strategic Approach – the Financing Strategy for the Water Supply and Sanitation Sector in Armenia

With technical support from the EAP Task Force Secretariat and funding from the UK and Germany, Armenia has identified the level of water supply and sanitation services that is affordable for the country, the additional financial resources that need to be mobilised to achieve the objectives and the possible sources of finance. The technical work and an extended policy dialogue process involving different ministries and stakeholders have made possible to convince donors and IFIs to lower their expectations in terms of achievable wastewater treatment objectives, to convince the Ministry of Finance that central budget support to the water supply and sanitation needed to be extended, to demonstrate that there was room to increase water tariffs if combined with a social protection package, to identify priority investments (some of them now included in the EBRD pipeline) and to identify technical assistance needs (some of them being considered for funding by UK DFID).

Source: EAP Task Force Secretariat staff

Box 5.3 Learning from the students

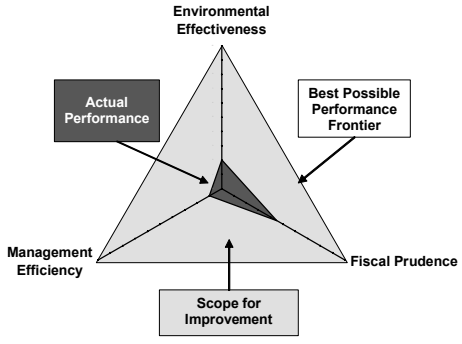
International training events offer a rare chance to "learn from the students". A training event for Moldovan officials on managing public environmental expenditure programmes provided the following insights:

- Policy-makers and practitioners increasingly recognise that the system of public environmental funds requires significant reforms
- There is strong demand for modern management tools both for designing expenditure programmes and for appraising, selecting and implementing cost-effective investment projects.
- Targeted and on-the-job training for practitioners is badly needed.
- Exposure to successful change in other countries is a good motivator.

Source: OECD (2007 a)

Box 5.4 How are environmental funds performing?

The OECD *Good Practices for Public Environmental Expenditure Management* represent a benchmark to assess the performance of environmental funds, or similar structures, in terms of environmental effectiveness, fiscal prudence and management efficiency. A recent analysis of Ukraine's State Environmental Protection Fund has revealed weaknesses and suggested a reform plan. More transparent and robust criteria and procedures for project appraisal and implementation monitoring are needed if the Fund is to play a role in managing/leveraging foreign sources of finance, for instance through matching grants for IFI-supported investment projects.



Source: EAP Task Force staff

Some EECCA countries have taken proactive steps to develop their **capacity to attract and manage finance** for the environment.For example, Georgia (with the support of the World Bank) has established the Municipal Development Fund with responsibility for coordinating investment (including IFI loans and donor support) in environmental infrastructure such as water supply and sanitation and solid waste management.

MAIN BARRIERS

"Structural" and "legacy" barriers include corruption, lack of management skills and the drying-up of donor finance. Most Caucasus and Central Asian countries face the combined challenges of low income and no EU accession incentive.

Current policy frameworks generate significant problems. Poor priority and target-setting contribute to public financial resources being too thinly spread. Ineffective enforcement and low rates of pollution charges lower the incentive for the private sector to invest in pollution abatement. Limited rights of municipalities to incur debt prevent the financial sector from playing a greater role in financing environmental infrastructure.

Key skill gaps include the ability to "make the case" for environmental expenditures, operate in a MTEF framework and coordinate environmental assistance. Local actors in charge of delivering environmental services and managing infrastructure (such as municipalities and utilities) often lack experience in identifying and preparing environmental investment opportunities and find it difficult to follow the procedures and requirements of IFIs.

"Unreformed" donor behaviour is also a problem. Donors have their own agendas, are reluctant to change their procedures, and have not developed a basic "infrastructure" for donor coordination at the country level. They still provide limited co-financing grants – this is important as a narrow fiscal space (often IMF-imposed) combined with the limited ability of the population to pay for environmental services (i.e. through tariffs) means that IFI loans must often be blended with donor grants in order to be in concessional terms and therefore affordable.

WAYS FORWARD

Richer countries, like the Russian Federation, should focus on making optimal use of domestic resources, including tapping local capital markets. Lower-income countries should include environmental investments in national programmes/actions plans to attract donor resources. All countries should work on increasing the participation of users in financing environmental infrastructure (through higher tariffs) and attracting carbon finance.

Make inter-governmental flows stable – consider providing targeted support rather than block grants, to ensure that resources are not diverted from original goals.

Higher-income countries should develop a legal framework (compatible with financial regulations) to enable local capital and financial markets to finance environmental investments and introduce mechanisms to reduce risk to lenders.

Work towards building trust with the Ministry of Finance and operating according to acknowledged standards of good governance and public finance. Base environmental investment decisions on medium-term expenditure frameworks and coordinate them between municipalities and upper-level jurisdictions. Take advantage of existing modelling approaches to define management and investment programmes for environmental infrastructure.

Build own capacity to identify priority environmental investments and prepare viable environmental investment projects. Governments, IFIs and donors can contribute towards this by supporting appropriate institutional reforms and helping to support the development of capacity for project preparation.

Aim at leveraging other sources of finance when allocating environmental expenditure budgets – do not crowd out private financing that is commercially viable and encourage public environmental funds to co-finance projects with commercial banks.

Donors should consider making more grant co-finance available (ensuring that grants are targeted at the poorer EECCA countries), making support more stable, and improving donor coordination at the country level around country priorities.

FURTHER INFORMATION

OECD. 2006. Recommendation of the Council on Good Practices for Public Environmental Expenditure Management.

OECD. 2007a. Environmental Finance Trends in EECCA.

OECD. 2007b. Financing Water and Environmental Infrastructure.

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OBJECTIVE 6.1 ENVIRONMENTAL MONITORING AND INFORMATION MANAGEMENT

INTRODUCTION

Improving the availability of reliable environmental information by strengthening environmental monitoring and information management is critical for environmental policy-making at all levels (from local to global). It is also relevant to support policy-making in related policy areas (such as health and poverty), although linking environmental information to development information is a particular challenge.

Indeed, improving the quality, timeliness and availability of environmental information is a critical factor to make progress in most objectives of the EECCA Environment Strategy. It is needed to support policy development and implementation across different policy areas, to guide allocation of financial resources, to support environmental democracy and raise environmental awareness, and to support international negotiations and implementation of international agreements dealing with transboundary issues.

Improving environmental information is in itself a hard commitment under multiple international processes. It is demanded by the Aarhus convention, but also by the need to fulfil reporting obligations to international processes, such as the several Rio and UNECE conventions. Indeed, a weak environmental analytical and information base often acts as a barrier to achieve multilateral progress in dealing with global and regional environmental problems.

Improving environmental information management also contributes to enhancing governance. Public access to quality environmental information helps to promote accountability of policy-makers and is a key tool for making related public services more responsive to user needs.

This chapter draws, upon other sources, on work produced under UNECE's Working Group on Environmental Monitoring and Assessment and input from UNEP GRID-Arendal staff.

Box 6.1.1 Environmental information: Beyond state-of-the-environment reporting

Environmental information deals with the quality and quantity of environmental resources (the state of the environment), but also with:

- human activities affecting the state of the environment (pressures)
- the impact of environmental degradation on human health, economic productivity and other variables affecting well-being (impacts)
- societal responses, including government measures, that try to improve environmental quality, reduce pressures on the environment or the impact of environmental degradation (responses), and
- cost-benefit and other economic analyses and assumptions used in environmental decision-making

Source: EAP Task Force Secretariat staff

RECENT PROGRESS

There are scattered examples of efforts for improving information exchange, upgrading monitoring networks and publicising environmental information. But the state of information management remains critical, as EECCA countries continue to struggle with every step of the environmental information chain.

EECCA countries have a long history of collecting environmental data. These efforts involve a broad array of **institutions** – such as hydro-meteorological and geological services, environmental inspectorates, water and forestry committees, and health ministries. But institutional coordination is loose, at best, and often results in incompatible data. To start solving this problem, inter-agency monitoring commissions have been established in Belarus and Ukraine. Belarus' model emphasises streamlining of information flows (11 agencies are obliged by law to provide data), while Ukraine's model emphasises harmonisation with

the EU. Little coordination seems to be taking place in most other countries.

No much **methodological work** seems to have been carried out across the environmental information field, whether on valuing natural resources, assessing the environmental risk of economic activities or setting ambient standards (current ambient quality standards cannot be measured given the absence of automated stations). Chief methodological shortcomings specifically in the area of monitoring relate to sampling strategies and quality assurance and control procedures, often non-existent.

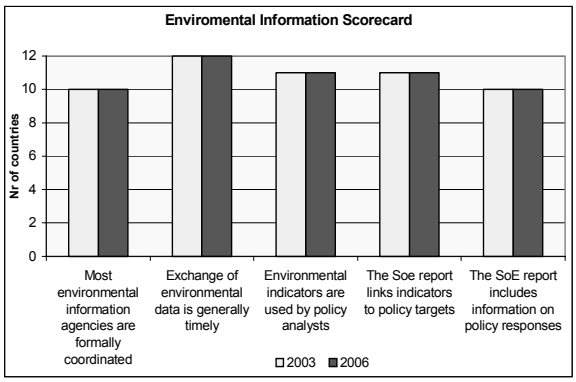
Overall, progress in environmental **monitoring** is mixed. Little progress on monitoring priority setting has taken place, with the exception of Belarus. Progress on harmonisation is also slow – for example, air quality data generated by hydro-meteorological services and ministries of health are still generally incompatible, as they use differing equipment and methods. In most cases, existing observation networks have not been reviewed since their inception decades ago and do not meet the requirements of current national regulations.

But some significant efforts are being made. Armenia, Azerbaijan and Uzbekistan have developed, or are in the process of developing, monitoring plans. Armenia, Belarus, Russian Federation and Tajikistan have installed a number of new air quality monitoring stations. Funding for monitoring has multiplied by seven in the Russian Federation, and Armenia has earmarked USD 420K for air and water monitoring in 2007-2008. Thanks to those efforts, monitoring of fine particulate matter (PM10) has finally started in the region – in Moscow since 2004 and in Minsk since 2006. In addition to ambient data, collecting emissions data is crucial for the environmental information system to produce usable results.

Some, but limited, progress has been made in the area of **self-monitoring** and self-reporting by enterprises (see box 6.1.3).

Box 6.1.2 Environmental Information Scorecard

The EECCA countries' responses to the EAP Task Force questionnaire seem to contradict the consensus among international experts that information sharing and analysis are problematic in the region. Given that this scorecard is based on self-reporting, it suggests that the understanding of good practice in environmental information management is weak in EECCA.



Source: EECCA countries' responses to OECD questionnaire

Box 6.1.3 Self-monitoring and self-reporting in EECCA

Voluntary company reporting has been recently re-introduced in the Russian Federation and its concept is now better understood in Kazakhstan, particularly among private actors, which have taken note of the potential for benchmarking and for identifying cost-savings. Public policy benefits of self-reporting data include identification of environmental priorities, design of thematic strategies, contributing to information-based instruments (such as PRTRs or simpler "name and shame" schemes), and guiding inspection efforts. But fiscal authorities could also use the data to detect possible fraud. While all countries have self-monitoring requirements, a large proportion of industrial facilities in the poorer EECCA countries do not implement them. Higher rates of pollution charges would provide incentives for enterprises to produce accurate data (rather than relying on energy-mass balances for the calculation of pollution charges). In countries where data are produced, institutional and methodological shortcomings and unawareness among all actors result in data not being analysed and used.

Source: EAP Task Force Secretariat staff

Box 6.1.4 Making environmental information work

In **Armenia**, the World Bank has analysed how to promote stronger environmental information sharing with the public, particularly in the area of biodiversity and protected areas, and concluded that the limiting factor is not the lack of raw information. Rather it pointed to getting the information together (lack of systematisation, information scattered across institutions, restricted information flows) and knowing what to do with the information (absence of communication strategies, unclear target audiences) as the key barriers to making environmental information work, in this case to promote environmental awareness.

Source: UNEP (2005)

Uzbekistan, with UNDP support, has embarked in a project aimed at improving environmental monitoring and reporting for more effective decision-making. The first phase has focused on identifying a suite of indicators, creating a web-based indicators database, developing guidelines for the application of indicators and achieving data sharing agreements with different data providers. The second phase will focus on adding a geographic dimension to the data. The three main products will be an environmental situation map, a map of donor-supported projects, and a bulletin of the state of the environment. These products will allow easier access of policy analysts and other users to environmental information, not just on the state of the environment, but as well to other relevant data such as donor assistance. In developing this project, Uzbek environmental officials are encountering a number of problems, including lack of demand for environmental information among decision-makers and lack of analytical linkages between pressures, state and responses.

Source: UNDP Uzbekistan staff, UNECE (2005a)

Significant environmental information **gaps** persist – chiefly in the areas of biodiversity, water discharges, energy balances, and transport-related emissions. No progress (with the exception of Uzbekistan) can be seen in establishing inventories for natural resources, probably too ambitious a task for the short term.

Data storage and management is still a major issue. Environmental data are not always stored using electronic media, databases being sketchy and generally inaccessible. For example, in Tajikistan measurements are recorded on paper (despite of this, the country is doing a good job on maintaining and publishing environmental statistics and it is making an increasing number of information resources available on-line). Although in many EECCA countries, the publication of the national state-of-the-environment report serves as a driving force for environmental data coordination and exchange, this has not yet resulted in the creation of centralized electronic databases. Environmental statistics data are frequently published in statistical yearbooks and specialized environmental statistical compendiums. But with few exceptions these data are unavailable on the Internet.

Lack of common data interpretation and exchange of results make performing full **assessments** difficult. For example, state-of-the-environment reports do not relate emissions to ambient concentrations. As a result, monitoring data are rarely used in developing policies and programs. Although indicators exist, they are hardly used anywhere for policy analysis or linked to policy targets – this may soon change in Uzbekistan (see box 6.1.4). Several countries, such as Armenia and Tajikistan, do not yet produce state-of-the-environment reports regularly.

Communication efforts are taking place. Georgia has opened a communications department and many communications materials, such as brochures, are being produced – these efforts, however, are not always well directed. Aarhus centres, such as those in Baku, Minsk and Yerevan, seem to have performed rather well in the area of information dissemination.

Website-based communications are taking off -- several countries have worked on developing their websites and Azerbaijan has included an environmental electronic information centre where a state-of-the-environment bulletin is posted daily. But those websites are not fully used for communicating environmental information (whether statistical data, environmental analyses, strategies or program implementation reports.

MAIN BARRIERS

Lack of financial resources is clearly a major impediment to upgrading monitoring equipment and computer networks. But cultural barriers (information is power, secrecy, unimportance of the public versus the administration) are equally important.

Lack of demand from policy-makers is a major issue. Information is not always considered a management tool. There is a latent conflict between "monitors" (collect data for databases) and "communicators" (get information that is truly useful).

WAYS FORWARD

Make environmental information systems become demand-driven, so that they can meet policy and operational needs. Work on better understanding the demand and use of information in order to make information more demand-driven and user-relevant. Rebalance efforts from collecting data to disseminating environmental information (including through environmental indicators). Build capacity on the communication end of information management.

Focus the "supply side" on identifying data priorities, modernising monitoring equipment accordingly, and improving related data quality and reporting. Use a targeted approach to improving ambient quality information, including review location of monitoring stations (industrial sites, background sites) and closing some current stations. Carry out methodological work (definitions, classification, procedures). Ensure quality control of information sent to international reporting processes

Work towards building an integrated data management system – maybe around PRTRs. Consider empowering a central institution with coordination of data flows or creating an Environmental Agency in charge of information collection, treatment and processing of environmental information.

FURTHER INFORMATION

UNECE 2005a. Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia.

UNECE. 2003. Recommendations on Strengthening National Environmental Monitoring and Information Systems in Countries of Eastern Europe, the Caucasus and Central Asia.

UNECE. 2005b. Electronic Networking and Databases.

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UNEP. 2005. Impact II – Telling Good Stories. GRID-Arendal Occasional Paper 01 2005.

OBJECTIVE 6.2 PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING

INTRODUCTION

Public participation in environmental decision-making is not a luxury. Benefits range from greater support for environmental regulation, to improved design of regulations to enhanced compliance with regulations. It is difficult to imagine significant progress in the development and implementation of policies for environmental sustainability in EECCA (whether relative to air quality, water, waste or biodiversity) without enhanced public participation.

Most EECCA countries have accepted obligations on this field under the Aarhus Convention. The Convention (formally known as UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters) was adopted in June 1998 and entered into force in October 2001. It grants rights to the public and imposes on Parties and public authorities obligations regarding access to information and public participation and access to justice. Ten EECCA countries are party to the Aarhus Convention – the exceptions are the Russian Federation and Uzbekistan.

In addition, enhancing public participation in environmental decision-making should have positive impacts in terms of broader governance.

This chapter draws on an analytical review prepared by European ECO-Forum, input from Regional Environmental Centre for Central and Eastern Europe and the 2005 UNECE review of implementation of the Aarhus Convention.

RECENT PROGRESS

Although it remains weak at local level, **understanding** of public participation in environmental decision-making has consistently improved at the national level.

National **legal and regulatory frameworks** have continued to be developed through the adoption or amendment of laws and regulations.Less progress has been made in the adoption of international agreements. Out of the four most important UNECE agreements related to public participation (Aarhus Convention and its PRTR Protocol and the Espoo Convention and its SEA Protocol) the only advancement since 2003 is marked by the ratification of Belarus of the Espoo Convention.

There are still significant gaps in the implementation and enforcement of legislation. But across the region, NGOs and the public have more rights to participate in decision-making – thanks to a large extent to the provisions of the Aarhus Convention.

Box 6.2.1 Aarhus Convention: Implementation in EECCA

The UNECE Secretariat assessed in 2005 the implementation of the Aarhus Convention on the basis of reports prepared by countries. EECCA countries party to the convention displayed a high level of awareness of the convention and used transparent and participatory processes to prepare their reports to the Convention.

The Aarhus Convention is built around three pillars. The review showed that EECCA countries have been most active in implementing the access to information pillar. Implementation of the public participation pillar was still at a preliminary stage. Implementation of the justice pillar was the weakest. As regards country progress, implementation appeared most advanced in Belarus, Kazakhstan, Moldova and Ukraine, somewhat less so in the three Caucasus countries, whereas the Kyrgyz Republic, Tajikistan and Turkmenistan seemed to have made the least progress.

A significant problem in EECCA is the failure to introduce implementing legislation (even if under their constitutions the Convention applies directly and/or has precedence over national laws) that would allow the introduction of currently missing procedural mechanisms. In addition to funding shortages, key challenges include poor implementation by public authorities at sub-national level and by non-environmental authorities.

Source: UNECE (2005b)

There has been major progress in the creation and operation of **advisory boards** with NGO participation. Environment ministries in

the Russian Federation, Kazakhstan, Kyrgyz Republic, and Uzbekistan have launched such boards. As a result advisory boards are now mandated in six countries (Belarus, Kazakhstan, Kyrgyz Republic, Russian Federation, Ukraine, and Uzbekistan) and operating in eight countries (Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyz Republic, Russian Federation, Ukraine, and Uzbekistan). Similar advisory boards have been in several countries at other levels, such as river basins. However, legal frameworks governing the activities of the advisory boards remain in many cases inadequate. The same applies to the delegation of NGO representatives by the NGO community.

Access to official **environment information** is a prerequisite for public participation in the environmental decision-making. National state-of-the-environment (SoE) reports are prepared regularly in seven EECCA countries (every year in Ukraine, Moldova, Russian Federation, and Kyrgyz Republic; every two years in Kazakhstan and Tajikistan, every three years in Uzbekistan, and every four years in Belarus). But regardless of the regularity of preparing the national reports, practically in all the EECCA countries the print run of those documents remains inadequate (due to shortage of financial resources) to satisfy the demand of the environmental public. Examples of progress include the now regular preparation of SoE reports in Uzbekistan and Tajikistan and their dissemination by electronic means in Armenia and the Kyrgyz Republic. Also, there is an increasing popularisation of SoE report.

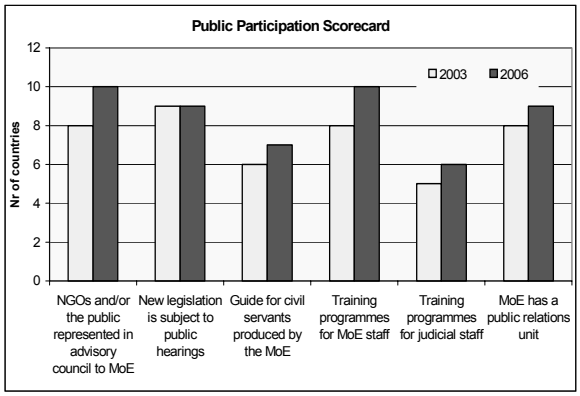
EECCA Ministries of Environment are making increasing use of **websites** to disseminate information and raise awareness (a precondition for real public participation). Recent improvements include creation of websites in Moldova, Tajikistan, and Uzbekistan, and regular updates in Armenia, Georgia, Kazakhstan, and Uzbekistan. As a result, 11 have websites (not Turkmenistan) and in ten cases those are updated regularly (not in the Kyrgyz Republic.) However, the quality of those websites (content, user-friendly language) is a concern.

EECCA Ministries of Environment report that programmes for **training civil servants** in interacting with the public are being implemented in at least three countries (Armenia, Ukraine and Uzbekistan). The situation has improved in Uzbekistan, which started implementing such training programmes, and deteriorated in Belarus, where they have been terminated.

Real practices of public participation are emerging. The public is increasingly allowed, and even encouraged, to provide input to draft laws. On-line forums and other forms of consultations are being established to receive feedback from stakeholders during the design of new environmental regulations – in the Kyrgyz Republic it has become mandatory. Important steps have been taken in improving procedural aspects (although in Georgia NGOs complain that not enough time is given for NGOs to provide well-prepared comments), the next step will be to prove that consultations are not meaningless and stakeholder opinions make a difference. At the local level, however, public participation is not yet taking hold – partly due to lack of central government support and low skills of local officials on public participation issues.

Box 6.2.2 Public Participation Scorecard

Most countries report having structures and instruments in place to support public participation in decision-making. Countries that seem to have made particular progress are Armenia (establishment of a public relations unit and provision of training for judicial staff) and Uzbekistan (guide and training for public environmental officials).



Source: EECCA countries' responses to EAP Task Force questionnaire

Examples of **government/NGO collaborations** keep increasing – such as work of NGOs in Tajikistan on compliance assurance and participation in water resources management in Kazakhstan via basin councils. NGOs very much value the increasing "moral support" that they receive from public officials.

Box 6.2.3 Building blocks for public participation in EECCA

From June 2002 to December 2004, national teams in 6 EECCA countries (Azerbaijan, Armenia, Belarus, Georgia, Moldova, Ukraine), with support from the EC and leaded by the REC and Royal Haskoning carried out a regional project aimed at fostering implementation of the Aarhus Convention by enhancing the capacity of public authorities and NGOs to meet public demands for environmental information and to encourage greater public participation in environmental decision-making. Project activities included study tours, 12 pilot projects, publication of national user guides and training materials for officials and civil society (in English, Russian and local languages), training events (over 1000 officials and NGO members trained), and the creation of networks of trainers and journalists.

An example of concrete results from the pilot projects include the issuing of procedures for public participation in environmental decision-making in the Armenian city of Hrazdan, the testing of those procedures in the development a plan to improve air quality in the city, and the dissemination of this experience through training, booklets and local TV stations. While the project outcomes are still relatively limited in the overall scale that is needed for the full implementation of the Convention in each country, these experiences provide a basis on which to build further programmes and measures.

Source: Royal Haskoning and the REC (2004)

MAIN BARRIERS

The gap between "formal" and "real" public participation in environmental decision-making is partly due to the general weakness of Environment Ministries (including lack of financial resources), a low profile of public participation issues and, in some cases, to a culture of resistance to public participation. While the principle of public participation is formally accepted by most countries, lack of public participation skills among public officials and absence of implementing regulations is impeding its concretion. In some countries, obstacles to NGO activity have actually increased.

Reasons for non-compliance with existing legal provisions include lack of political will (at both national and local level), low awareness among officials, and absence of consequences for non-compliance.

Public participation in environmental decision-making is also hampered by the lack of interaction between ministries and with local administrations.

Loss of interest from external donors in supporting public participation programmes has emerged as a negative development – for example, in some cases it has forced EECCA RECs to deviate from their original *raison d'etre* of supporting civil society's participation in environmental decision-making.

WAYS FORWARD

Take a more strategic approach, assessing needs and building on previous efforts. Develop concrete tools and procedures and test them in real decision-making processes, including SEA, IEA and integrated permitting. Develop indicators to track progress with public participation.

Issue or clarify implementing regulations governing public access to environmental information and public participation in decision-making. Define the term "environmental information", establish simple and clear procedures for requesting/providing environmental information, and define penalties for not providing it. Similarly, identify the "decisions" in which the public can participate, establish simple and clear procedures for public participation, and define penalties for failing to comply with those procedures.

Develop awareness-raising and training programs for public officials on public participation in environmental decision-making –

including training for judicial officials and parliamentarians.

Establish a department of public relations. Develop and/or improve IT-based mechanisms for disseminating information – including through regular updates of websites and responding to public enquiries. Make information available in local languages – including that related to international projects.

Work also on the demand side of the public participation equation. Inform citizens of their rights – possibly through campaigns. Extend support programmes to NGO activities aimed at improving public participation. Facilitate the financial stability of NGOs (for instance with favourable tax treatment).

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OBJECTIVE 6.3 ENVIRONMENTAL EDUCATION

INTRODUCTION

Educational initiatives can not only promote environmentally-responsible behaviour, but also represent an effective tool in policy mixes targeted at improving management of particular problems (such as water resources or waste).

The UN Decade on Education for Sustainable Development runs 2005-2014. While, formally, the EECCA Environment Strategy focuses on environmental education, in the Kiev Conference Environment Ministers also adopted a Statement on Education for Sustainable Development. Thus progress on Education for Sustainable contributes to acheiving objective 6.3 of the EECCA Environment Strategy.

In 2005 EECCA countries adopted the UNECE Strategy for Education for Sustainable Development. (At the time of writing, the UNECE Secretariat was preparing a report that will provide an overview of implementation progress based on country responses to the set of indicators developed for this purpose.)

Environmental education (EE) is the most developed component of education for sustainable development (ESD). In addition, ESD includes as well the economic and social components, in the same sense that sustainable development goes beyond strict environmental management.

EE/ESD are not restricted to formal education or to school children and young people, but they rather should be understood in a context of continuity of education and awareness and education for all ages and of broad public awareness raising on environmental management and sustainable development.

This chapter draws on an analytical review prepared by the European ECO-Forum, input from the REC and CAREC and materials prepared in the framework of the UNECE Strategy for Education for Sustainable Development.

RECENT PROGRESS

In most EECCA countries, environmental education is reflected in **laws** on environmental protection adopted in the 1990s -- Armenia and Azerbaijan even have laws on environmental education. Environmental education is generally included in the **policy documents** of the Education and Environment Ministries.

Legal coverage for the most recent concept of ESD is being explored – a draft law on ESD is under consideration by the Georgian parliament.

Institutional responsibility for environmental education is still attached to Ministries of Environment in most countries – exceptions being the Russian Federation and Ukraine, where responsibility has passed to the Ministry of Education.

Many national **programmes** and plans include support for environmental education – examples include Kazakhstan's Concept on Environmental Education, Armenia's NEAP and Turkmenistan's Programme of Biodiversity Conservation. ESD is still rarely included in national development programmes – one exception is Tajikistan – and across the region there are generally no special programmes to support ESD. This may be linked to the lack of conceptual separation between ESD and environmental education – Belarus is the only country that has formalized such separation.

Environmental education is well established in the **education systems** across the EECCA region. Environmental education is present in higher education in all countries and in schools in at least half of the countries – for instance, 6% of school time is allocated to environmental education in Ukraine. Moreover, thanks to a rich experience and tradition in EECCA countries and the enthusiasm of teachers and NGOs, EE practice is rapidly improving. Training of teachers and education specialists on environmental education is carried out in all EECCA countries. Methodological guidance on environmental education is available for teachers in Armenia, Kazakhstan and Turkmenistan. Textbooks and other materials have been developed – for example in Armenia, Azerbaijan, Kazakhstan and Uzbekistan.

But insufficient attention is still being paid to local environmental issues in educational materials. ESD is being introduced mostly through stand-alone projects (rather than through existing subjects or cross-curricular approaches).

Non-formal educational activities are carried out mostly by NGOs, often with donor support. Good examples of NGO projects being partly supported by EECCA governments include awareness-raising for policy makers in Armenia, the Green Pack in Azerbaijan and the Russian Federation, summer camps in Ukraine and a "nature discovery trail" in the Borjomi-Kharagauli National Park in Georgia. However, at the local level, resource centres are mostly established and supported by NGOs. An exceptioin is the Centre for Environmental Education established by the Ministry of Environment, CAREC and OSCE in Tajikistan.

Awareness-raising campaigns often take place in the framework of international projects – for example POPs or ODS. Aarhus Centres (on environmental information) or Information Centres of Ministries of the Environment SD also play a role. Indeed, a lot of information is available, but not yet through official portals and catalogues. Not much has been done in assessing the quality of materials (printed and web-based).

Public resources available for EE/ESD activities are very limited. The allocation of public resources for EE/ESD in the Karaganda and Pavlodar oblasts in Kazakhstan represents the exception, rather than the rule. The lack of budgetary stability to support education initiatives represents a real risk for their continuity in the near future.

Cooperation with NGOs is taking place. Multi-stakeholder bodies have been established in several countries – such as the Kyrgyz Republic, Moldova or Ukraine. An Interagency Commission on Implementation of the UN Decade on ESD has been established in Armenia. In Central Asia, the interstate working group involves NGOs and academics in addition to Ministries of Education and Environment. Hearings, meetings and consultations have taken place – for instance Kazakhstan, Kyrgyz Republic, Russian Federation and Ukraine.

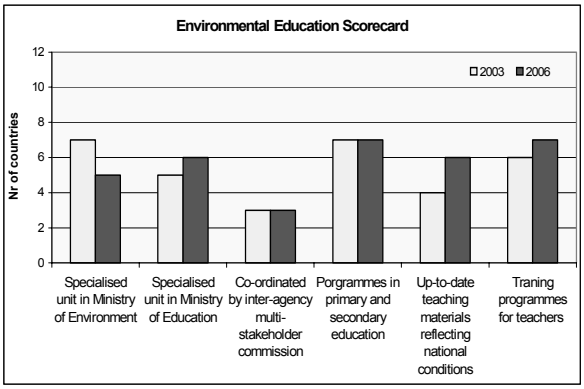
Box 6.3.1 Taking Advantage of Available Tools – the Green Pack in EECCA

In 2000 the Regional Environmental Center for Central and Eastern Europe started to develop Green Pack – a multimedia environmental education kit primarily intended for primary school teachers and their students. The Green Pack was first used in Poland, Hungary and Bulgaria. In 2004, the Green Pack – with the support of the Toyota Environmental Activities Grant Programme and the Finnish Ministry of Environment – started to be used in the Russian Federation, initially in Moscow and St. Petersburg (with plans to be extended to Komi, Western Siberia and the Far Est). In 2005, it started being used in Azerbaijan – with support from OSCE and British Petroleum. The possibility of introducing the Green Pack to Belarus, Kazakhstan and the Kyrgyz Republic is being explored.

Source: Staff of the Regional Environmental Centre for Central and Eastern Europe

Box 6.3.2 Environmental Education Scorecard

This scorecard focuses on environmental education, as the UNECE Secretariat is working on monitoring progress on the broader field of Education for Sustainable Development. According to country responses, Belarus and Tajikistan have closed the specialised unit in the Ministry of Environment, Georgia has set up a unit in the Ministry of Education, and Azerbaijan and the Kyrgyz Republic have developed teaching materials and established training programmes for teachers.



Source: EECCA country responses to OECD questionnaire

A **transition to ESD** is taking place. Sub-regional conferences have been organised in Central Asia (annually) and in the Caucasus. Inter-sectoral structures (councils, commissions)

have been created in Armenia, Kazakhstan, Kyrgyz Republic, Moldova and Ukraine. Consultations have taken place in Kazakhstan, Kyrgyz Republic, Russian Federation and Ukraine. Programmes are being launched – Belarus has started work on a National Programme, Kazakhstan has drafted a National Plan on ESD and the Russian Duma has recommended the development of a national strategy and action plan. And an ESD standard has been developed in the Russian Federation.

Box 6.3.3 Greening Education in Ukraine

Since December 2001, when the Ministry of Education of Ukraine ratified the Concept on Environmental Education, significant developments have taken place in this field. A draft law on environmental education has been submitted to the Parliament. A detailed Plan of Action for 2002-2005 has been coordinated and implemented by the Ministries of Education and Environment. The shortcomings of the Education Strategy in promoting sustainable development have been identified. Standards for environmental education at the levels of baccalaureate and masters have been created and experimental programmes launched. Education specialists have prepared and published dozens of handbooks and manuals on environmental topics – from basic introductions to advanced professional materials. In addition, NGOs have run seminars and competitions aimed at improving environmental education in educational establishments.

Source: Government of Ukraine
http://www.unece.org/env/esd/ESDintheregion.table.htm

Box 6.3.4 Education for Sustainable Development in the Kyrgyz Republic

In the Kyrgyz Republic, NGOs and the government are working together to introduce ESD in a network of 25 schools (2 to 3 per oblast). Achievements include additional learning hours for ESD and the establishment of a consultative body. But there is still a need to refocus from "naturalistic education", based on old textbooks, to ESD. Factors of success include the existing good collaboration between departments of Environment (very supportive) and Education (more reticent) as well as an explicit strategy of the NGOs to keep good relations with government – including through the involvement of public officials from the ministries of environment and education as experts.

Source: European ECO-Forum Workshop on Progress in Public Participation and Education in Central Asia

But not everything is positive. The general experience has been to rename EE to ESD without building up the economic and social components of ESD. And results on the ground are still few and far between -- ESD at the level of schools has been introduced only in authors' programmes in a few countries.

MAIN BARRIERS

A set of barriers to faster progress in environmental education and education for sustainable development in EECCA are structural and related to the education sector. There are no incentives for the Education sector to cooperate with the Environment sector. Curricula in EECCA are heavily loaded, not leaving space for new subjects. The education system is not well coordinated among different levels. Partly due to low salaries, teacher motivation is often low and most qualified individuals are leaving the education sector.

Conceptual understanding of education for sustainable development (and environmental education) is still a problem. EECCA countries have a long tradition of environmental education. But environmental education in EECCA relies mainly on scientific and technical approaches to finding solutions for environmental problems, rather than on active citizen participation, changes in human behaviour, or consumption and production patters. Sustainable development is still understood as limited only to nature conservation and pollution prevention.

A basic barrier is given by deficiencies in practical educational and training materials – available resources are old and not systematized.

In the area of non-formal education, insufficient knowledge of environment and sustainable development issues among journalist contributes to the minimal coverage of those issues among mass media.

WAYS FORWARD

Further promote cooperation between Ministries of Education and Ministries of Environment. Provide legal support to ESD through education laws (not specific ESD laws), so that ESD is included in the national

curriculum as a cross-cutting topic to be discussed through existing subjects. Improve the conceptual understanding of education for sustainable development among public officials, teachers and NGOs. Develop and implement a training programme for teachers. Develop and engage in opportunities for regional learning among ESD and EE practitioners.

Introduce modern interdisciplinary multimedia educational programmes that enable discussion of sustainable development principles in all obligatory subjects. Update current educational materials and training manuals on environmental education, and develop, publish and catalogue new educational resources. Consider using NGO materials in formal education and invite them to take part in the development of ESD programmes.

Pay attention to adults. Run environmental awareness campaigns on national languages. Work on getting the cooperation of mass media. Provide training for journalists on environmental issues.

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OBJECTIVE 7. TRANSBOUNDARY ISSUES AND MULTILATERAL ENVIRONMENTAL AGREEMENTS

INTRODUCTION

Environmental degradation often has cross-border impacts. That is the case for long-range air pollution, transboundary waters, transboundary movements of hazardous waste, or marine pollution. In addition, biodiversity conservation is a global public good. Management of those issues is more efficient if actions are coordinated between countries. Environmental cooperation or diplomacy is also important to avoid conflicts and can in certain cases be used to facilitate political cooperation.

Cooperation often takes place under the framework of multilateral environmental agreements (MEAs). Even when EECCA countries are not ready to join an MEA, they can benefit from the work being done in the MEA framework, as some MEAs have mechanisms to involve non-Parties in their work– for example, the assistance programme under the Convention on the Transboundary Effects of Industrial Accidents.

This chapter focuses on contributions made by EECCA countries to solve transboundary environmental issues within the framework of MEAs. It draws heavily on the UNECE note "Implementation of UNECE Multilateral Environmental Agreements".

RECENT PROGRESS

There is a slow rate of **ratification** of the more recent UNECE conventions and protocols, in particular protocols signed in the Kiev Ministerial Conference. A number of Parties (particularly EECCA countries) have tended to ratify conventions/protocols without having necessary changes in legislation or implementation provisions in place. The benefit of this has been the pressure put on the governments and parliaments of such Parties to adopt some implementing measures, as well as the possibilities for receiving technical assistance, which may be possible only to Parties to a convention. However, it seems that recently countries are abandoning this practice and do not proceed with ratification until they have fully prepared for implementation.

Beyond ratification, the need for better **compliance and implementation** is widely recognized. EECCA countries provide very limited domestic funds for the implementation of the conventions, depending almost exclusively on external assistance. Not all EECCA countries report to the conventions, information often arrives late and many reports are of poor quality, making thorough assessment of implementation impossible. Failure to meet reporting requirements hinders the operation of the compliance mechanisms. Countries found in non-compliance do not always engage in an active dialogue with the compliance/ implementation committee and keep it informed of their progress towards achieving compliance.

Among EECCA countries, there have been no new ratifications of the UNECE Convention dealing with **long-range air pollution** or any of its eight protocols since 2003. Nine EECCA countries are Parties to the Air Convention – the exceptions are Tajikistan, Turkmenistan and Uzbekistan. Belarus, the Russian Federation and Ukraine are Parties to the EMEP Protocol (dealing with monitoring) and two protocols dealing with emissions of sulphur and nitrogen oxides. Moldova is Party to the Protocol on Persistent Organic Pollutants (POPs) and the Protocol on Heavy Metals.

Some progress is taking place in air quality monitoring according to the Air Convention requirements, even by non Parties to the EMEP Protocol. Work to establish EMEP monitoring stations is being undertaken in Armenia, Georgia, Kazakhstan, Moldova and Ukraine. Belarus has provided methodological support for emission inventories in EECCA. Kazakhstan has hosted workshops related to the UNECE air convention, including one on emission inventories. Belarus, Kazakhstan, Moldova, the Russian Federation and Ukraine have participated in ecosystem monitoring networks either through attending meetings or submitting monitoring data. In addition, POPs inventories are under construction in several EECCA

countries (most often as part of a project under the Stockholm Convention on POPs).

Six EECCA countries had ratified the UNECE Convention on **transboundary waters** before the Kiev Conference. Since then Moldova and Ukraine have ratified the Water and Health protocol. Although problems with setting up river basin management structures under the UNECE Water Convention remain, the last three years have seen the development and/or entry into force of new agreements for transboundary cooperation (such as the Framework Agreement on the Sava River Basin) and the establishment of new joint bodies (such as the Chu-Talas Rivers Commission). A promising example of cooperation in data exchange is provided by Moldova and Ukraine – in the Dniester basin, data from two of the six agreed-upon measuring stations are already being gathered and exchanged.

Among EECCA countries, only Tajikistan is not Party to the Basel Convention on **transboundary movements of hazardous waste**. Kazakhstan became Party a few days after the Kiev Conference. But many EECCA countries still do not report significant information to the Basel Convention Secretariat. Since 2003, Armenia and the Russian Federation have issued regulations restricting transboundary movements of hazardous waste.

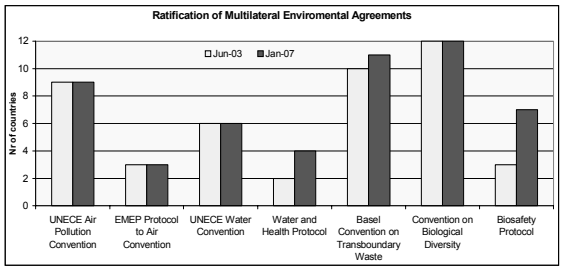
Six EECCA countries are Party to the Stockholm Convention on **Persistent Organic Pollutants (POPs)**. Of them, Armenia, Belarus and Moldova have prepared implementation plans; Azerbaijan has failed to comply with the deadline; and the deadline has not yet arrived for Georgia and the Kyrgyz Republic.

All EECCA countries are Party to the Convention on **Biological Diversity** (CBD). Since 2003, four EECCA countries have ratified the Biosafety Protocol – Armenia, Azerbaijan, the Kyrgyz Republic and Tajkistan. Only seven EECCA countries have submitted the third national report to the CBD Secretariat, due in September 2006.

All EECCA countries are Party to the United Nations Framework Convention on **Climate Change** (UNFCCC). Since 2003, two EECCA countries have ratified the Kyoto Protocol – the Russian Federation (making possible for the protocol to enter into force) and Belarus. Kazakhstan and Tajikistan are the only two EECCA countries that have not ratified the Kyoto Protocol – this will prevent them from taking advantage of CDM mechanisms. Belarus, the Russian Federation and Ukraine have special obligations, as so-called Annex I countries, including reporting ones – the three countries were several months late with the submissions of national communications due in January 2006

Box 7.1 Multilateral Environmental Agreements Scorecard

Ratification of multilateral environmental agreement is a very narrow measure of progress in environmental cooperation. Implementation is a more important measure, but difficult to track. Ratification is a necessary first step before implementation can be assessed and recent numbers seem to suggest very limited progress. Interestingly, more EECCA countries have ratified the global Cartagena biosafety protocol (seven in total, four since 2003) than the protocols negotiated in the UNECE region.



Source: UNECE/UNEP Conventions' websites

Box 7.2 Sharing information on transboundary waters in Central Asia

Information management remains very weak in EECCA countries, where water, environmental and health agencies often rely on hard copies of data. To facilitate data exchange among institutions undertaking monitoring and assessment, joint bodies have been established in Central Asia. The Uzbek Hydro-meteorological service functions as a joint communication centre, operates a joint database and provides clients in the riparian countries with hydro-meteorological data, water-quantity related information and forecasts. In addition the Central Asia Regional Water Information Base project (CAREWIB) is serving as a useful repository of water-related information in the Aral Sea basin.

Source: UNECE (2007)

Less is known about common action to protect the **regional seas**. In the Caspian Sea, the four EECCA countries (alongside Iran) have ratified the Framework Convention for the Protection of the Marine Environment of the Caspian Sea. They have also developed (with international support) guidelines that provide step-by-step procedures for implementation of the UNECE Convention on Environmental Impact Assessment in a Transboundary Context. While oil pollution is one of the most significant pressures in the Caspian Sea, low penalties for oil pollution and little government control result in little incentives for oil companies to minimise discharges to the environment. Projects and formal cooperation have also taken place under the Commission for the protection of the Black Sea.

Box 7.3 The marine environment – A transboundary issue of growing importance

As economic activities put growing pressure on the EECCA coastal zones and seas, many ecosystems have lost biological richness and ability to adapt to changing conditions. Large areas of the Black Sea and many parts of the Caspian Sea suffer from eutrophication – although the North Western shelf of the Black Sea is experiencing some recovery. Many fisheries are in decline, primarily because they are exploited at levels outside safe biological limits but also due to invasive alien species – a foreign jelly comb may cause losses of over 4 billion euros per year to the Caspian fisheries. The rate of invasive alien species introductions continues at a steady rate. The Barents and Russian Arctic Seas are particularly vulnerable to impacts from hazardous substances, particularly persistent organic pollutants. Pollution arising from the oil industry is threatening the Caspian Sea's environment and its biodiversity (still a localised problem that will become far more widespread as oil exploration and production in the region increases), while single hull tankers are still permitted in the EECCA seas. Despite these growing concerns, still little progress is being done on coordinated monitoring at the regional sea level.

Source: EEA (2007)

MAIN BARRIERS

Low rates of ratification of multilateral environmental agreements can be explained by weaknesses in EECCA countries (related to low political commitment, awareness of the obligations, technical, administrative and financial capacity, and coordination among relevant national authorities) but also by the increasing complexity of the obligations.

Implementation is hampered by unclear national legislation, unreformed policy instruments (such as water quality standards), poor coordination between government departments and agencies, and the instability provided by never-ending institutional reforms.

Insufficient and unstable domestic funding (and subsequent lack of equipment and personnel training) is a major barrier – even the cost of translating documentation is a problem. Inadequate assessments of the costs of data collection, analysis and reporting have led to activities halting after international assistance ended.

WAYS FORWARD

Base the management of regional commons and compliance with MEAs on improved national policy frameworks.

Work on improving institutional arrangements. Establish clear responsibilities. Improve coordination procedures between government agencies and departments, both horizontally and vertically. Improve coordination at the national level between the focal points for the different conventions.

Adopt a systematic approach to capacity building. Structure and prioritize capacity needs, both short and long term. Invest domestic resources. Consider using capacity-building activities to help improve coordination.

Embed international assistance projects in national plans. Adapt systems requirements to countries' resources. Ensure that projects do not have overlapping objectives, duplicated work and involve the right actors.

FURTHER INFORMATION

EEA. 2007. Europe's Environment: the Fourth Assessment. (Marine chapter)

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CONCLUSIONS

Coming up with a concise set of conclusions across the 15 areas and 12 countries analysed in this report is a challenging task. It is made more difficult by the growing political and economic diversity among EECCA countries – as richer and poorer countries do not face the same constraints and opportunities for improvement. In addition, there is no direct correspondence between progress in economic and democratic reform and environmental performance.

For the most part, EECCA countries lack the strong drivers that Western countries (public demand, price signals) and Central European countries (EU accession requirements) have enjoyed. The opportunities offered by renewed economic growth – both for carrying out environmental investments and for getting the prices right – have not been fully utilised. The governance situation, given slow progress in public administration reform and tackling corruption, remains generally unsupportive of modern environmental management approaches. Despite their diversity, EECCA countries still share a common regulatory and managerial heritage which continues to create opportunities to learn from each others' experience.

ASSESSING PROGRESS

There are many examples of successful action across countries and policy areas – as documented throughout this report. Even in some areas that seem "frozen" in time (such as environmental quality standards), at least the need for reform is finally recognised.

Progress is not even across policy areas. While it is difficult to compare progress across objectives of the EECCA Environment Strategy, noticeable progress seems to have been made on compliance, water supply and sanitation, water resources management or agriculture. Less progress seems to have been made on waste management, biodiversity, transport or energy efficiency.

Progress is rarely consistent – there is little evidence of countries taking a coherent approach to reform for any single policy area. It is not random, however – it is driven by various factors such as donor support, industrial lobbying, presidential attention, or determined leadership. Harnessing the appropriate driver(s) in each country is the strategic challenge.

The basic legal and policy frameworks are often in place and keep improving – even if they are not yet perfect. The real problem is at the implementation level – from lack of implementing regulations to weak enforcement capabilities. The implementation gap is particularly evident at the sub-national level – where progress for many environmental issues will ultimately be decided.

Looking at progress across areas offers some valuable insights. One interesting finding relates to environment-related infrastructure. Whether one looks at water supply and sanitation, waste, energy, urban transport or irrigation, the situation is remarkably similar: unsustainable financial models result in crumbling infrastructure, poor service and negative environmental impacts.

Another finding relates to the relationship between environmental authorities and line ministries. While it is increasingly recognised that progress on environmental policy integration will largely determine overall progress towards environmental sustainability, environmental authorities are still ill-prepared to engage in meaningful cross-sectoral policy dialogue and little progress has been made towards adopting integrated policy responses.

Overall, progress does not seem to have accelerated after the Kiev Ministerial Conference. Indeed, in some cases there has been regression, with the authority and capacities of environmental authorities downgraded. The experience since 2003 confirms that environmental progress in EECCA will take a much longer time than in CEE countries. But there are signs that consistency and patience will pay off – recent progress in some countries was made possible by the foundations established several years earlier.

IDENTIFYING CONSTRAINTS

EECCA countries face many barriers in improving environmental management and advancing towards environmental sustainability. Finance is clearly a cross-cutting constraint, but not necessarily the most important one in all cases.

Within environmental authorities there are some common institutional and organisational weaknesses – mostly related to the characteristics of public administration in EECCA countries. Political leaders often fail to provide leadership and vision and, in some cases, unduly interfere with technical work and decision-making. The administration is seldom supportive of modern conceptions of environmental management – it is still characterised by issue-specific, technocratic and non-transparent approaches. It is also biased towards "producing laws" rather than improving regulations and achieving measurable results. Public officials often face perverse incentives – both in terms of pay levels and performance assessment – which preserve dysfunctional work practices and impede the introduction of modern environmental management approaches.

Environmental professionals in EECCA have solid scientific backgrounds. But skills related to the functioning of market economies – whether managerial, economic, financial or commercial – are often in short supply in environmental authorities, municipalities and environmental service providers. This places obvious limits on making the economic case for environmental protection, working in a medium-term expenditure framework, understanding business decision-making, preparing project proposals or managing projects.

Poor understanding of the role of information management is an obstacle to policy development and implementation. Data gaps, poor data quality and incompatible data systems are also important – this is the case, for instance, in waste management, rural water supply and sanitation or urban air pollution. Also, the costs of inaction are generally unknown across all policy areas.

Inter-institutional co-ordination remains a major problem – both horizontally (cross-sectoral policy development) and vertically (policy implementation).

Adopting good environmental practices is made difficult by the low environmental awareness of the public and economic agents – whether regarding biodiversity conservation, waste management, energy efficiency, transport or agri-environmental options. Despite a large number of environmental NGOs across the region, they are most often focused on local issues or donor-supported, and have not established the type of membership base that NGOs have done in many OECD countries. Media coverage, where it exists, emphasises the technical dimension of environmental issues.

Environmental management in EECCA also faces structural and political constraints that cannot be expected to be tackled by environmental authorities. They include, as mentioned earlier, the lack of strong drivers (and the subsequent low profile of environment on national policy agendas), a poor governance context (including widespread corruption), and the challenge of decentralising responsibilities in a fiscally-responsible manner. But also concerns about the competitiveness and social impacts of environmental policies (affecting the setting and enforcement of pollution abatement requirements as well as the reform of prices and tariffs). Since the 2003 Kiev Ministerial conference, donor environmental cooperation has also significantly decreased.

Finally, there is still a common perception among top policy-makers (such as presidential administrations and ministries of finance and economic development) that environmental protection is a hindrance to economic growth – rather than a necessary element to ensure socio-economic development over the long-term.

GOING FOR RESULTS

There is no single roadmap for accelerating progress in environmental management across EECCA countries. EECCA countries are diverse economically and environmentally, they have different aspirations, and are not able nor willing to move at the same pace. Nevertheless, EECCA countries still share many traits – legacies, positive and negative. The analysis in this report points to a number of common, key action areas.

- **A clear vision** of where each EECCA country wants to go and how to get there. Clear environmental priorities and objectives will be crucial to guide both domestic reform efforts and international assistance. Priorities need to be established on sound analysis and participatory political processes. Environmental authorities could aim to demonstrate why environmental issues should be included in national development plans (as well as donor country programmes) and establish alliances with finance and sectoral ministries to support "win-win" sectoral reforms.

- **A step-by-step approach to reform.** This will include defining and monitoring targets (including targets in the main economic sectors) in the short-, medium- and long-terms; sequencing actions; setting a reform speed that is commensurate with the political, economic and technical restrictions that each EECCA country faces; making use of a broader toolbox (for example in energy efficiency or compliance promotion); and building needed capacities accordingly.

- **A stronger focus on implementation**. This would include better linking of planning, budgeting and monitoring processes; developing implementing regulations; improving inter-sectoral co-ordination and monitoring the contribution of line ministries to national environmental objectives; and empowering sub-national environmental authorities.

- **An approach that focuses on providing real incentives** to encourage producers and consumers to improve their environmental performance in the most cost-effective manner. This will require streamlining regulation, reforming economic instruments and deploying a wider range of instruments to promote compliance with environmental requirements. But also, a stronger emphasis on demand management – combining price and tariff reforms with awareness-raising.

- **An improved institutional framework**. This will require particularly a minimum level of institutional stability and discipline (so that reform intentions and actions are followed through), and a clarification of responsibilities at sub-national level (whether in water supply and sanitation, waste management, river basin management or urban transport). Environmental institutions need to develop more effective and efficient business plans to achieve their priorities, and remove the perverse incentives that impede a results-oriented approach to staff performance. Environmental policy development and implementation needs to be underpinned by more robust and policy-relevant information systems.

- **A comprehensive approach to environmental financing.** This would include integrating environment into public expenditure frameworks (commensurate with the consequences of environmental degradation); using incentives to encourage private investment in pollution abatement (according to the polluter pays principle); exploiting the potential for user charges to finance environmental services (according to the user pays principle); improving the investment climate to encourage private sector participation in financing the provision of environmental services (including financial firms); taking advantage of new sources of finance (such as the Clean Development Mechanism); and making the most of donor funding (for instance by using grants to access IFI financing). EECCA governments should also strengthen their capacity to mobilise those sources of finance (for instance, their capacity to prepare environmental investment projects) and manage incoming funds.

- **A strategic investment in skills**. EECCA environmental authorities face many capacity constraints, and not all of them can be tackled at the same time. This report argues that environmental economics (to make the economic case for environment), management (especially financial and human resources), policy integration and stakeholder relations are among the critical areas that need to be prioritised. Particular attention also needs to be paid to the capacity needs of sub-national actors.

- **A stronger engagement of stakeholders**. Environmental authorities need to build constituencies to support environmental reforms. NGOs should be, but are often not yet, natural allies – both in their role of environmental watchdogs and in taking local action. Understanding industry concerns and looking for common ground could also be prioritised.

- **A more supportive international co-operation framework**. Environmental cooperation with EECCA countries can be motivated by various interests: supporting the achievement of the MDGs; implementing MEAs; the EU's "new neighbourhood" policy; concerns about environmental security and migration. However, as donors move away from sectoral to general budget support, it will be all the more important for environment ministries in EECCA to demonstrate the importance of environmental issues as well as their ability to use resources effectively and efficiently. Donors could consider more strategic approaches to co-operation that would enable environment ministries to strengthen their institutional capacities. In building their capacities, EECCA countries could take advantage of international processes and establish more opportunities for regional learning.

Box III. 1 Has the EECCA Environment Strategy made any difference?

This report has attempted to document progress of EECCA countries towards achieving the objectives of their common Environmental Strategy. It was not commissioned to measure the impact of the Strategy itself in facilitating that progress. Nevertheless, the EAP Task Force Secretariat has taken advantage of an international workshop that took place in November 2006 to ask EECCA country representatives about the impact that the EECCA Environment Strategy has had in their countries and its possible role after the Belgrade "Environment for Europe" Ministerial Conference.

EECCA country representatives noted that the EECCA Strategy has served as a useful reference and guidance document for EECCA Environment Ministries when developing policy and legislative documents. It has also provided a framework for monitoring progress and benchmarking performance, and it has facilitated support in several specific areas. Participants identified some shortcomings with the Strategy that impeded its effective implementation: it did not have any "binding" character; it specified implementation mechanisms in some but not all areas; and it covered too many issues. The participants felt that that the situation has changed in the EECCA region since 2003 and that the Strategy was no longer adapted to current needs. A more differentiated approach is now needed, tailored to the specific needs of the EECCA sub-regions or individual countries. At the same time, there was a need for an EECCA-wide mechanism to exchange information and good practice, and to facilitate dialogue and co-operation with donors.

Source: EAP Task Force Secretariat staff

ANNEX: COUNTRY PROFILES

Country Profile: ARMENIA

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	2 370	3 401
Annual GDP growth rate 2002-2005		12.6
Economic structure (as % of GDP)		
Agriculture	26.0	20.5
Industry	35.1	44.3
Services	39.0	35.2
Exports (% of total exports)		
Agricultural products		12.7
Fuels and mining products		12.7
Manufactures		69.3
FDI (Inward flows as % GDP)	6.1	5.8
ODA (% GNI)	11.9	7.1
GDP per capita (PPP, constant 2000 international $)	3 008	4 484
Poverty rate (% of pop. below $2/day)	31.3[a]	
Population (million inhabitants)	3.05	3.02
Urban population (%)	64.7	64.1

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental Priorities

While a new NEAP is in the process of being prepared, the **1998 NEAP** is the most recent strategic document laying out environmental priorities. It identifies a broad number of environmental issues to be tackled through different policy levers:

- National Policy and Programme Development (integrated water resources management, water supply and sanitation, integrated land use, waste management, forestry and biodiversity, transport)
- Legal and Regulatory Reform (legal framework, economic instruments, national protected areas system)
- Institutional Strengthening (Ministry of Environment, environmental monitoring and enforcement agencies)
- Priority Investments in watershed and land management, forestry and biodiversity, water supply and sanitation, solid waste management
- Environmental Awareness and Education.

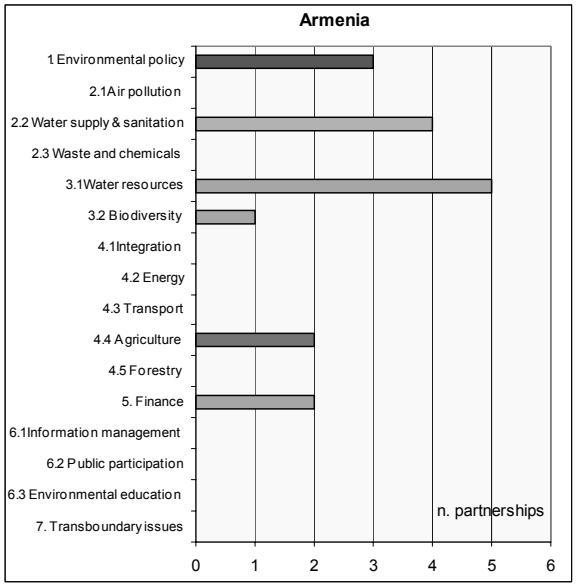
The **2003 PRSP** identifies, from a poverty reduction perspective, the following environmental priority areas:

- Forest resources management
- Land degradation, including desertification
- Water resources, including Lake Sevan
- Municipal and hazardous industrial waste.

International Co-operation

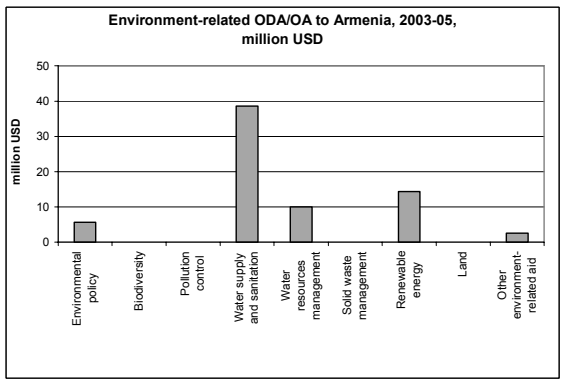
Armenia's main environmental cooperation partners include Global Environmental Facility (GEF), World Bank, UNDP, UNEP, UNECE, UNIDO, OSCE, OECD/EAP Task Force, EU TACIS, REC Caucasus, WWF, and several bilateral donors such as Germany, USAID, Japan, Sweden (SIDA), Canada, Austria, Denmark, and Czech Republic. It also has bilateral co-operation programmes with some neighbouring countries like Georgia, Iran and the Russian Federation. In November 2006 the European Neighbourhood Policy Agreement was signed between Armenia and EU which widens perspectives for bilateral co-operation with EU member countries.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation Highlight

WATER RESOURCES MANAGEMENT

Water sector reforms were launched in 2001. Since 2003, a Water Resources Agency has been set up within the Ministry of Nature Protection and five basin management bodies established. WRM functions have been distributed among the Water Resources Agency, the State Water Committee, the Independent Regulatory Commission and the Ministry of Economy and Finance. A Water Policy and a National Water Programme have been approved, and more than fifty regulations issued. A package of actions has contributed to gradually increase the water level in Lake Sevan by 174 cm in four years.

Source: Ministry of Environment of Armenia

Policy Matrix

The following two pages summarise actions taken by the Government of Armenia that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(1) Report to the Convention on Biological Diversity
(2) Report to the Aarhus Convention
(3) Main text of this report (see thematic chapters for sources consulted)
(4) Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

ARMENIA ENVIRONMENTAL

	Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)
Air Pollution	-7 air monitoring stations refurbished, for a total of 13	-Nr of pollutants for which concentrations monitored increased from 5 to 13 -Nr of pollutants for which emissions monitored increased from 6 to 10 - Strategy on environmental monitoring approved (4)	-Regulation on fuel quality standards for unleaded gasoline and diesel approved -Regulation on emission standards approved - Import of cars without catalytic converters banned (3)
Water Supply and Sanitation			
Waste and Chemicals	- National research centre on waste created (4) -Agriculture extension workers trained on management/storage of organic manure	-Waste Law approved -Chemicals management strategy formulated -Strategy to promote organic farming formulated - POPs Implementation Plan submitted to Convention Secretariat (3)	-List of hazardous wastes approved (3) - Transboundary movements of hazardous waste restricted (3)
Water Resources	-Nr of staff increased 20% (to 73)	-IWRM principles implemented (4) -Nr of water parameters monitored increased from 28 to 47	
Biodiversity		-Inventories of plant species in 2 national parks (1) - Workplan on Invasive Alien Species developed (3) - Biosafety Protocol ratified (3)	-Khor-Virap conservation area in the process of being established (1) - Fines for non-compliance with flora and fauna protection regulations established (4)
Integration into key economic sectors	-Agriculture ministry staff trained in environmental issues - Ozone Centre established (4) - MoE designated as national CDM agency (4) Forestry Department transferred from MoE to Ministry of Agriculture (4)	-Environmental targets introduced in latest agriculture strategy - SEA legislation adopted (3) - SEA pilot implemented (3) - Law on energy savings and renewables passed (3) - CDM memorandum concluded with Denmark (4) -National forest plan approved (1)	-Performance-based energy codes introduced -Forest interventions now subjected to EIA
Cross-cutting	-Budget of MoE increased 4 times -Salary of dept. heads and sr. specialists tripled - Staff in subordinated agencies **decreased** by 65% -Inspectorates asked to focus on priority sectors -Regular meetings with judiciary staff - Judicial staff trained on environment (3) - Inter-agency body on ESD created (3)	-Integration of environmental issues in national development strategies significantly improved - Legal basis for self-monitoring established (3)	- Reform of environmental quality standards started (3) - Law on environmental control passed (3) - Administrative fines increased (3)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
-Pollution charge for SO2 tripled -Pollution charge for NOx doubled -Gas tariff for households increased 16% -Taxes for gasoline and diesel **decreased** 15% - Extension of gas metering continued (4)		-Expenditures in urban transport programmes increased 5% in nominal terms	**Air Pollution**
-Water tariff for households increased from 30-120 to 120-172 lcu/m3 - Water meters installed for all water consumers (4)			**Water Supply and Sanitation**
	- Advice on waste management provided through new waste centre - Information materials and theatre performances for children were prepared and organised on POPs (4)	-% of hazardous and industrial waste collected in Yerevan increased from 85 to 98% -Municipal waste collected increased 7 times to 85K m3 - Landfill upgraded (3) -Programme to improve agrochemicals management established	**Waste and Chemicals**
-Maximum water tariff for all users increased by 43%	-General farm advice on environmental management provided - Awareness campaign organised (3)	-Programme to improve water-efficiency in irrigation established	**Water Resources**
		-Expenditures in protected areas increased 63% from 2002 to 2005 and 351% to 2006 (4)	**Biodiversity**
	- Informative materials on ozone layer disseminated through TV (4) - Guide on CDM published (4) - Lessons on climate change and ozone layer periodically held in schools (4)	- Energy savings and renewables fund established (3) - Two CDM projects sent to UNFCCC committee and approved (4)	**Integration into key economic sectors**
-Amount collected by environmental levies increased 23% from 2002 to 2005 and 53% to 2006 (4) - Nr of parameters subject to pollution charges reduced (3)	-MoE unit for relations with the public re-established -Training programs on public participation available for members of judiciary -Guide on accessing environmental information published (2) - SoE report disseminated electronically (3) - Environmental education textbook(s) developed (3) - 6 Aarhus centres created (4)	-Proceedings from environmental levies earmarked for environmental programmes increased from 9 to 25% -3 environmental funds created, administering 400k lcu - Law approved setting that, starting in 2008, public expenditures in environmental projects/programmes will not be less than the environmental taxes collected the previous fiscal year (4)	**Cross-cutting**

Country Profile: AZERBAIJAN

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	6 409	9 911
Annual GDP growth rate 2002-2005		14.8
Economic structure (as % of GDP)		
Agriculture	15.2	12.3
Industry	50.2	55.4
Services	34.6	32.3
Exports (% of total exports)		
Agricultural products		5.6
Fuels and mining products		85.8
Manufactures		8.6
FDI (Inward flows as % GDP)	22.3	13.4
ODA (% GNI)	5.8	1.9
GDP per capita (PPP, constant 2000 international $)	3 097	5 016
Poverty rate (% of pop. below $2/day)	33.4[a]	
Population (million inhabitants)	8.17	8.39
Urban population (%)	51.1	51.5

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental Priorities

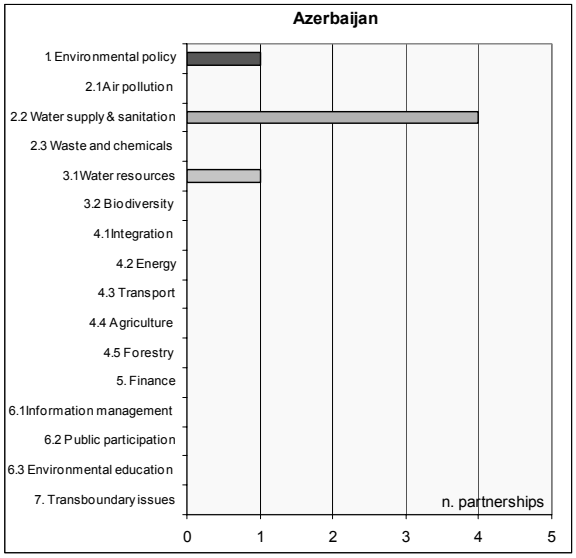
The **1998 NEAP** identifies five priority categories (divided into 32 objectives).
1. Pollution from industrial production (oil exploration and production, energy, transport, other sources)
2. Caspian Sea
3. Forestry, land and biodiversity
4. Institutional development

The **2003 PPRED** (State Programme on Poverty Reduction and Economic Development) includes environment as one of the national priorities. It mentions environmental conditions as a cause of poverty and as a tool to reduce it. The PPRED identifies the following main environmental problem areas
1. Water resources
2. Land
3. Air
4. Forest
5. Caspian Sea

International Co-operation

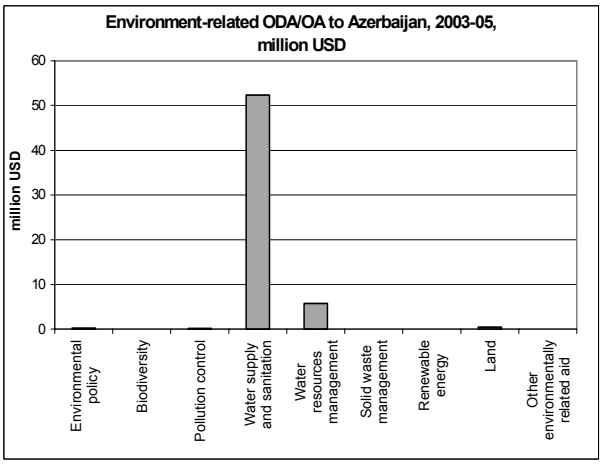
Azerbaijan's main environmental cooperation partners are Germany, Japan, the USA, the United Kingdom, Switzerland and Turkey.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation Highlight

BIODIVERSITY CONSERVATION

Biodiversity conservation is one of the environmental policy priorities in Azerbaijan. To reverse negative trends, the Ministry of Ecology and Natural Resources has initiated a decisive expansion of the number and extension of protected areas. Between 2003 and 2005, protected land doubled, increasing from 4% to 8% of the country's total land area, reaching a total of over 604,000 hectares. In addition, new legislation including stricter penalties has been issued to combat poaching. As a result, the number of individuals of red-listed species has noticeably increased – between 2002 and 2005 the number of gazelles increased by 60%, the number of bezoar goats by 53% and the number of wild cats by 24%.

Source: Ministry of Environment of Azerbaijan

Policy Matrix

The following two pages summarise actions taken by the Government of Azerbaijan that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(5) Report to the Convention on Biological Diversity
(6) Report to the Aarhus Convention
(7) EPR of Azerbaijan
(8) Report to the Basel Convention
(9) Main text of this report (see thematic chapters for sources consulted)
(10) Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

AZERBAIJAN ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution	-Hydrometeorology programme developed for 2003-2010 (3)		
Water Supply and Sanitation	- Integrated WSS structure created (6)		
Waste and Chemicals	-Harmonised system to classify and label chemicals created	-Waste strategy formulated -Hazardous waste management strategy formulated (4) -Programme to support improved agrochemicals management approved	- Ban on hazardous waste terminated and special license introduced (6)
Water Resources		-Caspian Sea Framework Convention adopted - Caspian Sea Plan for 2006-2010 developed (6)	-Presidential Decree on coastal zone use issued (1)
Biodiversity	-Staff working on protected areas increased 30% to 614	- Fauna monitored yearly (6) - PEEN pilot project carried out (5) - Biosafety Protocol ratified (5)	-4 new protected areas established -Protected area doubled from 4 to 8% of territory (6) - Fines for damaging fauna increased (6)
Integration into key economic sectors	-Staff working on integration issues in MoE increased from 10 to 13	- Baku urban transport programme designed (6) -Programme to expand renewable energy developed - Environmental targets introduced in Agriculture Strategy (5) -9 JI/CDM project proposals developed -Programmes to improve biodiversity management in the agricultural sector developed - Programme to improve soil management developed	
Cross-cutting	-Budget of MoE increased 33% -Salary of dept. heads and sr. specialists **decreased** over 30%	-Latest agriculture strategy includes environmental targets -EPR undertaken (3)	- Permitting system generalised (6)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes/, funding)	
-Tax on gasoline increased by 11% -Tax on diesel increased by 112% (to 85% of gasoline tax)	-Advice provided through new Climate Change and Ozone Centre (3) - Daily air pollution data provided through website (6) - Air pollution awareness campaign carried out (5)	- Urban transport project for USD 160 million agreed with Japan (6)	**Air Pollution**
- Water tariff for households increased by 95% to 0.072 lcu/m3 - Over 5% of population now served by utilities under performance-based contracts (5)		- 2 new WSS pipelines built (6)	**Water Supply and Sanitation**
	-Regulation on information on correct use of chemicals approved	-% of waste collected increased 20 points -Capacity for municipal waste disposal in sanitary landfills increased 14% to 230K m3 - Landfill for hazardous waste built (6)	**Waste and Chemicals**
-Average water tariff increased by 49%			**Water Resources**
- Hunting license fees increased (6)	- Training and education centres for staff and visitors created in national parks (6)	-Expenditures for managing protected areas increased 130% - Centres for fauna rehabilitation created (6)	**Biodiversity**
		- Reforestation programme under implementation (6)	**Integration into key economic sectors**
-Amount collected by environmental levies increased 54%	-Environmental education programmes now available also for pre-school -Environmental education teaching materials reflecting national conditions developed -Environmental education training program for teachers available - Aarhus Information Centre established (2)		**Cross-cutting**

Country Profile: BELARUS

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	14 012	18 261
Annual GDP growth rate 2002-05		9.2
Economic structure (as % of GDP)		
Agriculture	11.8	9.5
Industry	37.0	41.2
Services	51.2	49.3
Exports (% of total exports)		
Agricultural products		10.8
Fuels and mining products		35.3
Manufactures		51.9
FDI (Inward flows as % GDP)	1.7	1.0
ODA (% GNI)	0.2	0.2
GDP per capita (PPP, constant 2000 international $)	5 343	7 051
Poverty rate (% of pop. below $2/day)	2.0 [a]	..
Population (million inhabitants)	9.93	9.78
Urban population (%)	70.9	72.2

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental Priorities

The **2006 National Action Plan on the Rational Use of Natural Resources and Environmental Protection** (2006-2010) identifies the following main priorities:

1. Waste management
2. Protection of atmospheric air, ozone layer and climate
3. Protection of rational use of water resources
4. Protection of land and soils
5. Rational use of sub-soil resources
6. Preservation of biological and landscape diversity
7. Improvement of environmental legislation
8. Further development of economic instruments of environmental policy
9. Environmental monitoring
10. Education for environment

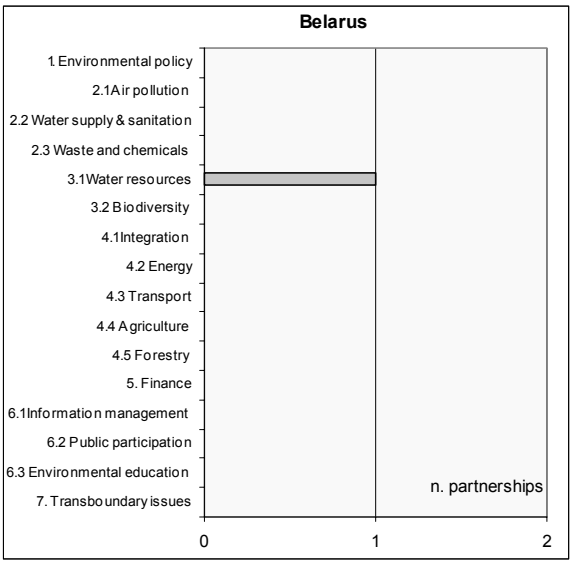
The **2004 National Strategy for Sustainable Socio-Economic Development** (2004-2020) identifies the following main priorities:

1. Improvement of economic instruments of environmental policy
2. Waste management
3. Water resources protection and management
4. Land protection, enhanced productivity and rational land use
5. Rational use of mineral resources and raw materials
6. Protection of forests and reforestation
7. Biodiversity conservation and biosafety
8. Air protection
9. Climate change mitigation
10. Ozone layer protection
11. Management of toxic chemicals (POPs)
12. Environmental Security (Emergency situation)

International Co-operation

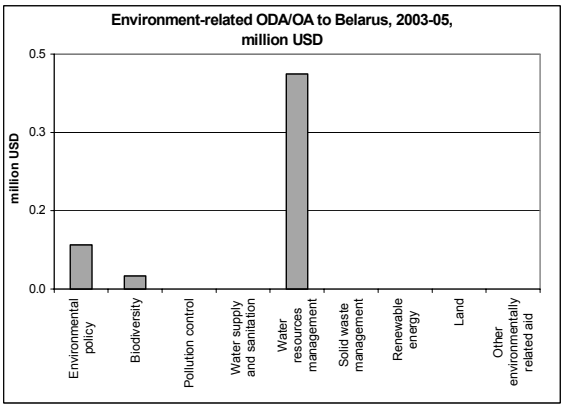
Main environmental cooperation partners of Belarus include GEF, the World Bank, UNDP, EC/TACIS, OSCE, Sweden (SEPA) and Germany (Bavaria Federal Ministry of Environment).

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation highlight

SOLID WASTE MANAGEMENT

The disposal of solid waste in rural areas has been a long standing problem in Belarus. The country had been cleaning up 20,000 illegal dumping sites each year at high budgetary cost. In 2003, a policy change was made – a network of mini-sites would be established for provisional storage of waste, and local authorities charged with defining the method of waste collection and transfer to the mini-sites. By the end of 2003, 6090 mini-fields and 2871 grounds for provisional waste storage had been opened. Financial transfers from the national environmental fund allowed the purchase of 9 bulldozers, 66 tractors, 394 sanitation cars and 32000 containers for the operation of the new services. By 2005, illegally disposed waste decreased from 0.7 to 0.4 million tonnes. In order to facilitate recycling of waste materials, 84 stations for sorting municipal waste were opened in 2005. This has allowed a reduction of 30-40% in waste volumes to be landfilled (extending the life of disposal sites), generated new jobs and reduced the operation costs of disposal sites by 4-6%.

Source: Ministry of Environment of Belarus

Policy Matrix

The following two pages summarise actions taken by the Government of Belarus that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(11) Report to Ramsar Convention
(12) EPR of the Republic of Belarus
(13) Report to Aarhus Convention
(14) ECOLEX Database
(15) Main text of this report (see thematic chapters for sources consulted)
(16) Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

BELARUS ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution	- 7 new air quality monitoring stations were established. - Air quality information centre established (6)	- PM10 standard introduced (5) - PM10 monitoring introduced (5) - 5 air protection norms and regulations developed (6) - Methodological work on EMEP inventories carried out (5)	- Previously developed fuel quality standards introduced (6) - EURO2/EURO3 fuel emissions standards introduced (6) -
Water Supply and Sanitation		-Clean Water programme approved (6)	-.
Waste and Chemicals		- Waste data system improved (5) - Waste separation system introduced (6)- Persistent organic pollutants strategy approved (6) - POPs-related project launched (5)	- Joint Decree of the MoE and the Ministry of Agriculture on pesticides management issued (4)
Water Resources		- Nr. of monitored water parameters monitored increased from 46 to 70 (standards cover 952 parameters) - 16 lakes included in surface waters monitoring programme	- Technical regulations on water abstraction and consumption and abstraction introduced for 145 industrial enterprises (6)
Biodiversity	- Inter-agency committee on Ramsar convention established (6) - 22 structures for managing protected areas established (6)	- Flora law approved (2)- Inventory of wetlands and Ramsar database created (1)	-Nr. of protected areas decreased from 1476 to 1433 due to consolidation at higher level of protection (6) - Protected are increased from 7.6% to 8.3% of territory (6)
Integration into key economic sectors	- National JI/CDM agency designated - Agriculture and environment working group established	- Kyoto Protocol ratified - Some 20 JI/CDM proposals prepared (6) - SEA pilot implemented (5) -Integration of environmental issues into national development strategies significantly improved	- Registration of ozone depleting substances mandated (6).
Cross-cutting	-MoE budget increased by 61% -Salaries of departemnt heads and senior specialists tripled - Inspectorates asked to focus on priority sectors - Inter-agency monitoring commission created (5)	-NEAPS for 2006-2010 and NSSD up to 2020 approved (6) -State programme of environmental monitoring for 2006-2010 approved (6) -Concept of Environmental Code of the Republic of Belarus approved (6) - Espoo convention ratified (5)	-Decree on natural resource extraction and pollutant discharge limits issued (4)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
- Charges for air pollutants (including SO2, nitrogen oxides and others) increased by 55% -Gas tariffs for households increased by 37% -Average power energy tariffs increased by 76% -Taxes on transport fuels increased 3-4 times		-Budget for energy efficiency programme was increased 6 times to 4,6 million lcu - Expenditures on urban public transport increased by 387% to 67 million lcu	**Air Pollution**
-Water tariffs for households increased 94% -Maximum water abstraction fee for utilities was increased by 70% -Water and wastewater levies reduced for users installing meters (6)		- Wastewater volume decreased by 60% -60 billion lcu invested in building 73 wastewater treatment plants with a capacity of 190k m3/day (2)	**Water Supply and Sanitation**
- Introduction of Expanded Producer Responsibility proposed (6)	- Recycling promoted through advertisements (6)	-Waste Disposal capacity in sanitary landfills increased by 16% to 30 K tons (43% for hazardous wastes). - Mini-landfills programme launched -- 795 rural municipal waste services and 95 sorting stations created (6) - 86% of stockpiled pesticides containing CO3 re-packaged (6)	**Waste and Chemicals**
			Water Resources
- Joint Order of the Ministry of natural Resource and Ministry of Finance on collection of fees for logging published (4) - Order on the responsibility and compensation of damage to public forests published (4)	- A system of voluntary certification of forest plantations created - Web-sites on biodiversity and biosafety developed (6)		**Biodiversity**
	- Timber certification promoted (5)		**Integration into key economic sectors**
-Nr. of environmental levies increased from 6 to 9 -Amount collected by environmental levies increased by 385% -Economic incentives to sustainable natural resource use introduced – including about 10 zero tax rates, 6 increasing and 2 decreasing coefficients to environmental tax rates (6)	- Environmental information hot lines set up in all regions (3) -Aarhus Centre established (6). - ESD/EE conceptual separation formalised (5)		**Cross-cutting**

Country Profile: GEORGIA

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	3 380	4 345
Annual GDP growth rate 2002-2005		8.7
Economic structure (as % of GDP)		
Agriculture	20.6	16.7
Industry	24.3	27.4
Services	55.1	55.9
Exports (% of total exports)		
Agricultural products		37.0
Fuels and mining products		20.3
Manufactures		38.7
FDI (Inward flows as % GDP)	4.9	7.0
ODA (% GNI)	9.0	6.1
GDP per capita (PPP, constant 2000 international $)	2 183	2 842
Poverty rate (% of pop. below $2/day)	25.8[a]	
Population (million inhabitants)	4.61	4.47
Urban population (%)	52.5	52.2

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental priorities

The current NEAP does not reflect Georgia's environmental priorities. A new NEAP is currently under development. Priorities of the Georgian **Ministry of Environment** for 2006-2007 are the following:

- Finalization of the Licensing and Permission System Reform
- Strengthening of Environmental Inspectorate
- Forest Management System Reform
- Replacement of existing Water Management System by Integrated River Basin Management System
- Development of Protected Areas System and Ecotourism
- Work out of the Waste Management Policy
- Institutional Strengthening of Center for Monitoring and Prognostication
- Institutional Strengthening of Spatial Informational Center
- Development of tools for "Debt-for-Environment Swap"

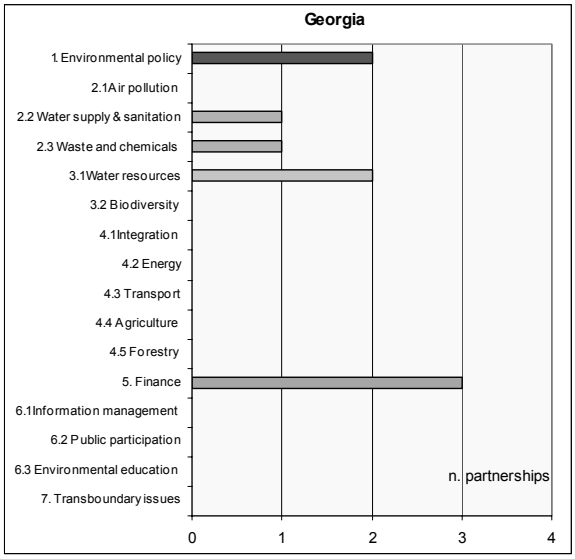
The **2000 Economic Development and Poverty Reduction Strategy** (EDPRS) identifies environment as one of the priorities to achieve the Strategy's wider objectives. It identifies 10 areas of environmental action:

1. Reform of environmental monitoring and enforcement systems
2. Elaboration of a National Strategy for Sustainable Development aligned with the EDPRS
3. Reform of economic instruments and environmental finance mechanisms
4. Introduction of Strategic Environmental Assessment
5. Improvement of environmental planning systems (including public participation and monitoring plan implementation)
6. Development of legislation for territorial-spatial development planning including protection and conservation of biodiversity and sustainable management of land resources (forest, water, minerals)
7. Set up of a modern waste management system
8. Reduction of land degradation, erosion, desalinisation and desertification of soil
9. Improvement of water quality and its accessibility
10. Clarification of rights and responsibilities of central, regional and local government bodies on environmental planning and implementation of environmental actions

International Co-operation

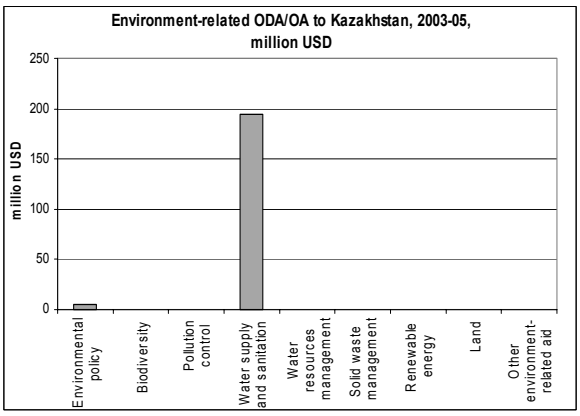
Georgia's main environmental co-operation partners include the European Commission, GEF, KfW, OSCE, USAID, the World Bank and the Governments of Germany, Japan and the Netherlands.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation highlight

PERMITTING AND LICENSING REFORM

Georgia is embarked in a drive for public administration reform. One major element of the reform is the simplification of administrative procedures. In June 2005, a licenses and permits law introduced the principles of "one stop shop" and "silence gives consent". Within this context, the Ministry of Environment has streamlined the environmental licensing/permitting system, going from 318 types of licenses/permits to 50 (see table). Equally important is the change in procedures. Under new legislation, use licenses are issued through actions, and can be divided, sold or inherited. This reduces the scope for corruption in the allocation of licenses and increases their economic value. The net effect is an increase in economic efficiency as well as an increase in income for the State.

	Before	After
Use licences	25	6
Activity licences	34	7
Permits	6	10
Activities under EIA permits	318	28
Total	382	50

Source: Ministry of Environment of Georgia

Policy Matrix

The following two pages summarise actions taken by the Government of Georgia that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(17)Report to Ramsar Convention
(18)Main text of this report (see thematic chapters for sources consulted)
(19)Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

GEORGIA ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution	- Air Protection Division incorporated into the Integrated Environmental Management Department within the Ministry (3) - Rural EMEP monitoring station rehabilitated (3)	- Development of the Action Plan and Programme for Sustainable Urban Transport launched (3)	
Water Supply and Sanitation			
Waste and Chemicals		- Inventory of chemicals carried out (3) - Development of strategy and national action plan regarding chemicals launched (3) - Waste management law developed (3)	- Permits on export and import of chemicals introduced (3)
Water Resources		- Concept of water resources basin management developed (3)	
Biodiversity		- Biodiversity strategy formulated (1) - PEEN pilot project carried out (2) - Management plan for Kolkheti protected area developed (1)	
Integration into key economic sectors	- Energy and environment working group established - Forestry and environment working group established - Environmental training for energy staff introduced- National JI/CDM agency designated	- Montreal Protocol Action Plan under implementation (3) - Wind energy potential mapped (2)	
Cross-cutting	- MoE budget multiplied by 40 - Salary for department heads and senior specialists multiplied by 13 - Inspectorate created (2) - Enforcement law passed (2)	-The effectiveness of environmental programmes is now assessed - Legal basis for self-monitoring established (2)	- Administrative fines for non-compliance increased (2)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
			Air Pollution
			Water Supply and Sanitation
	- New labelling rules for chemicals introduced (3)		**Waste and Chemicals**
			Water Resources
	-Public awareness action plan developed for Kolkheti wetlands (1)	- Funding for biodiversity agreed with BMZ, GEF, KfW, UNDP, UNEP and World Bank (3)	**Biodiversity**
	-Specialist dealing with environmental education appointed in MoE - Agricultural advice programmes piloted (2)		**Integration into key economic sectors**
	- Environmental compliance promoted through mass-media (2) - Aarhus centre established (3)		**Cross-cutting**

Country Profile: KAZAKHSTAN

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	22 796	29 875
Annual GDP growth rate 2002-2005		9.4
Economic structure (as % of GDP)		
Agriculture	8.6	6.8
Industry	38.6	39.5
Services	52.8	53.7
Exports (% of total exports)		
Agricultural products		2.9
Fuels and mining products		82.4
Manufactures		13.6
FDI (Inward flows as % GDP)	10.5	3.1
ODA (% GNI)	0.7	0.6
GDP per capita (PPP, constant 2000 international $)	5 636	7 617
Poverty rate (% of pop. below $2/day)	17.1[a]	
Population (million inhabitants)	14.86	15.15
Urban population (%)	56.7	57.3

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental priorities

The **2004-2015 Environmental Safety Concept** and the **2005-2007 Environment Protection Programme** identify environmental priorities under two pillars:

1. *Optimising the environmental management system* (legislation, planning at state and local level, enforcement, monitoring, inter-sectoral co-operation, economic instruments, social partnerships, environmental education)

2. *Reducing the environmental impacts of economic sectors* (climate change mitigation, biodiversity protection, environmental impact of military complex, environmental disaster zones, Caspian shelf, water efficiency, air pollution prevention, industrial and municipal waste management, assessment of health impacts of environmental degradation)

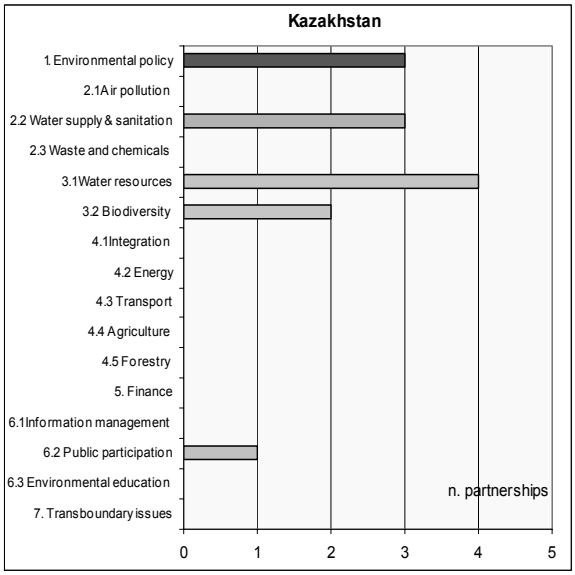
The **2006 Concept of Transition of the Republic of Kazakhstan to Sustainable Development for 2007-2024** sets the following priorities:

- Introduce trans-regional ecosystem principle of implementation of the sustainable development programmes for the regions of Kazakhstan;
- Set sustainable development targets for all the large industries and energy facilities and set the timeframe and mechanisms of shifting to the best available techniques;
- Introduce more efficient economic environmental protection mechanism, including with a view to promoting the cleaner production strategy;
- Develop alternative energy facilities;
- Use key provisions and mechanisms of the international treaties to mobilize funds to improve the environmental profile of the Kazakh industry ("green investment");
- Remove "historic pollution" from the country's territory, promote the waste management system.

International Co-operation

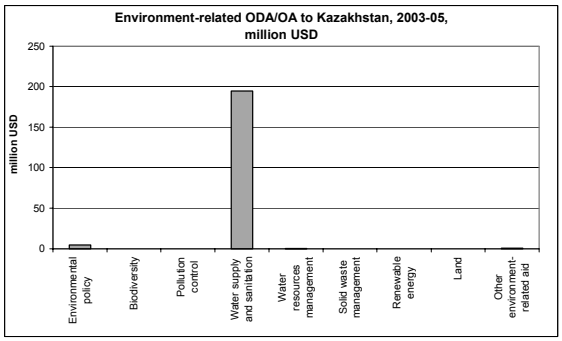
Kazakhstan's main environmental co-operation partners are the GEF, UNDP, UNEP, the World Bank, the Asian Development Bank and UNECE.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation highlight

SUSTAINABLE LAND MANAGEMENT

One of the most important projects in the field of environmental protection being carried out in Kazakhstan aims to transform degraded lands into productive forage lands in an area covering 1 million hectares in Karaganda oblast. The project will be implemented over 2003-2008 at a cost of USD 9.7 million (of which GEF and other donor grants make up USD 5.3 million). Early activities include planting of different crops in spring and autumn seasons, demonstration experiments on improved technologies of restoration of degraded arable lands, use of renewable (wind) energy for powering cattle winter ranches, support for the development of nurseries and milk collection schemes, and research on carbon storage potential.

Source: Ministry of Environment of Kazakhstan

Policy Matrix

The following two pages summarise actions taken by the Government of Kazakhstan that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(20)Website of Ministry of Agriculture
(21)CAREC
(22)Report to Caspian Environment Programme
(23)IWRM website (UNDP Kazakhstan)
(24)UNECE
(25)Report to Convention on Biological Diversity
(26)Website of Ministry of Environment
(27)Main text of this report (see thematic chapters for sources consulted

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

KAZAKHSTAN ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution		- Long-range transboundary air pollution workshops hosted (8)	- Leaded petrol phased out (8)
Water Supply and Sanitation		- Access to drinking water analysed (2)	- Water quality standards reformed (1)
Waste and Chemicals		- Preliminary inventories of persistent organic pollutants carried out (2) - Basel Convention accessed (8)	
Water Resources	- Mechanisms for cross-sectoral coordination created for 4 river basins (out of 8) - Transboundary Chu-Talas river basin commission created (5) - 2 boats made available for Caspian monitoring (3)	- Water Code passed - National IWRM plan ready/well-advanced (8) - Management plan developed for 2 river basins (out of 8) - 2004-2010 Aral Sea programme developed - Caspian convention ratified	
Biodiversity	- Nr of staff working on protected areas increased 46% to 2,630	- Forest and Land Codes approved - 2007-2009 programme on protected areas approved (1) -Programs on endangered species and forests approved -Programme for development of GIS-based ecological network approved	- Nr of protected areas increased from 26 to 86 - Area under protection increased 220% to 21 million has
Integration into key economic sectors	- MoE staff working on integration issues increased from 5 to 8	-2 new JI/CDM project proposals developed	
Cross-cutting	- National sustainable development council created - MoE budget increased 173% to 4.8 billion lcu - Salary of department heads and senior specialists increased 27% and 58% respectively - Inspectorate created (8) - Inter-agency body on ESD created (8)	- Environmental Code passed (8) - 2004-2015 Environment Action Plan approved (7) - Legal basis for self-monitoring established (8)	- Reform of environmental quality standards started (8) - Permitting reform started (8)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
-Gas tariff for households increased 75% to 14000 lcu/m3 -Electricity tariffs for agricultural users increased 43% to 7.6 lcu/kwh		- Work on clean coal technologies launched (8)	**Air Pollution**
- Over 5% of population now served by utilities under performance-based contracts (8)		-Expenditure of 10 billion lcu in 2006 allocated for 99 water systems (4)	**Water Supply and Sanitation**
		-11 old oil wells closed down at a cost of USD 5 million (2)	**Waste and Chemicals**
-Maximum water tariffs for agricultural users increased 134% to 0.1 lcu/m3	-NGOs involved in the creation of 5 river basin councils (4) - Water resources awareness campaign carried out (8)	-Funding for fish resources research and protection programme increased 20 times	**Water Resources**
	- Biodiversity awareness programmed carried out (8)	-Expenditures in protected area management multiplied by 6 to 1.6 billion lcu	**Biodiversity**
			Integration into key economic sectors
-Amount collected through environmental levies increased 224% to 25 billion lcu -Law on environmental liability and insurance approved (6)	-NGO support program approved - Public advisory board with NGO participation created (8) -New legislation is now subjected to public hearings -Cleaner production advice and information centre set up (2) -ESD textbook developed and approved in Russian and national languages (2) -Public participation principle included in Forest, Water and Environmental Codes - Performance rating and information disclosure scheme introduced (8)		**Cross-cutting**

Country Profile: KYRGYZ REPUBLIC

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	1 442	1 642
Annual GDP growth rate 2002-2005		4.4
Economic structure (as % of GDP)		
Agriculture	37.7	34.1
Industry	23.3	20.9
Services	39.0	45.0
Exports (% of total exports)		
Agricultural products		19.5
Fuels and mining products		15.5
Manufactures		27.5
FDI (Inward flows as % GDP)	0.3	1.9
ODA (% GNI)	11.5	10.5
GDP per capita (PPP, constant 2000 international $)	1 574	1 730
Poverty rate (% of pop. below $2/day)	23.3[a]	
Population (million inhabitants)	4.99	5.16
Urban population (%)	35.6	35.8

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental Priorities

A new Environmental Safety Concept is currently being drafted and should be adopted in 2007. Meanwhile, the following environmental priorities identified in the **1997 Environmental Safety Concept** are still valid:

- Atmosphere
- Water resources
- Lands and soil resources
- Biodiversity
- Hazardous waste management
- Monitoring
- Environmental education

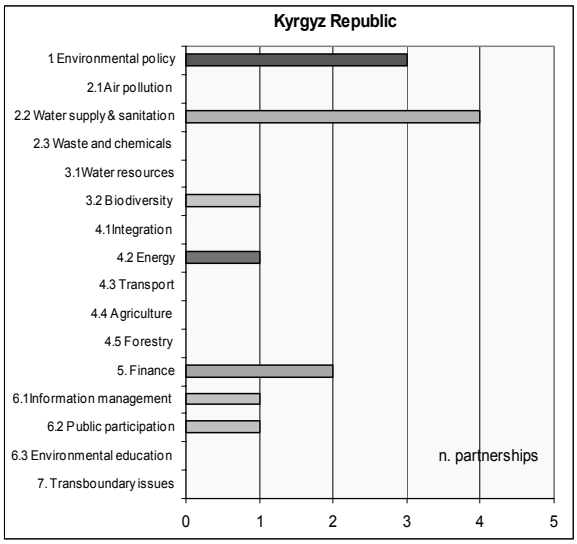
The **2006 Development Strategy for 2006-2010** identifies environmental safety as one of the priority areas, which can be achieved through the following priority actions:

- Strengthening environmental policies and regulatory and legal basis including economic instruments
- Monitoring of the state of environment and rational nature use
- Simplifying the permitting system for nature use
- Strengthening environmental enforcement
- Setting up a network of protected areas
- Conservation of biodiversity and reforestation
- Rehabilitation/Restoration of ecosystems and prevention of their degradation.

International Co-operation

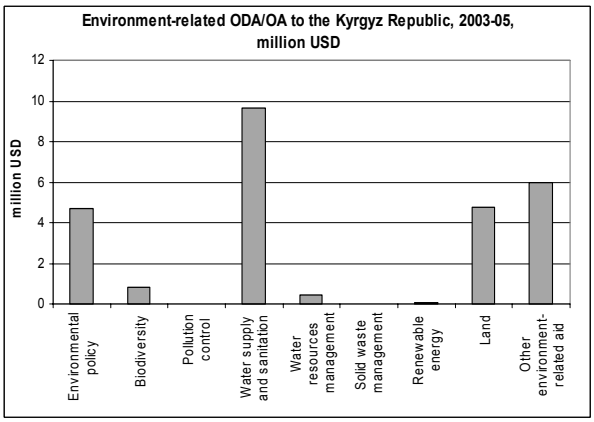
The Kyrgyz Republic's main environmental cooperation partners are Switzerland, GEF, TACIS, World Bank, Asian Development Bank, UNEP and UNDP.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation Highlight

BIODIVERSITY CONSERVATION

Biodiversity conservation is one of the environmental priorities of the Kyrgyz Republic. Since 2003, the legislative framework for biodiversity protection has been strengthened with the adoption of strategic documents and laws on forestry, biosafety and protected areas. The extension of the national system of protected areas is expected to grow from 4.6% to 6% of national territory. Examples of recent new protected areas include the Kulunatin reserve (24,500 hectares) and the Karabuurin reserve (59,000 hectares).

Additional measures to protect biodiversity include the introduction of a three-year moratorium on cutting down, processing and trading especially valuable species and ecosystems; allocation of finance from the Regional Fund for Environmental Protection to nature reserves starting in 2006; and the approval of the map of specially protected natural areas of the Kyrgyz Republic.

Source: Ministry of Environment of the Kyrgyz Republic

Policy Matrix

The following two pages summarise actions taken by the Government of the Kyrgyz Republic that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(28)Report to the Convention on Biological Diversity
(29)Website of the Ministry of Environment
(30)Report to the Ramsar Convention
(31)Main text of this report (see thematic chapters for sources consulted
(32)Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

KYRGYZ REPUBLIC ENVIRON

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution			- Annual clean air campaigns conducted annually by the police and the environmental authorities (5) - Leaded petrol phased out
Water Supply and Sanitation		- Draft strategy for rural WSS reform subjected to environmental expert assessment (5)	
Waste and Chemicals		- IAEA Convention on safe handling of spent fuel and radioactive waste management ratified (5) - Stockholm Convention ratified (5) - Waste management strategy developed - Chemical management strategy developed	
Water Resources		- Since 2004, annual monitoring of Chu and Talas rivers carried out in cooperation with Kazakhstan (5) - Assessment of the condition of Lake Son-Kul undertaken (3) - Roadmap to IWRM developed (4)	
Biodiversity	- Desertification centre created under the Ministry of Agriculture (1) - Inter-ministerial biodiversity council established (1)	- Biosafety protocol ratified; biosafety law sent to Parliament (5) - CITES convention ratified (4) - Inventory of Issyk-kul wetlands carried out (1) - GIS-based layout of protected areas network developed (1)	- Area under protection increased 2% to 1 million hectares
Integration into key economic sectors	- Transport and environment working group established - Forestry and environment working group established - National JI/CDM agency designated	- National committee on climate change adaptation established (5) - New inventory of GHG emissions carried out (5) - New energy strategy subjected to environmental expert assessment (5) - Forest Sector Development Strategy up to 2025, National Action Plan for the development of the forest sector; and National Forest Programme for 2005-2015 approved (5) - Laws on the protection of the ozone layer and on GHG emissions passed - National framework programme on sustainable management of land resources approved (5)	
Cross-cutting	- Nominal salary of department heads and senior specialists increased 16%	-Sustainable development potential of environmental resources assessed (5) - Funding needs concerning MDG 7 (Environmental Sustainability) assessed (5) - Environmental Code drafted (5)	

MENTAL POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
-Gas tariffs for households increased 15% to 3.1 lcu/m3 -Electricity tariffs increased 44% for households and 20% for industrial users -Taxes on transport fuels **decreased** 74%		-Budget of energy efficiency programme increased by 56% to 4.2 million lcu	**Air Pollution**
	- Integrated hygiene promotion program developed in 200 villages (5)		**Water Supply and Sanitation**
- Private sector participation in MSW management piloted (5)	- Brochures and booklets published on a regular basis, "Clean city" TV programme broadcast regularly - Books collecting regulatory acts on MSWM published (5)	-Expenditures for cleaning up contaminated land reached 440K lcu - Landfill upgraded (4)	**Waste and Chemicals**
- 433 water users' associations established, irrigating 699,000 hectares (68% of the total irrigated area); 354 associations assumed ownership of on-farm networks (5)		- Work on rehabilitation and modernisation of irrigation infrastructure started under World Bank project (5) - In 2005, state funding for drainage and irrigation systems increased by 17%, reaching 58 million lcu (5) - USD 28 million invested in water resources management through a World Bank project and USD 4.7 million co-financed by the Government (5)	**Water Resources**
- Over 17,000 hectares of forested land transferred to community based management (5)	-Regulation on public environmental inspectors approved (2)	- Funding of protected areas from the Conservation Fund reinstated in 2005 (5) - Nominal spending on protected areas management increased by 3% to 5.8 million lcu	**Biodiversity**
	- Customs officials and private sector staff trained on ODS by Ozone Centre (5)		**Integration into key economic sectors**
- Guidelines for the calculation of pollution charges adopted **-** Nominal amount collected through environmental levies increased 3% to 21 million lcu	- NGO Advisory Council to the Ministry of Environment created (5) - Environmental awareness-raising materials reflecting local conditions and training programme for teachers developed (5) - MoE website created - SoE report disseminated electronically (4) - Consultations on draft regulations made mandatory (4) - EE/ESD multi-stakeholder body established (4) - Inter-agency body on ESD created (4)	- Nr of environmental funds reduced from 10 to 8	**Cross-cutting**

Country Profile: MOLDOVA

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	1 474	1 804
Annual GDP growth rate 2002-2005		7.0
Economic structure (as % of GDP)		
Agriculture	24.1	21.3
Industry	23.2	24.2
Services	52.7	54.5
Exports (% of total exports)		
Agricultural products		58.8
Fuels and mining products		2.4
Manufactures		38.8
FDI (Inward flows as % GDP)	8.0	7.7
ODA (% GNI)	7.5	3.9
GDP per capita (PPP, constant 2000 international $)	1 462	1 707
Poverty rate (% of pop. below $2/day)	64.1[a]	
Population (million inhabitants)	4.25	4.21
Urban population (%)	46.3	46.7

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Note: Moldovan authorities have reported some discrepancies in the data. According to the national sources, the corrected figures for the following variables are:

- FDI inflows as % of GDP: 5.1 (2002) and 6.8 (2005)
- GDP per capita (PPP): $ 2 261 (2005)
- Poverty rate (% population below 2 $/day, 2002 PPP): 39.8 (2002) and 27.6 (2005)

Environmental Priorities

Current environmental policy priorities are reflected in several **strategic and sectoral planning documents** as well as the 2005 EU Action Plan for Moldova. They include the following:

- Approximation of the national legal and regulatory frameworks on environment and natural resources management to the European Directives
- Prevention and reduction of degradation of natural resources and improvement of the efficiency of their utilization
- Maintenance of environmental quality as a factor of health and quality of life
- Protection of water resources
- Improvement of the waste management scheme, lower the impact and load of toxic substances and waste
- Protection and expansion of the forest fund, conservation of the biodiversity
- Development of an efficient monitoring system, prevention of, and damage compensation for, man-made accidents and calamities
- Raising environmental awareness of the population; facilitating public access to environmental information and public participation in decision-making.

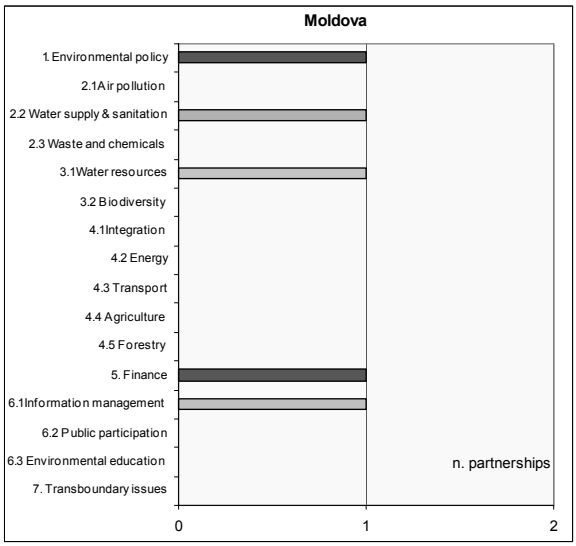
The **2003 Economic Growth and Poverty Reduction Strategy** identifies the following environmental priority areas:

- Reducing pollution of water resources
- Improving waste management and decreasing the quantity of toxic substances and waste
- Protection and increase of forested areas
- Protection and increase of areas of natural reserves
- Decreasing the rates of soil degradation
- Strengthening the monitoring system of natural disasters, and providing information and education to the public
- Strengthening administrative and financial mechanisms for environmental protection
- Strengthening environmental education
- Public access to the environmental information and decision-making

International Co-operation

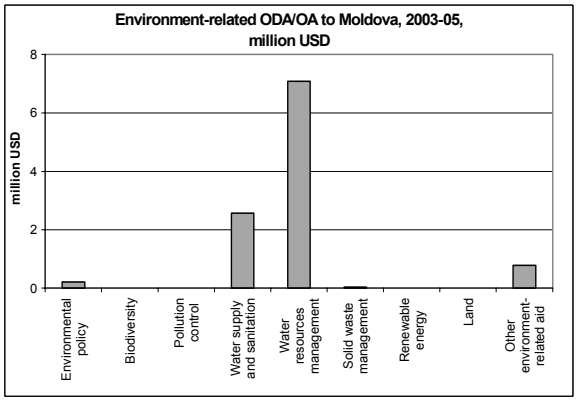
Main bilateral environmental cooperation partners are Czech Republic, Denmark, Germany, Latvia, Poland and Romania. The multilateral donors include GEF, EC/TACIS, UNDP and UNEP.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation Highlight

APROXIMATION TO EU LEGISLATION

One of Moldova's policy priorities is EU accession. In this context, approximation with EU environmental legislation is both a major challenge and an important priority for the Ministry of Environment. Within its limited capacity (only 25 staff), the Ministry of Environment of Moldova is making great efforts to fulfil this madate. The Ministry has mobilised support from several partners (Latvia, TACIS, OECD/EAP Task Force) to build their capacity, harmonise national legislation and approximate water quality standards. As a result, current legislation has been analysed, a first draft Plan of Actions to Approximate to the European Legislation has been prepared and revised, and seven "approximation sub-plans" developed.

Source: Ministry of Environment of Moldova

Policy Matrix

The following two pages summarise actions taken by the Government of Moldova that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(33)REC Moldova
(34)Main text of this report (see thematic chapters for sources consulted
(35)Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

MOLDOVA ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution	- 4 monitoring stations (including one for transboundary air pollution) created or re-established (3)		- Leaded petrol phased out (2)
Water Supply and Sanitation		- Goals and objectives defined in MDG report, PRSP, "Moldovan Village" programme and WSS programme (3)	
Waste and Chemicals	- Office for the management of POPs projects created (3) - Courses organized for the customs officers and environmental inspectors (3)	- POPs strategy adopted and implementation plan submitted (3) - Stockholm Convention, Rotterdam Convention, and Montreal and Pekin amendments to Montreal Protocol ratified (3) - Law on industrial and municipal waste amended (3) - National network of laboratory control over hazardous substances regulated (3)	- Regulations on control of transboundary movement of hazardous waste streamlined (3) - Permitting for waste management improved (3) - List of products subject to mandatory certification approved (2004) - Regulation on pesticides and fertilisers approved (3) - Permitting for ODS improved (3)
Water Resources	- 4 automatic monitoring stations set up to monitor surface water quality at the transboundary Prut and Dniester Rivers (3)	-Nr of surface water quality parameters monitored increased from 46 to 49 -2003-2010 Water Resources National Policy Concept developed (3) - Water and Health Protocol ratified (2)	
Biodiversity	- National Commission on Biosafety created (1) - Biosafety research centre established (3) - Customs officers trained on CITES Convention requirements (3)	- High Nature Value farmland project under development (2)	
Integration into key economic sectors	-National commission on UNFCCC and Kyoto implementation created (3) -Nr of staff in the MoE working on integration issues increased from 4 to 6 - Commission to coordinate implementation of concept of organic agriculture established (3)	- 6 JI/CDM project proposals developed - 2003-2020 Programme of Reforestation and Afforestation of the Forest Fund Land approved (3) - Sustainable Tourism Strategy approved (1) - Concept of organic agriculture developed (3)	
Cross-cutting	-Nr of staff in the MoE **decreased** 35% to 25 -Salary of department head and senior specialists increased by 52% and 76%, respectively -Inspectorate reorganised -National Commission on Environment and Health created (3) -Interaction of public authorities in the development of normative documents regulated (3)		- Reform of environmental quality standards started (2)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
-Gas tariffs for households doubled to 2.20 lcu/kwh	- "City without Car Action" organised annually (3) - "Clean Air Action" jointly organised annually by the MoE and the Ministry of Interior (3)		**Air Pollution**
- Tariff setting methodology for WSS and wastewater treatment improved (3) - Nominal water abstraction fee for utilities increased 180% to 0.5 lcu/m3		- Public domestic and foreign investment in the water supply and sanitation sector increased (3)	**Water Supply and Sanitation**
	- Mass-media campaigns on ozone layer protection, waste management and POPs carried out (3)		**Waste and Chemicals**
			Water Resources
- Tax on import/export of animals created (3)	- Awareness raising materials published (3)		**Biodiversity**
	- Certification of organic agriculture regulated (3) - Agricultural advice programmes piloted (2) - IPM programmes expanded (2)		**Integration into key economic sectors**
- Methodologies for assessing damage of different environmental media approved (3)	- Public involved in developing strategic papers (3) - Awareness-raising materials published, mass-media campaigns carried out, and environmental contests organised (3) - EE/ESD multi-stakeholder body established (2) - Inter-agency body on ESD created (2)	-Nr of environmental funds reduced from 7 to 4 -Share of proceedings from environmental taxes allocated for environmental programmes increased 4-fold since 2003 (3) -Revenues of the national environmental fund increased 3-fold since 2002; and 2-fold since 2003 (3)	**Cross-cutting**

Country Profile:
RUSSIAN FEDERATION

Socio-Economic Indicators

	2002	2005
GDP (million, 2000 USD)	285 880	349 853
Annual GDP growth rate 2002-2005		7.0
Economic structure (as % of GDP)		
Agriculture	5.8	5.6
Industry	34.7	38.0
Services	59.5	56.4
Exports (as % of total exports)		
Agricultural products		6.1
Fuels and mining products		67.7
Manufactures		23.2
FDI (Inward flows as % GDP)	1.0	1.9
ODA (% GNI)	0.4	0.2
GDP per capita (PPP, constant 2000 international $)	7 809	9 747
Poverty rate (% of pop. below $2/day)	13.5[a]	
Population (million inhabitants)	145.30	143.15
Urban population (%)	73.2	73.0

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental Priorities

The **2002 Environmental Doctrine of the Russian Federation** identifies the following priority directions in the field of environmental protection:

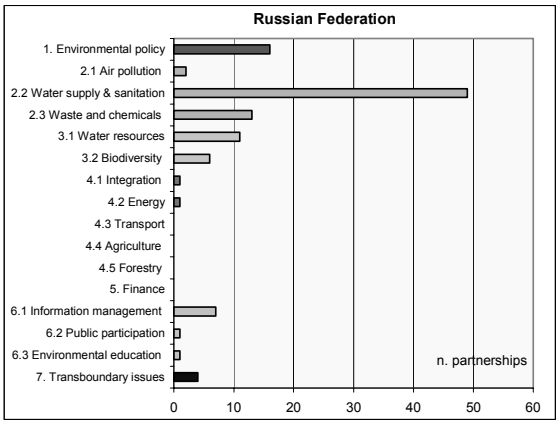
- Sustainable use of (renewable and non-renewable) natural resources
- Pollution reduction and resource saving
- Biodiversity conservation
- Ensuring environmental safety of hazardous activities and in emergencies
- Improvement of the quality of life and public health by improving environmental quality
- Minimization of environmental risks caused by natural and technological disasters

The **2006 Programme of Socio-economic Development of the Russian Federation for the medium-term period (2006 - 2008)** includes the following priorities in the field of environmental protection:

- Reform of environmental regulation (legal basis for protected areas, environmental quality standards, permitting system, environmental impact assessment, compliance, fines, support for environmental projects, mechanisms to promote resource efficiency and use of renewable energy)
- Management of industrial waste
- Clean-up of contaminated land
- Introduction of economic instruments (including damage compensation)

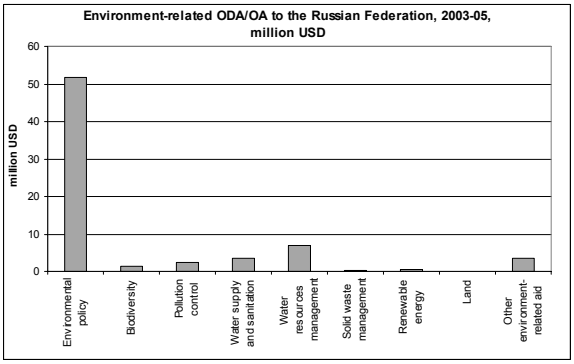
International Co-operation

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation Highlight

WATER RESOURCES MANAGEMENT

The new Water Code of the Russian Federation came into force on January 2007. While implementing regulations are still under development, the Water Code introduces a number of important innovations. It establishes the legal basis for river basin management. It introduces private property rights for water bodies (with the exception of drinking water sources) and includes the right to trade water. It substitutes broad agreements (that include water quality considerations) for previous narrow licenses, securing the rights of the agreement-holders and introducing an agreement-related water payment. The new Water Code also introduces a high degree of decentralisation in the management of water resources in the Russian Federation and will help to achieve the financial sustainability of the water sector. In 2004, sub-federal entities collected 9 billion roubles in water payments, but only 20% were returned to the water sector. After the introduction of a new water tax, 13 billion roubles were collected in water payments in 2006, all of them returned to the sector.

Source: Ministry of Natural Resources of the Russian Federation

Policy Matrix

The following two pages summarise actions taken by the Government of the Russian Federation that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(36)Report to the Ramsar Convention
(37)UNECE
(38)Main text of this report (see thematic chapters for sources consulted
(39)Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

RUSSIAN FEDERATION ENVI

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution	-10 new air quality monitoring stations installed	- PM10 monitoring introduced (3)	- Vehicle emission standards developed and implemented (1) - Leaded petrol banned (3) - EURO II standard introduced (3)
Water Supply and Sanitation			
Waste and Chemicals		-Cost of implementing the existing chemicals management strategy calculated - Waste data system improved (3)	- Hazardous waste licensing scheme introduced (4)
Water Resources	- Basin principle for WRM re-introduced (4)	-Management plans for Pskovsko lowlands and Selenga delta formulated - New Water Code passed (4) - RF/Belarus/Lithuania cooperation in the Neman River basin agreed (4) - Caspian Convention ratified (3)	
Biodiversity		- Work on biodiversity indicators started (3) - PEEN pilot project carried out - Work on Invasive Alien Species started (3)	- 59k-hectares “Kologrivsky Les” reserve established (4)
Integration into key economic sectors	- Nr of staff working on integration issues in the Ministry of Natural Resources increased from 14 to 22	- GHG emissions inventory established (4) - Kyoto Protocol ratified and implementation plan adopted (4)	
Cross-cutting		-Action Plan on Implementation of Environmental Doctrine 2003-2005 approved (1) - Environmental policy goals and objectives set in 2006-2008 Programme for Social and Economic Development (4) - Legal basis for self-monitoring established (3)	- Reform of environmental quality standards started (3) - Administrative fines increased (3)

RONMENTAL POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
	-Gas tariffs for households increased 82% to 0.9 lcu/m3 -Average electricity tariffs increased 32%		**Air Pollution**
- Water tariff-setting framework reformed (3)			**Water Supply and Sanitation**
			Waste and Chemicals
-Water tariffs for industrial users increased 71% to 0.33 lcu/m3			**Water Resources**
	-E-mailing list to inform on wetland conservation established (1)		**Biodiversity**
	- Agricultural advice programmes piloted (3) - Timber certification promoted (3)		**Integration into key economic sectors**
-Amount collected through environmental levies increased 152% to 13 billion lcu - Penalties introduced for failure to pay negative environmental impact charges (4)	- Performance rating and disclosure scheme introduced (3) - Compliance promoted through mass media (3) - Public council with NGO/public representation created at the Ministry on Natural Resources - Public access to information on environmental legislation provided through websites, databases and legal information centres (4) - Environmental Protection Day held annually (4) - Preparation of 11 ISO14000 standards launched (4) - ESD standard developed (3)		**Cross-cutting**

Country Profile: TAJIKISTAN

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	1 178	1 544
Annual GDP growth rate 2002-2005		9.1
Economic structure (as % of GDP)		
Agriculture	24.7	22.0
Industry	39.4	36.1
Services	35.9	41.9
Exports (% of total exports)		
Agricultural products		14.4
Fuels and mining products		59.3
Manufactures		11.3
FDI (Inward flows as % GDP)	3.0	2.4
ODA (% GNI)	14.1	11.4
GDP per capita (PPP, constant 2000 international $)	934	1 173
Poverty rate (% of pop. below $2/day)	42.5[a]	
Population (million inhabitants)	6.29	6.51
Urban population (%)	25.4	24.7

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

Environmental Priorities

The **Ministry of Environment** identifies the following priorities:

- Agricultural land degradation
- Waste management, including industrial waste
- Biodiversity conservation
- Water

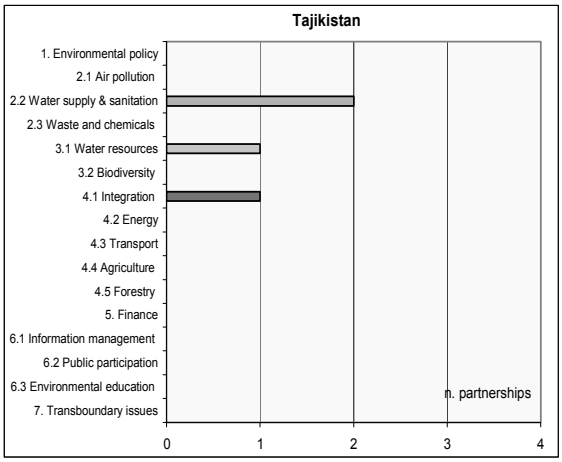
The **2006 Poverty Reduction Strategy (2006-2015)** identifies six environmental priorities:

- Strengthen the institutional capacity in the field of environmental management;
- Mitigate the consequences of natural disasters by means of preventive measures;
- Reduce soil degradation;
- Improve waste management and storage facilities;
- Protect and manage biodiversity;
- Improve water resources management.

International Co-operation

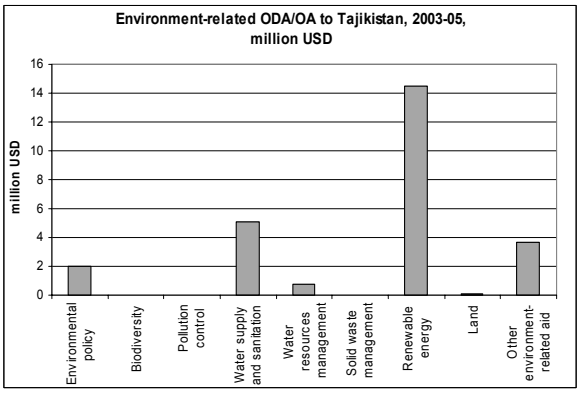
Tajikistan's main environmental cooperation partners are Switzerland, Norway, Germany, Japan, UNDP, UNEP, Asian Development Bank, World Bank.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Policy Matrix

The following two pages summarise actions taken by the Government of Tajikistan that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(40) Report to the Convention on Biological Diversity
(41) Website of the Ministry of Environment
(42) Main text of this report (see thematic chapters for sources consulted
(43) Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

TAJIKISTAN ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution	-5 new air pollution monitoring stations installed	-Air pollution strategy/action plan formulated and its cost calculated	-Energy and transport investments now regularly subjected to environmental assessment
Water Supply and Sanitation			
Waste and Chemicals		-Chemicals management strategy/ action plan formulated -Inventory of persistent organic pollutants created	
Water Resources	-Nr of river basins with early warning systems increased from 7 to 8	-IWRM roadmap developed (3)	
Biodiversity	-Nr of staff working in managing protected areas tripled, from 36 to 104 -Protected areas management agency created (1)	- Biosafety Protocol ratified - Biosafety Law approved (2)	-Area under protection increased by 7% to 3.1 million has (1 new protected area designated)
Integration into key economic sectors	-Energy and Forestry ministries staff trained on environmental management -Nr of staff working on integration issues increased from 4 to 9	- Energy, transport and agricultural strategies now include environmental targets - Energy ministry provided input to environmental strategy -Energy and transport strategies underwent environmental assessment -Programme to develop renewable energy approved -6 JI/CDM project proposals developed	-Forestry use decisions now subjected to environmental assessment
Cross-cutting	-State Committees on Forests and Nature Protection merged -Salary of department heads and senior specialists increased 40% and 60% respectively -MoE budget increased 160% to 5.4 million lcu	-Treatment of environmental issues in development sectoral plans and programmes improved significantly -New NEAP approved (4)	

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
-Pollution charge for SO2 increased 25% to 0.03 lcu/ton -Gas tariff for households increased 50% to 0.33 lcu/m3 -Average electricity tariffs increased 133% to 1.6 lcu/kwh	-Staff from agriculture energy ministry trained on environmental issues		**Air Pollution**
- WSS metering improved (3)			**Water Supply and Sanitation**
	-System of organic agriculture certification created	-Construction of 2 waste recycling facilities launched	**Waste and Chemicals**
	-Mechanism to allow public participation in water resources management at national level created		**Water Resources**
-Forest pest and fire management functions partly delegated/outsourced to private sector			**Biodiversity**
	-Agricultural extension workers trained on agrochemicals management		**Integration into key economic sectors**
-Amount collected through environmental levies increased 63% to 2.2 million lcu -Amount managed by environmental fund increased 93% to 2.7 million lcu	-Training programs on public participation for MoE staff established -Public participation now regulated in environmental assessment legislation -National environmental education centre created (2)		**Cross-cutting**

Country Profile: TURKMENISTAN

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)[a]	..	..
Annual GDP growth rate 2002-2005:		13.8
Economic structure (as % of GDP)		
Agriculture	22.0	21.0
Industry	42.4	44.6
Services	35.6	34.4
Exports (% of total exports)		
Agricultural products		10.2
Fuels and mining products		81.4
Manufactures		6.9
FDI (Inward flows as % GDP)	1.1	0.4
ODA (% GNI)	0.7	0.3
GDP per capita (PPP constant 2000 international $)	..	..
Poverty rate (% of pop. below $2/day)	..	
Population (million inhabitants)	4.6	4.8
Urban population (%)	45.5	46.2

a) Data not available in constant terms, GDP in current terms amounts to million USD 8 700 (2002) and 17 144 (2005).

Source: UNCTAD, World Bank, WTO

Environmental Priorities

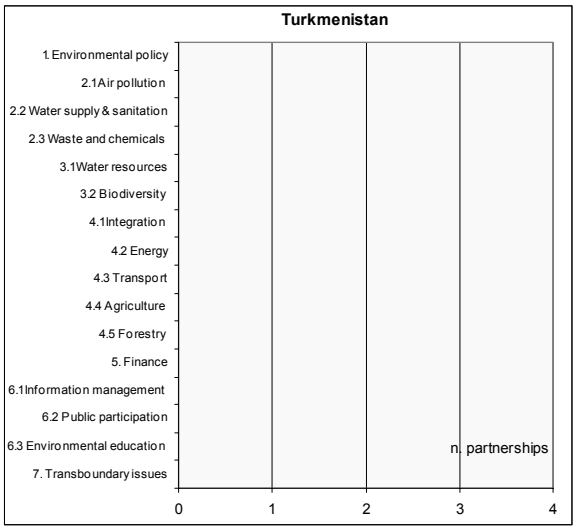
The **2002 National Environmental Action Plan** until 2010 and **the National Programme on the Strategy of Economic, Political, and Cultural Development of Turkmenistan until 2020** identify the following environmental priorities:

- Water resources (irrigation-induced shortages and pollution of surface and ground waters)
- Land resources
- Air pollution and depletion of the ozone layer
- Industrial pollution from the oil and gas and energy sectors
- Biodiversity conservation
- Protection of natural and cultural heritage
- Issues of degradation of environmental media in Turkmenistan's Aral Sea area.

International Co-operation

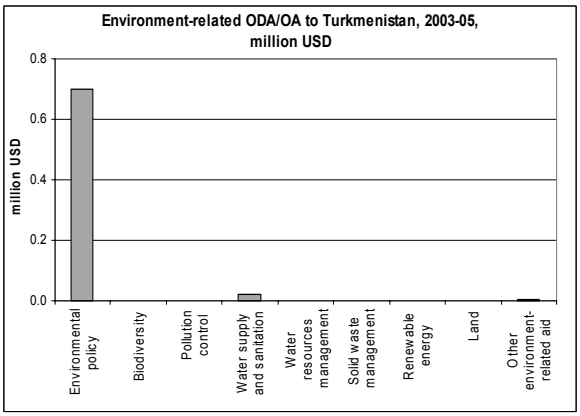
Turkmenistan's main environmental cooperation partners include GEF, UNEP, UNDP, WWF, TACIS, GTZ, Asian Development Bank.

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Implementation Highlight

In order to reduce the environmental impacts of the oil production industry on the Caspian Sea, and in the framework for the NEAP to 2010, the Government of Turkmenistan has started to work on the greening of the oil production sector. Activities include investments in water desalination, water recycling, sewerage and wastewater treatment infrastructure, and research on the ecological restoration of Soimonova Bay. They also include the contracting of the Irish company Emerol to provide environmental management and remediation services in exchange for recovered oil product in the Turkmenbashi Refinery. As of late 2006, the Emerol agreement had prevented the discharge of 20,000 tons of oil waste to the Caspian Sea. In addition, a wastewater reservoir containing 16 million cubic meters of liquid waste will be removed from the coastal city of Turkmenbashi.

Source: Ministry of Environment of Turkmenistan

Policy Matrix

The following two pages summarise actions taken by the Government of Turkmenistan that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(44)Main text of this report (see thematic chapters for sources consulted

(45)Additional information provided by the Ministry of Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

TURKMENISTAN ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution			- New regulation on air pollution permits approved (2)
Water Supply and Sanitation			
Waste and Chemicals			
Water Resources		- Caspian convention signed (1) - Water Code passed (2)	
Biodiversity		- Regulation on National Parks drafted (2)	
Integration into key economic sectors		- Law on forest fires passed (42 - 3 JI/CDM project proposals developed	
Cross-cutting	-Salary of department heads and senior specialists increased 176% - National Centre NEAP Implementation set up (2)	- Methodology for ensuring economic efficiency of environmental activities drafted (2) - Ashgabat Framework Convention on Environmental Protection for the Sustainable Development of Central Asia signed (2)	

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
			Air Pollution
		- Investment in the reconstruction of the sanitation system of Ashgabat and its suburbs undertaken (2) - Drinking water plants built in several velayats/oblasts (2)	**Water Supply and Sanitation**
		-Capacity for disposal of hazardous waste in sanitary landfills increased from 100 to 500 tons/year	**Waste and Chemicals**
		- Turkmen lake “Dostluk” water reservoir built (2)	**Water Resources**
		-Expenditures in managing protected areas increased 138% to 13 billion lcu	**Biodiversity**
		- Environmental management of Turkmenbashi refinery upgraded (1) - Integrated pest management programmes expanded (1)	**Integration into key economic sectors**
- Amount collected through environmental levies increased 3% in nominal terms to 313 million lcu	- TV programme on environment showed weekly on state television (2)		**Cross-cutting**

Country Profile: UKRAINE

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	35 913	45 188
Annual GDP growth rate 2002-2005		8.0
Economic structure (as % of GDP)		
Agriculture	14.6	10.8
Industry	34.5	34.2
Services	50.8	55.0
Exports (% of total exports)		
Agricultural products		13.8
Fuels and mining products		16.8
Manufactures		68.4
FDI (Inward flows as % GDP)	1.6	9.4
ODA (% GNI)	1.0	0.5
GDP per capita (PPP constant 2000 international $)	4 736	6 086
Poverty rate (% of pop. below $2/day)	5.0[a]	
Population (million inhabitants)	48.2	47.1
Urban population (%)	67.4	67.8

a) or closest available year. Data based on PPP, constant 1993 international $.

Source: UNCTAD, World Bank, WTO

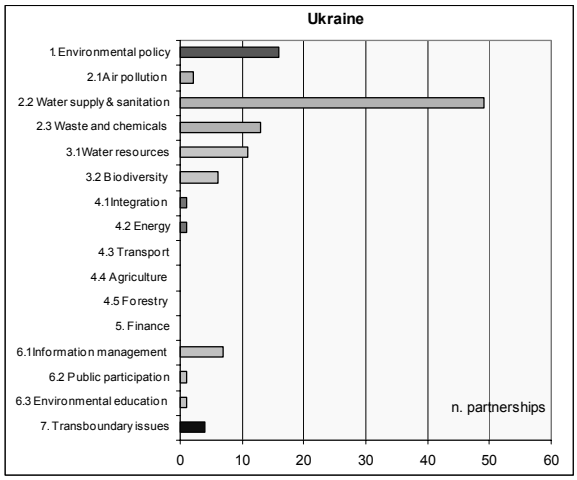
Environmental Priorities

The **1998 Government Policy on Environmental Protection, Use of Natural Resources, and Environmental Safety** identifies the following seven priorities:

- Assure nuclear safety and minimisation of Chernobyl impacts
- Improve river basins and drinking water quality
- Halt environmental degradation and improve environmental quality in cities and industrial centers of Donetsk-Prydniprivskij region
- Invest in new and refurbished sewage treatment infrastructure
- Prevent pollution and improve environmental quality of the Black and Azov Seas
- Find a balance between environmental protection and economic growth through the integration of environmental considerations in the industrial, energy, construction, agriculture and transport sectors
- Protect biodiversity protection and develop nature reserves

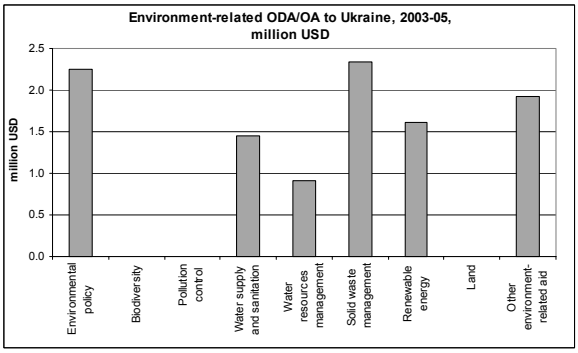
International Co-operation

Number of registered partnerships



Source: EECCA Partnerships Database

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting

Policy Matrix

The following two pages summarise actions taken by the Government of Ukraine that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(46)UNECE EPR of Ukraine
(47)Report to the Ramsar Convention
(48)REC Moldova
(49)ECOLEX database
(50)Main text of this report (see thematic chapters for sources consulted

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

UKRAINE ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution		- Nr of air pollutants monitored increased from 33 to 34	- EURO II standard introduced (2)
Water Supply and Sanitation			
Waste and Chemicals	- Waste management agency created	- Law on potable water approved (4) - Programme for phasing out ozone-depleting substances approved (1) - Waste data system improved (5)	- Regulation on technical maintenance of water supply and sanitation installations approved (4)
Water Resources		- Water Code passed (4) - Flood management programme approved (1) - Water and Health Protocol ratified (5)	
Biodiversity		- Protected areas law approved (3) - Concept of programmes on biodiversity conservation and protected areas approved (1) - Carpatian convention signed (1) - PEEN pilot project carried out (5) - Work on invasive alien species plan started (5)	- 203 new protected areas d designated, for a total of 7243 - Area under protection increased 3% to 2.8 million has
Integration into key economic sectors		- Latest forest strategy now subjected to environmental assessment - 33 JI/CDM project proposals developed	
Cross-cutting	- Salary of department heads and senior specialists increased 280% - Inter-agency monitoring commission created (5)		- Environmental audits regulated by law (4) - Permitting reform started (5)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
-Charges for air pollutants increased 137%; it is now 190 lcu/ton for SO2 and NOx			**Air Pollution**
- Water tariff setting framework reformed (5) -Use of performance-based contracts for WSS expanded (5)			**Water Supply and Sanitation**
		-There are now separate collection systems for hazardous, industrial and municipal waste	**Waste and Chemicals**
-Charges for water pollutants increased 137%; it is now 50 lcu/ton of BOD	-Recommendations on wetland conservation communicated to stakeholders (2)		**Water Resources**
	-Seminar and book on wetland biodiversity conservation targeted to hunters produced (2)	-Expenditures on protected areas increased 58%	**Biodiversity**
	- Organic farming promoted (5) - Timber certification promoted (5)		**Integration into key economic sectors**
-Amount collected through environmental levies increased 31% to 3.4 billion lcu	-Aarhus information and training centre opened in MoE (3) -Publication of magazine “Nature of Ukraine” supported by MoE (3) -Regulation on pollution information disclosure approved (4) - EE/ESD multi-stakeholder body established (5) - Inter-agency body on ESD created (5)		**Cross-cutting**

Country Profile: UZBEKISTAN

Socio-Economic Indicators

	2002	2005
GDP (million, constant 2000 USD)	14 912	17 906
Annual GDP growth rate 2002-2005		6.5
Economic structure (as % of GDP)		
Agriculture	34.3	28.1
Industry	22.0	28.7
Services	43.7	43.2
Exports (% of total exports)		
Agricultural products		..
Fuels and mining products		..
Manufactures		..
FDI (Inward flows as % GDP)	0.7	0.4
ODA (% GNI)	1.8	1.9
GDP per capita (PPP constant 2000 international $)	1 594	1 812
Poverty rate (% of pop. below $2/day)	71.7[a]	
Population (million inhabitants)	25.5	26.6
Urban population (%)	37.1	36.7

a) or closest available year. Data based on PPP, constant 1993 international $.
Source: World Bank, World Development Indicators, UNCTAD, WTO.

Environmental Priorities

The **1998 National Environmental Action Plan** identifies three broad pillars for environmental policy actions, with a number of priorities included in each of them:

1. Mitigation of environmental health impacts: (a) drinking water and sanitation, (b) municipal and hazardous waste management, (c) integration of air pollution concerns in transport policies, (d) phasing out leaded gasoline, (e) improvement of food quality, (f) prevention of industrial pollution, (g) improving the environmental performance of the energy sector; development and introduction of renewable energy sources (solar, water, wind, biogas, etc.)

2. Improved use of land and water resources: (a) reforming the agricultural sector, (b) diversifying crop structure, (c) increasing land productivity, (d) better maintenance of irrigation and drainage networks, (e) development of integrated land, water and salinity management, (f) promoting watershed management approach on a pilot basis, (g) improving the economic mechanism of environmental protection and use of natural resources

3. Regional and global environmental problems: (a) biodiversity conservation and desertification control, (b) improving protected area management, (c) development and implementation of a regional water resource management strategy for Aral Sea basin, (d) joining multilateral conventions and developing domestic mechanisms for compliance

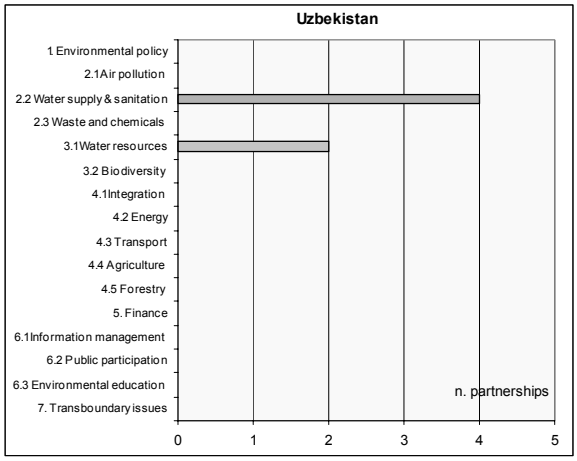
The **Ministry of Environment** has identified the following future priorities:

- Economic instruments for environmental and natural resource management
- Water quality management in transboundary water courses
- Renewable energy
- Recovery and treatment of waste and persistent organic pollutants

International Co-operation

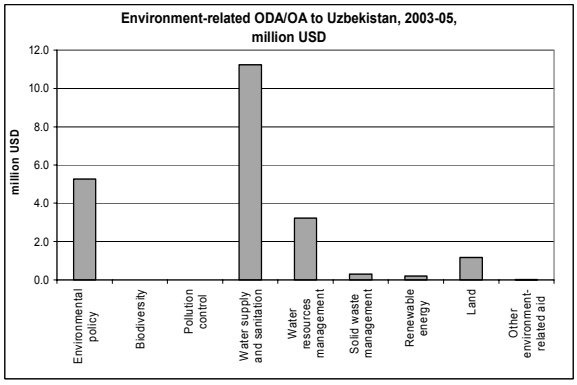
Uzbekistan's main environmental cooperation partners are ADB, GEF, UNDP, UNEP, the World Bank and EBRD.

Number of registered partnerships



Source: EECCA Partnerships Database.

International assistance for environment



Source: OECD DAC Aid Activity database, donors and IFIs reporting.

Implementation Highlight

RENEWABLE ENERGY

The Ministry of Environment of Uzbekistan has identified the development of renewable energy sources as one of the future environmental priorities. The Central Asia's Interstate Commission for Sustainable Development has decided the establishment of the Central Asia Regional Network on renewable energy sources. Uzbekistan has created the "Ecoenergia" National Research and Implementation Centre. A databank of renewable energy sources is being developed. In 2004-2005, 25 thermal and combined solar power units were installed in remote areas of the Aral Sea region to generate electricity and heat. In 2005-2006 six photo-electric solar plant units and solar water-heating collectors where installed in Dzhizak and Bukhara oblasts. Installation of photo-electric solar plants continues in national parks and other protected areas.

Source: Ministry of Environment of Uzbekistan

Policy Matrix

The following two pages summarise actions taken by the Government of Uzbekistan that contribute to achieving the objectives of the EECCA Environment Strategy. Unless otherwise stated, information is taken from the EAP Task Force Questionnaire. Accordingly, the period covered is June 2003-June 2006 for qualitative information and 2002-2005 for quantitative information.

The other sources referred to in the matrix are:

(51) Report to the Convention on Biological Diversity
(52) 2005 State of the Environment Report
(53) UNDP website
(54) State Committee (MoE) website
(55) CAREC
(56) Main text of this report (see thematic chapters for sources consulted
(57) Additional information provided by State Committee on Environment

Considerable efforts have been taken to bring out relevant information, but the policy matrix is not exhaustive.

UZBEKISTAN ENVIRONMENTAL

	Institutional strengthening (re-organisation, system creation, staffing, training, equipment)	**Planning** (SoE monitoring, analyses, targets, action plans, performance monitoring)	**Command-and-control instruments** (bans, direct regulation, permitting)
Air Pollution	-16 new air quality monitoring stations installed	-Ambient standards are now risk-based -Nr of air pollutants for which concentrations are monitored increased from 21 to 24 -Nr of air pollutants for which emissions are monitored increased from 31 to 39 -Renewable energy study undertaken (3)	- Guidelines for setting emission standards for air pollutants developed (7) - Permitting procedure for emission of air pollutants developed (7) - Leaded petrol phased out (6)
Water Supply and Sanitation			- Procedure for wastewater collection in the sanitation network developed (7) - Guidelines for setting wastewater discharge standards developed (7)
Waste and Chemicals		- Nr of pollutants for which the state of land is monitored increased from 29 to 41 (7) -Waste management strategy and action plan developed (7 -Guidelines for hazardous waste assessment developed (7) -Land and waste cadastre created (7)	
Water Resources		- IWRM roadmap developed (6) - Nr of water pollutants for which discharges are monitored increased from 31 to 50 (7)	- Guidelines for setting water pollutants discharge standards for developed (7) - Permitting procedure for special water use developed (7)
Biodiversity	-Nr of staff working on protected areas increased 7% to 512	- Law on protected areas passed (7) - Biodiversity cadastre created (7) - High Nature Value farmland project launched (6)	- Area under protection increased 8% to 12.2 million has - Requirements to strengthen control over biodiversity conservation approved (1)
Integration into key economic sectors			
Cross-cutting	-Nr of MoE staff in headquarters decreased by 19% to 39 -Salary of department heads and senior specialists increased 87%	-Set of environmental indicators identified and guidelines distributed (2) - SoE report regularly prepared (6)	

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labeling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
- Pollution charge for SO2 increased 30% to 390 lcu/ton - Gas tariffs for households increased 170% to 15 lcu/m3 - Average electricity tariffs increased 127% to some 31 lcu/kwh			**Air Pollution**
- Water tariffs for households increased 143% to 56 lcu/m3 - Abstraction fees for utilities increased 180% to 4 lcu/m3			**Water Supply and Sanitation**
- Waste disposal charge increased 30% (7)	- Awareness raising materials on municipal waste management published (3)	- Capacity for waste disposal in sanitary landfills increased by 15% - 79,000 ha of contaminated land cleaned up	**Waste and Chemicals**
- Water tariffs for agricultural users increased 169% to 0.35 lcu/m3 - Water pollution charges increased 30%			**Water Resources**
	- Awareness raising materials on biodiversity published and disseminated (7)	-Expenditure on protected areas management increased 19% to 272 million lcu	**Biodiversity**
	- Agricultural advice programmes piloted (6) - Awareness raising materials on renewable energy and forest fires published and disseminated (7)	- Integrated Pest Management programmes expanded (6)	**Integration into key economic sectors**
	- Environmental information provided through mass media (7) - Guide and training programmes to inform officials on public participation developed (6) - Environmental education included in policy documents and introduced in pre-school - Web-site, information centre, and information and analysis service created in MoE (3) - Advisory board with NGO participation created (6)	- Resources administered by environmental fund increased 6 times, to 2.7 billion lcu as of 1 January 2007 (7)	**Cross-cutting**