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PROGRESS IN EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA



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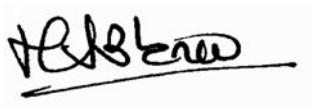
FOREWORD

Since 1991, the "Environment for Europe" process has provided a framework for improving environmental policies and outcomes in the pan-European region. In 1993, the Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe (EAP Task Force) was established to support the integration of the environment into the broader process of economic and political reform in transition economies. With the enlargement of the European Union, the focus of the EAP Task Force's work has shifted east, and is now concentrated on the countries of Eastern Europe, Caucasus and Central Asia (EECCA).

In 2003, at the fifth "Environment for Europe" Conference in Kiev, Environment Ministers of the pan-European region adopted an Environment Strategy for EECCA countries. Ministers asked the EAP Task Force to lead the effort to facilitate and support the achievement of the objectives of the EECCA Environment Strategy. This report assesses the progress that has been made so far in achieving the objectives of the Strategy and focuses on actual policy measures taken by EECCA governments. It will serve to support discussions at the sixth "Environment for Europe" Conference, to be held in Belgrade in October 2007.

The report was prepared by the EAP Task Force Secretariat, located in OECD's Environment Directorate, in collaboration with a number of international organisations and regional stakeholders – UNDP, UNECE, UNEP, WHO, World Bank, the Regional Environmental Centres for Central and Eastern Europe, Russia, Moldova, the Caucasus and Central Asia, and the NGO network European ECO-Forum. Work on the report was also closely co-ordinated with the European Environment Agency's Fourth Assessment of environmental conditions in the pan-European region, and was overseen by the EAP Task Force which currently is co-chaired by the European Commission and Kazakhstan. EECCA governments have driven the report's intent and structure, provided a wealth of information and reviewed its final draft. Several donors – the European Commission, the Netherlands, Norway, Switzerland and the United Kingdom – have supported financially its preparation.

The main message is that, in a still difficult context, EECCA countries have made some progress in improving environmental management, but a major implementation gap persists. In an increasingly diverse region, progress is not even across countries or environmental policy areas. Finance is a barrier in all areas, but it is not always the most important one: creating a more effective incentive structure for environmental improvement through policy and institutional reform is also essential. The report delineates the main elements of a more coherent and effective reform agenda, both at the general level and within each policy area. We are confident that it will provide a good basis for discussion by Ministers at the Belgrade Conference.



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CONTRIBUTING ORGANISATIONS

Task Force for the Implementation of the Environmental Action Programme (EAP Task Force) – *www.oecd.org/env/eap*

The mission of the EAP Task Force is to facilitate and support environmental policy reform in the countries of Eastern Europe, Caucasus and Central Asia (EECCA) by promoting the integration of environmental considerations into the processes of economic, social and political reform and by upgrading institutional and human capacities for environmental management. Established in 1993 as part of the "Environment for Europe" process, the EAP Task Force brings together policy-makers from Central and Eastern Europe, EECCA and donor countries, international institutions and other stakeholders. The Organisation for Economic Co-operation and Development (OECD) serves as its Secretariat.

United Nations Development Programme (UNDP) – *www.undp.org*

The UNDP is the UN's global development network, advocating for change to help people build a better life. UNDP is on the ground with 166 country offices, working as a trusted partner with governments, civil society and the private sector on their own solutions to global and national development challenges. Environment and energy are essential for human development. The poor are disproportionately affected by environmental degradation and lack of access to safe, affordable natural resources and energy services. UNDP helps countries strengthen their capacity to address these challenges at global, national and community levels, identifying and sharing best practices, providing innovative policy advice and linking partners through pilot projects that help poor people build sustainable livelihoods. With a USD 5 billion portfolio of environment and energy projects, UNDP is also one of the world's largest providers of technical assistance in the area of climate change.

United Nations Economic Commission for Europe (UNECE) – *www.unece.org*

The UNECE is one of the five regional commissions of the United Nations. UNECE provides a regional forum for governments to develop conventions, norms and standards with the goal of harmonising action and facilitating communication between member States. The aim of the UNECE's environmental activities is to reduce pollution so as to minimise environmental damage and conserve our natural resources for future generations, with a view to safeguarding the environment and human health and promoting sustainable development.

United Nations Environment Programme (UNEP) – *www.unep.org*

The mission of the UNEP is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. UNEP was established in 1972 to serve as the "voice of the environment" within the UN system. UNEP is organised into divisions that reflect the Programme's agreed priorities: early warning and assessment; policy development and law; policy implementation; regional cooperation; communications and public information; trade, industry and economics; support for conventions and other multilateral environmental agreements (MEAs); and implementation of projects under the Global Environment Facility (GEF). UNEP participates in the "Environment for Europe" process through the Regional Office for Europe, which facilitates the implementation of UNEP's programme in Europe.

World Health Organisation (WHO) – *www.who.int*

The WHO was established in 1948 as the specialised agency of the United Nations responsible for directing and coordinating authority for international health matters and public health. One of the WHO's constitutional functions is to provide objective an reliable information and advice in the field of human health. It fulfils this responsibility in part through its publications programmes, seeking to help countries make policies that benefit public health and address their most pressing public health concerns.

The World Bank – *www.worldbank.org*

The World Bank is a source of financial and technical assistance to developing countries around the world. It is made up of two unique development institutions owned by 185 member countries—the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). Each institution plays a different but supportive role in global poverty reduction and the improvement of living standards. The IBRD focuses on middle income and creditworthy poor countries, while IDA focuses on the poorest countries in the world. Together these institutions provide low-interest loans, interest-free credit and grants to developing countries for education, health, infrastructure, communications and many other purposes.

Project Preparation Committee (PPC) – *www.ppcenvironment.org*

The PPC has supported the development of environmental investment projects in Central and Eastern Europe, the Caucasus and Central Asia since 1993. It facilitates dialogue between donors, international financial institutions (IFIs) and client countries with project needs. With the continued support of its donor members, including the provision of PPC Officers working inside IFI banking teams, the PPC provides: *i)* support for the identification, preparation and financing of environmental investment projects; *ii)* opportunities for coordination, matchmaking and networking between stakeholders, and *iii)* access to good practice materials and support for capacity building. The secretariat of the PPC is at the European Bank for Reconstruction and Development in London.

Regional Environmental Centre for the Caucasus (REC Caucasus) – *www.rec-caucasus.org*

The REC Caucasus is an independent, non-for-profit organisation, established in spring of 2000, following the decision made at the 1995 "Environment for Europe" Ministerial Conference, to work for environment and sustainable development and to strengthen the role of civil society in the Caucasus region. To achieve its mission the Centre encourages co-operation among non-governmental organisations, governments, business, academic institutions, media and other stakeholders by supporting free exchange of information, offering advice and funding and promoting public participation in environmental decision-making.

Regional Environmental Centre of Central Asia (CAREC) – *www.carec.kz*

The CAREC is an independent non-profit international organisation, acting in accordance with the law of the Republic of Kazakhstan, with its Headquarters based in Almaty and Affiliates based in Dushanbe (Tadjikistan), Bishkek (Kyrgyz Republic) and Tashkent (Uzbekistan). CAREC has been co-established by five Central Asian countries, Commission of European Communities and UNDP to promote environmental cooperation in Central Asia at the national and regional levels, between non-governmental organisations, state bodies, businesses, local self-governance bodies and other stakeholders.

Regional Environmental Centre for Moldova (REC Moldova) – *www.rec.md*

The REC Moldova was established in 1998 by the Government of Moldova and the European Commission as an independent, international, non-for-profit and non-political organisation to assist in solving of environmental problems through the promotion of co-operation between NGOs, governmental bodies, local communities, the business sector and all other environmental stakeholders at both national and regional levels, to increase education, information and public participation in the environmental decision making process in Moldova and neighbouring countries.

Russian Regional Environmental Centre (RREC) – *www.rusrec.ru*

The RREC is an international organisation with a special status, established by the European Commission and the Russian Government. The RREC works with federal and regional governments of the Russian Federation, and their partners. The RREC organises consultations and training for government bodies and natural resources users, facilitates capacity building of non-governmental organisations and the development of civil society. The RREC portfolio includes numerous projects and initiatives involving interaction among various sectors of society, establishment of new institutions and support for partnerships.

Regional Environmental Centre for Central and Eastern Europe (REC) – *www.rec.org*

The REC is an independent international organisation established in 1990 by Hungary, the United States and the European Commission. Today this non-advocacy, not-for-profit organisation is legally based on a charter signed by the governments of 29 countries and the European Commission. The REC's mission is to assist in solving the environmental problems of CEE by promoting co-operation among non-governmental organisations, private institutions, governments, businesses and other environmental stakeholders, and by promoting the free exchange of information and public participation in environmental decision making. The REC has Headquarters in Szentendre, Hungary, and country offices as well as field offices in 16 Central and Eastern European (CEE) countries.

European ECO-Forum – *www.eco-forum.org*

The European ECO-Forum is a network of more than 200 environmental citizen's organisations (ECOs) throughout the entire Europe, sharing a common interest in pan-European co-operation for a better environment. The ECO-Forum follows the official Pan-European co-operation. Its Co-ordination Board is composed of Chair, Treasurer and Issue Groups Co-ordinators. The Co-ordination Unit of the ECO-Forum is hosted by Eco-Accord.

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Abbreviations

ADB	Asian Development Bank
BOD	Biological Oxygen Demand
CAREC	Regional Environmental Centre for Central Asia
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CEE	Central and Eastern Europe
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DFID	UK Department for International Development
EAP TF	Task Force for the Implementation of the Environment Action Programme for Central and Eastern Europe
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECMT	European Conference of Ministers of Transport
ELVs	Effluent Limit Values
EE	Environmental Education
EEA	European Environment Agency
EECCA	Eastern Europe, Caucasus and Central Asia
EIA	Environmental Impact Assessment
EPR	Environmental Performance Review
ESD	Education for Sustainable Development
EU	European Union
EUR	Euros
FDI	Foreign Direct Investment
FLEG	Forest Law Enforcement and Governance
GDP	Gross Domestic Product
GHG	Greenhouse Gases
HNV	High Nature Value
IAS	Invasive Alien Species
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IEA	International Energy Agency
IFIs	International Financial Institutions
IPM	Integrated Pest Management
IWRM	Integrated Water Resources Management
JI/CDM	Joint Implementation/Clean Development Mechanism
K	Thousand
lcu	Local currency unit
LRTAPC	Long-Range Transboundary Air Pollution Convention
MAC	Maximum Allowable Concentration
MDGs	Millennium Development Goals

MoE	Ministry of Environment
NEAP	National Environmental Action Plan
NGOs	Non-Governmental Organisations
NH_3	Ammonia
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
ODA/OA	Official Development Assistance/Official Assistance
ODS	Ozone-depleting substances
OECD	Organisation for Economic Co-operation and Development
PEEN	Pan-European Ecological Network
PM	Particulate matter
PM_{10}	Particulate matter under 10 micrometers of diameter
$PM_{2.5}$	Particulate matter under 2.5 micrometers of diameter
POPs	Persistent Organic Pollutants
PPC	Project Preparation Committee
ppm	Parts per million
PRSP	Poverty Reduction Strategy Paper
PRTRs	Pollutant Release and Transfer Registers
REC	Regional Environmental Centre for Central and Eastern Europe
REC-Moldova	Regional Environmental Centre for Moldova
REC Russia	Regional Environmental Centre for the Russian Federation
SAICM	Strategic Approach to Integrated Chemicals Management
SEA	Strategic Environmental Assessment
SEE	South Eastern Europe
SER	State Environmental Review
SO_2	Sulphur dioxide
SoE	State of the Environment
THE PEP	Transport, Health and Environment Pan-European Programme
TSP	Total Suspended Particulates
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNITAR	United Nations Institute for Training and Research
USD	United States Dollars
WB	World Bank
WHO	World Health Organisation
WRM	Water Resources Management
WSS	Water Supply and Sanitation
$\mu g/m^3$	Micrograms per cubic meter

Executive summary

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) as a framework for co-operation and for delivering policies for a better environment. 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 was commissioned to support discussion at the sixth "Environment for Europe" Ministerial Conference that will take place in Belgrade in October 2007.

Most EECCA countries lack the strong drivers for environmental improvement that exist in western countries (public demand, price signals) and Central European countries (EU accession requirements). In EECCA, 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 uneven progress in public administration reform and tackling corruption, often does not support 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. Additional examples can be found in the environmental policy matrixes included in the country profiles.

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 is apparent in 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 has finally been 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.

Looking at progress across different policy 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. As a result, little progress has been made in adopting integrated policy responses.

On the surface, progress does not seem to have accelerated after the Kiev Ministerial Conference in many environmental policy areas. Indeed, in some cases there has even been regression, with the authority and capacities of environmental agencies 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 some countries are doing the necessary groundwork , and that consistency and patience will pay off. Recent progress in some countries was made possible by foundations established several years earlier.

Donor support has often been a catalyst for fostering progress. While this report focuses on the reform efforts made by EECCA countries, it should be noted that much of the progress has taken place with some form of support from bilateral donors or international organisations.

Finance is clearly a cross-cutting constraint in improving environmental management and advancing towards environmental sustainability, but not necessarily the most important one in all cases. Environmental authorities in a number of EECCA countries experience major institutional and organisational weaknesses, often related to public

administration practices inherited from the Soviet era. Other constraints include a shortage of skills related to the functioning of market economies, a 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.

Environmental authorities also face structural and political constraints. These include the lack of strong drivers for environmental improvement (and the subsequent low profile of environment on national policy agendas); a poor governance context; 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.

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:

- **A clear vision** of where each EECCA country wants to go and how it can get there – this will require setting clear objectives and targets, making the case for environmental issues 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 secondary legislation (implementing regulations); improving inter-sectoral co-ordination and monitoring the contribution of line ministries to national environmental objectives; and empowering sub-national environmental authorities.

- **A new environmental management approach built around 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 incentives with perverse effects 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 charges for environmental services, 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 to building capacities in environmental economics, financial and human resources management, policy integration and public/stakeholder relations, as well as strengthening the capacities 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, and the potential of mass-media for promoting good environmental behaviour.

- **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, and also more strategic and sophisticated approaches to co-operation on the part of donors.

As regards the EECCA Environment Strategy, EECCA countries feel that it has been useful as a guidance document and a framework for benchmarking and guiding support. They also feel, however, that a more differentiated approach is now needed, tailored to the specific needs of the EECCA sub-regions, groups of countries or individual countries.

At the same time, there is still need for an EECCA-wide mechanism to exchange information and good practices in areas of common interest, and to facilitate dialogue and co-operation with donors. Ministries of Environment from some OECD countries have found the Strategy very useful, as it has allowed them both to guide their co-operation efforts and to be more effective in mobilising funds for environmental co-operation with EECCA countries. Other development partners, such as the World Bank, find the monitoring work associated with the EECCA Environment Strategy to be a positive and important feature of the Strategy process.

Résumé

Un des principaux résultats de la Conférence ministérielle de Kiev de 1993 « Un environnement pour l'Europe » a été l'adoption de la Stratégie environnementale pour les pays d'Europe orientale, du Caucase et d'Asie centrale (EOCAC) ; la stratégie constitue un cadre pour la coopération et pour la mise en œuvre de politiques qui contribuent à la qualité de l'environnement. Le présent rapport dresse un bilan des progrès accomplis depuis 2003 quant aux objectifs de cette stratégie – l'accent étant mis sur les mesures prises par les gouvernements des pays d'EOCAC. Il a été établi pour alimenter les discussions qui auront lieu lors de la sixième Conférence ministérielle « Un environnement pour l'Europe » qui se tiendra à Belgrade en octobre 2007.

La plupart des pays d'EOCAC ne disposent pas des puissants éléments moteurs de l'amélioration de l'environnement dont ont bénéficié les pays occidentaux (demande publique, signaux liés aux prix) et les pays d'Europe centrale (critères d'adhésion à l'UE). Les possibilités offertes par la relance de la croissance économique pour investir dans l'environnement et mettre les prix à leur juste niveau n'ont pas été pleinement mises à profit. Compte tenu des progrès inégaux en matière de réforme des administrations publiques et de lutte contre la corruption, il est rare que la situation sur le plan de la gouvernance contribue à une approche moderne de la gestion de l'environnement. Il existe néanmoins de nombreux exemples d'initiatives fructueuses entreprises dans différents pays et domaines d'action des pouvoirs publics. Le corps du texte de ce rapport recense près de 200 exemples de progrès réalisés dans les 12 pays et les 15 domaines d'action analysés, et l'on en trouvera des exemples supplémentaires dans les tableaux synoptiques de la politique environnementale qui figurent dans les profils par pays.

Le rythme des progrès varie d'un domaine d'action à l'autre. Des progrès notables semblent avoir été accomplis en ce qui concerne l'assurance du respect des dispositions, la distribution d'eau et l'assainissement, la gestion des ressources en eau et l'agriculture. Les progrès sont moins visibles dans les domaines de la gestion des déchets, de la biodiversité, des transports et de l'efficacité énergétique. Même dans certains domaines qui semblent « figés » dans le temps (comme les normes de qualité environnementale), *a minima*, la nécessité de la réforme finit par être reconnue. Les cadres juridiques et politiques fondamentaux sont souvent en place et continuent de s'améliorer – même si d'importantes réformes supplémentaires demeurent nécessaires. Le véritable problème est la mise en œuvre – le déficit dans ce domaine étant particulièrement évident au niveau infranational. Par ailleurs, là où des progrès s'accomplissent, il ne semble guère que les pays adoptent une approche cohérente de la réforme.

L'examen des progrès réalisés dans les différents domaines procure de précieuses indications. La situation relative aux infrastructures liées à l'environnement (qu'il s'agisse de la distribution d'eau et de l'assainissement, des déchets, de l'énergie, des transports urbains ou de l'irrigation) se caractérise souvent par des modèles financiers non viables qui ont pour conséquence un délabrement rapide des infrastructures, un service de qualité médiocre et des atteintes à l'environnement. En outre, s'il est de plus en plus admis que les progrès sur la voie de l'intégration des politiques environnementales sont indispensables pour s'acheminer vers la préservation durable de l'environnement, les autorités chargées de l'environnement restent mal préparées à s'engager dans un dialogue intersectoriel fructueux sur les mesures à prendre et n'ont guère progressé sur la voie de l'adoption de moyens d'action intégrés.

En apparence, les progrès ne semblent guère s'être accélérés après la Conférence ministérielle de Kiev dans de nombreux domaines de la politique environnementale. De fait, la situation a régressé dans certains cas, les autorités chargées de l'environnement ayant vu leurs pouvoirs et leurs moyens diminuer dans certains pays. L'expérience acquise depuis 2003 confirme que les progrès environnementaux dans l'EOCAC prendront beaucoup plus de temps que dans les pays d'Europe centrale et orientale. Toutefois, des signes indiquent que certains pays entreprennent le travail de fonds nécessaire et que la constance et la patience

finiront par payer – les récents progrès enregistrés dans certains pays ont été rendus possibles par les conditions mises en place plusieurs années auparavant.

L'aide des donneurs a joué un rôle de catalyseur. De fait, si le présent rapport est axé sur l'inventaire des efforts de réforme entrepris par les pays d'EOCAC, une grande partie des progrès ont été réalisés avec l'appui, sous une forme ou une autre, de donneurs bilatéraux ou d'organisations internationales.

Les aspects financiers constituent de toute évidence une entrave commune à l'amélioration de la gestion environnementale et à la marche vers la viabilité environnementale, mais pas nécessairement la plus importante dans tous les cas. Dans un certain nombre de pays de la région, les autorités environnementales souffrent de faiblesses importantes sur le plan institutionnel et organisationnel – souvent liées aux pratiques de l'administration publique héritées de l'ère soviétique. Parmi les autres entraves figurent une pénurie de compétences relatives au fonctionnement des économies de marché, une méconnaissance du rôle de la gestion de l'information dans l'élaboration et la mise en œuvre des politiques, une faible coordination horizontale et verticale au niveau des institutions ; et une faible sensibilisation aux problèmes d'environnement de la part du public et des agents économiques.

Or, les autorités environnementales sont aussi soumises à des contraintes structurelles et politiques, notamment l'absence d'éléments moteurs puissants (et la faible importance accordée par conséquent à l'environnement dans les programmes d'action nationaux), un contexte de gouvernance défavorable, la difficulté de décentraliser les compétences de manière fiscalement responsable, les préoccupations suscitées par l'impact des politiques d'environnement sur la compétitivité et les structures sociales ; la coordination de plus en plus faible entre les donneurs ; et l'opinion partagée par les hauts responsables que la protection de l'environnement est un frein à la croissance économique – et non un élément indispensable pour assurer le développement économique et social à long terme.

S'il n'existe pas de feuille de route commune pour accélérer les progrès en matière de gestion de l'environnement dans les pays d'EOCAC, un certain nombre de domaines d'action essentiels peuvent être mis en évidence. Pour accélérer la réalisation des objectifs de la Stratégie environnementale pour les pays d'EOCAC, et plus généralement la marche vers la viabilité environnementale, les conditions suivantes seraient nécessaires :

- **Une vision claire** du but visé par chaque pays d'EOCAC et de la façon d'y parvenir – ce qui supposera de définir des objectifs et cibles clairs, de justifier la prise en compte de l'environnement dans les plans de développement nationaux (et les programmes des pays donneurs) et de forger des alliances avec les ministères des finances et les ministères fonctionnels pour favoriser des réformes sectorielles « doublement gagnantes ».

- **Une approche graduelle de la réforme** – ce qui nécessitera la définition d'objectifs clairs, l'ordonnancement des mesures et l'adoption d'un rythme de réforme à la mesure des restrictions politiques, économiques et techniques de chaque pays.

- **Une stratégie davantage axée sur la mise en œuvre** – ce qui supposera de relier les processus de planification, de budgétisation et de suivi ; d'élaborer des règlements d'application ; d'améliorer la coordination intersectorielle et de contrôler la contribution des ministères fonctionnels aux objectifs d'environnement nationaux ; ainsi que de déléguer des responsabilités plus importantes aux autorités environnementales infranationales.

- **Une approche privilégiant l'offre de véritables incitations** afin d'encourager les producteurs et les consommateurs à améliorer leurs performances environnementales de la manière la plus efficace par rapport aux coûts – ce qui nécessitera de simplifier la réglementation, de renforcer les moyens d'application et de mettre l'accent sur la gestion de la demande.

- **Un cadre institutionnel amélioré** – ce qui supposera une stabilité institutionnelle, une clarification des compétences au niveau

infranational, la suppression des incitations perverses adressées au personnel et l'instauration de systèmes d'information plus solides et utiles à l'action des pouvoirs publics.

- **Une approche exhaustive du financement des mesures de protection de l'environnement** – ce qui supposera d'examiner le rôle de toutes les sources de financement potentielles et les actions nécessaires pour les exploiter (dépenses publiques, incitations en faveur des investissements privés dans la lutte contre la pollution, redevances d'utilisation pour les services environnementaux, climat de l'investissement privé dans les infrastructures, mécanisme pour un développement propre, aide des donneurs) et de mettre en place les moyens de les mobiliser et de les gérer.

- **Un investissement stratégique dans les compétences** – ce qui exigera de porter une attention particulière aux capacités dans les domaines de l'économie de l'environnement, de la gestion financière et de la gestion des ressources humaines, de l'intégration des politiques et des relations avec le public et les acteurs concernés ainsi qu'avec les acteurs à l'échelon infranational.

- **Un engagement plus fort des acteurs concernés** – ce qui nécessitera d'appréhender les préoccupations de l'industrie, le rôle des ONG en tant qu'observateurs critiques et agents d'intervention au niveau local, ainsi que les possibilités offertes par les médias de promouvoir un comportement respectueux de l'environnement.

- **Un cadre de coopération internationale plus favorable** – ce qui supposera des efforts de la part des pays d'EOCAC pour mobiliser les donneurs, coordonner leur soutien et en faire un usage efficient, mais aussi des approches plus stratégiques et élaborées de la coopération de la part des donneurs.

Les pays d'EOCAC estiment que si la Stratégie environnementale leur a été utile en tant de document d'orientation et cadre de référence pour comparer et orienter les mesures de soutien, il conviendrait désormais d'adopter une approche plus différenciée, adaptée aux besoins spécifiques des pays, groupes de pays ou sous-régions de l'EOCAC.

Il reste cependant nécessaire de mettre en place un mécanisme à l'échelle de l'EOCAC afin d'échanger des informations et des bonnes pratiques dans les domaines d'intérêt commun, ainsi que de faciliter le dialogue et la coopération avec les donneurs. Les ministères de l'environnement de certains pays de l'OCDE ont jugé la Stratégie très utile, car elle leur a permis à la fois d'orienter leurs efforts de coopération et d'être plus efficaces pour mobiliser des fonds au service de la coopération environnementale avec les pays d'EOCAC. D'autres partenaires en développement, comme la Banque mondiale, estiment également que les travaux de suivi associés à la Stratégie environnementale pour les pays d'EOCAC constituent un élément positif et important de cette Stratégie.

Introduction



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 2002 World Summit on Sustainable Development (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 facilitate 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, can 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 also provides an overview of environmental management in the region and of progress towards achieving the environmental Millennium Development Goal.

The report was commissioned as a background document for the sixth "Environment for Europe" Ministerial Conference that will take place in Belgrade in October 2007. It follows on the previous report "Environmental Management in Eastern Europe, Caucasus and Central Asia" (OECD, 2005) that served as the main analytical background document for the Conference of EECCA Environment Ministers and their Partners that took place in Tbilisi (Georgia) in October 2004. The 2005 report provided a baseline, mostly by making use of materials that were available at the time of the Kiev Ministerial Conference in 2003. 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 the present report have involved many organisations and individuals. EECCA countries, donor countries and other international partners have made their contributions to this report within 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 through a dedicated questionnaire (referred throughout the report as the EAP Task Force questionnaire[1]) and through their participation in sub-regional and regional workshops.

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

In addition, this report was prepared in close co-operation with the European Environment Agency (EEA) and should be read together with their forthcoming report "Europe's Environment: the Fourth Assessment". It also builds on other

1. The EAP Task Force questionnaire was discussed in a Regional Workshop in May 2006 and distributed in July 2006. Responses were 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.

relevant, available analyses – such as work done by the EBRD, the Energy Charter Secretariat, the European Conference of Ministers of Transport or the International Energy Agency.

The structure of the present 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. In Part I, 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 Strategy. When relevant, those chapters provide a snapshot of the current situation in the environmental or economic sector that is analysed. A brief concluding section identifies common threads emerging from the analysis of the different objectives/sub-objectives. Finally, a collection of country profiles, prepared with information provided by countries to international organisations (including the EAP TF questionnaire) is included in Part II of the Report.

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 was growing at 7% per year (EBRD, 2006). Average growth rates vary greatly across countries: 4.5-6.5% for Kyrgyz Republic, Uzbekistan, Moldova and the Russian Federation; 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 the 1989 level. For Moldova and Georgia, real GDP has not yet recovered to *half* of what it was in 1989 (EBRD, 2006).

EECCA's economic growth is expected to be over 6% during 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 EU15 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 Russia-centred **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 positive effect that demands from western consumers could have on environmental sustainability through the value-chain.

As a share of GDP, EECCA countries (as a group) receive **foreign direct investment** (FDI) volumes higher than China. A large part of FDI is related

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).

to privatisations or acquisitions, and comes from within the region – in 2005, major privatisations involving buyers from outside the region took place only in Georgia, Ukraine and Uzbekistan. Azerbaijan and Kazakhstan have managed to attract significant FDI, mostly in their oil sectors. In contrast, EECCA countries not exporting oil or gas receive only limited inflows of FDI – 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, and 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 represent more than 10% of GDP (EBRD, 2006). The Russian Federation acts as both an important source and a recipient of remittances. For half of the EECCA 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 in 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 have extremely high levels of poverty – more than 40%, reaching 70% in Tajikistan (World Bank, 2006). In the region, 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 along with better environmental management, then environmental action should be targeted at the environmental problems of the rural poor.

Governance is highly problematic in the region and constitutes the major obstacle to poverty reduction and improving environmental management. 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 even 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.

Governance is improving in some EECCA countries, but not in the region as a whole. The World Bank Governance Indicators[8] show low levels of governance for all EECCA countries, and evolution is mixed. In 2005, on a 0-5 scale, only Armenia and Ukraine scored above 2. The average scores of Georgia and Ukraine are improving noticeably, but six countries saw their scores decrease (Belarus, the Kyrgyz Republic, Moldova, the Russian Federation, Turkmenistan and Uzbekistan). Firms reported a smaller incidence of corruption in 2005 than in 2002 in some but not all countries (Anderson and Gray, 2006).[9] Most EECCA countries show improvements in economic governance, but are still constrained by regulatory

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 gained as much 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).
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 in some areas. But corruption does not seem to have lessened in Azerbaijan and the Russian Federation. The Kyrgyz Republic continues to have the worst corruption indicators.

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 a pressing issue. Yet perceptions of honesty, affordability, ability to enforce decisions and speed are generally 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 undergoing **political diversification**. Since the Kiev Ministerial Conference, so-called "colour revolutions" have taken place in Georgia (November 2003), Ukraine (November 2004) and the Kyrgyz Republic (March 2005). According to analysis conducted by Freedom House, however, most countries in the region still have few political rights and civil liberties,[10] and a low level of democracy.[11] The evolution is mixed here as well, with improvements in the Kyrgyz Republic and Ukraine, and degradation in several other countries of the region. 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) is promoting the growth of parallel economies, contributing to increased corruption and poverty, and weakening 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) is increasingly recognised.

Box 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

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

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 also 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 2). As noted throughout this report, in addition to reducing the negative impacts from environmental degradation, better environmental management can also contribute to developing good governance, encouraging higher productivity in industrial facilities, improving the performance of environmentally-related infrastructure and reducing public expenditures.

Box 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 for measuring development progress. The MDG framework captures environmental concerns in Goal 7: Ensure environmental sustainability. The targets associated with this goal focus on 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 other 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. 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).

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1

Progress across strategic objectives

1. Environmental legislation, policies and institutions

2. Pollution prevention and control

3. Sustainable management of natural resources

4. Environmental policy integration

5. Finance for environment

6. Environmental information and public awareness

7. Transboundary issues and multilateral environmental agreements

8. Conclusions



1. Environmental legislation, policies and institutions

INTRODUCTION

As 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 by 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 countries aspiring to EU membership, environmental legislation is a major area for convergence. For countries seeking 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 countries aiming to strengthen the rule of law and improving 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 be set higher – 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 approaches, high turnover of professionals and frequent restructuring, thereby lacking both the incentives and means to ensure the achievement of environmental results. Policies are generally not 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. 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 countries. It has been prepared with 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 of the region developed major environmental policy documents such as National Environmental Action Plans (NEAPs). Nevertheless, planning efforts have continued. For example Belarus has developed a National Strategy on Sustainable Socio-Economic-Development (and it is currently implementing its third NEAP for 2006-2010) and Georgia has started to prepare its second NEAP. At the same time, numerous thematic strategies have been formulated, but often in an unco-ordinated manner, and they were largely driven by the international agenda and donor support. As a result, EECCA planning frameworks are still largely unsystematic and incoherent. Local environmental planning is limited to individual initiatives – for example, local Agendas 21 have been developed in several countries, including Uzbekistan.

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.

Ambitious environmental **lawmaking** has kept its pace. Substantive reforms are being guided by international benchmarks, including European legislation (see Box 1.1). Lawmaking practices are evolving and now include 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 the reforms are not always coherent – for example, Kazakhstan is trying to combine the EU water quality classification with the old system, and it is doing this without using water quality objectives and standards as management tools.

Progress is also finally taking place in **environmental permitting**. Environmental authorities have come to see the deficiencies of the Soviet-legacy permitting system and most EECCA 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 radical reforms in such short periods of time. 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 limit values (ELVs), thereby limiting not only the discretion of permitting authorities but also eroding the level of environmental protection and the incentives for innovation.[12]

Box 1.1 Convergence with EU environmental legislation in EECCA

Within the framework of the new European Neighbourhood Policy, action plans for enhanced co-operation 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. In addition, the Central Asian countries have included convergence of legislation with international requirements, one of the priorities under the Ashgabat convention on sustainable development. 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 co-ordinated, 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, an analysis of regulatory impacts, in particular 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 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.

12. At the time of writing, Belarus was studying the possibility of introducing integrated permitting.

No significant progress in regulations and in the practical application of **environmental impact assessment** (EIA) has been reported in recent years. All EECCA countries have laws requiring EIA, although they vary in consistency and comprehensiveness. Generally they do not 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, EECCA countries that passed laws on EIA and state environmental reviews (SERs) 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 their 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).

While the old system of **pollution charges** continues essentially unreformed in the region, some improvements have been made. The number of parameters subject to charges has been reduced in Armenia and Ukraine, and most EECCA countries have increased pollution charge rates (*e.g.* they have more than doubled in Ukraine). Charge collection rates have also 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. These changes, however, have been too timid to provide real incentives for environmental improvements; also, the pollution charge systems retain an essentially revenue-raising nature. As regards charges on environmentally harmful products, they are being applied in Armenia, Moldova and Ukraine, but they do not seem to have any incentive impact due to the low charge rates and lack (or higher price) of alternative, less harmful products on the market.

Natural resource taxes also remain purely fiscal instruments, without any incentive impact. Low rates and lack of environment-driven differentiation means they do not 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. There is progress in Kazakhstan, where the new Environmental Code envisages expert assessment of damages based on actual costs of a selected solution, but implementation guidance has yet to be developed. Uzbekistan has drafted decrees on assessment of economic damages. 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 given 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. Also, laws on environmental control have been developed in Armenia and Georgia in accordance with the Guiding Principles for Reform of Environmental Enforcement Authorities endorsed at the Kiev conference in 2003.

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) remain at the core of these strategies. The incentive framework for environmental compliance has not yet been 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 made it possible to use 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 underway throughout the region. 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. 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 than on volatile external technical assistance. Voluntary initiatives beyond compliance are rare.

Some progress is evident in **enterprise monitoring and reporting**. Several countries (Armenia, Georgia, Kazakhstan and the Russian Federation) have improved the legal basis of enterprise monitoring and reporting. Yet 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 partly attributed to restrictions imposed on environmental inspectorates, aimed at fighting corruption and reducing the administrative burden of regulation. In addition, the low compliance monitoring capacity of inspectorates and a poor understanding of the regulated community impedes 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. 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 is likely to 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 have become more stringent. But in some other EECCA countries 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. Yet these improvements are still insufficient – as can be seen 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 have hampered the development of necessary integrated approaches to policy implementation.

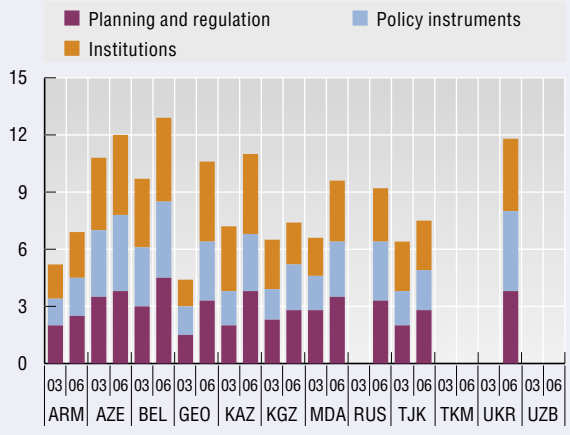
Box 1.4 How do EECCA countries see their own progress? Results from a self-rating exercise

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 were sent to EECCA countries for self-rating.

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

For some of these areas, a comparison of scores across countries reveals major discrepancies. On EQS, the score is 1-2 in Armenia and 4-5 in Belarus, even though the two 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, an observation that is reinforced by some of the results from the scorecards presented throughout this report.

Self-rating on environmental legislation, policies and institutions



Source: EECCA Countries and EAP Task Force Secretariat staff

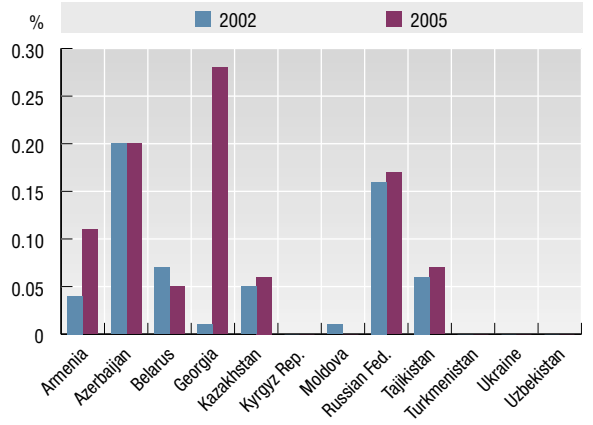
Decentralisation is deepening. New environmental management functions have been delegated to local public administrations, even though in several cases the fiscal autonomy of local authorities has decreased. While regulatory and compliance assurance functions generally remain a prerogative of national 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 remains 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. Co-operation with NGOs seems to be improving, although this 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, the budgets for environmental ministries 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. 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 environment ministry was almost halved and now has only 25 staff – far too insufficient to perform the ministry's functions. In several countries, such as Armenia, Azerbaijan, 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 Budgets on the rise
Budget of the Ministry of Environment as percent of GDP



Note: Data not available for Turkmenistan, Ukraine and Uzbekistan
Source: EECCA countries' responses to EAP Task Force questionnaire

MAIN BARRIERS

For environmental authorities, there are both internal 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, poor sequencing of reform, issue-specific and technocratic planning systems (that allow for little public participation and inter-sectoral co-ordination and co-operation), constant changes in the structure of the state environmental protection system, poor access to and management of information, and reform fatigue. Key skill shortages include working across policy areas (both within the environmental domain and across public policies) and understanding of decision-making by businesses. The shortage of financial resources

sustains a fear of reduced revenues if the present system of environmental management changed, and encourages 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. Rather than aiming for better regulation, there is a strong de-regulation drive, backed by intensive lobbying by industry and powerful line ministries.

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 (*e.g.* 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.

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2. Pollution prevention and control

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

This chapter focuses on policies to control urban air pollution. Indoor air pollution, however, is also a major contributor to the burden of disease, particularly in the poorer EECCA countries where many households (predominantly but not exclusively in rural areas) use dirt fuels for cooking and heating.[13] 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 report "Europe's Environment: the Fourth Assessment"), and includes input from WHO staff.

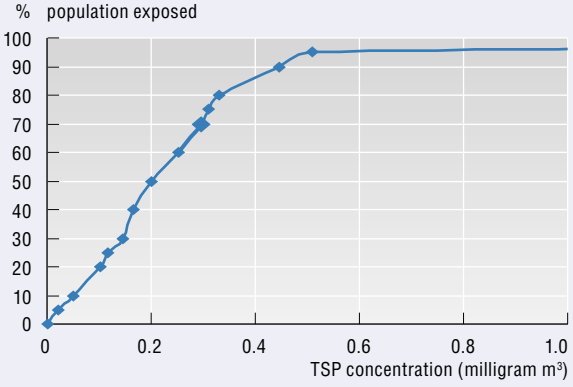
CURRENT SITUATION

Lack of monitoring data of sufficient quality precludes an in-depth assessment of the state of air quality in the EECCA region. Nevertheless, 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 NO_2 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 PM_{10} 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 risks in the urban population of the Russian Federation.

Cumulative distribution of population exposure to dust in the Russian Federation, mean 2002-2004



Source: WHO staff.

While the precise extent of air pollution damages in EECCA is unknown,[14] the main culprit is thought to be PM, mostly related to transport emissions. In addition to primary PM emissions (*i.e.* from combustion processes), it is important to control

13. Indoor air pollution also has a link to biodiversity. The economic crisis and the increase in fuel prices have led to the renewed use of dirty fuels, which has put increasing pressure on forests.
14. 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 of other pollutants that contribute to the production of PM (so-called PM precursors), such as SO_2, NOx and NH_3.

Air pollution is set to worsen in the region. Transport-related emissions, which may be responsible for over 80% of air pollution in EECCA cities, are rapidly increasing (EEA, 2007). Environmental impacts from industrial and power-generation sources declined 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) are increasing 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

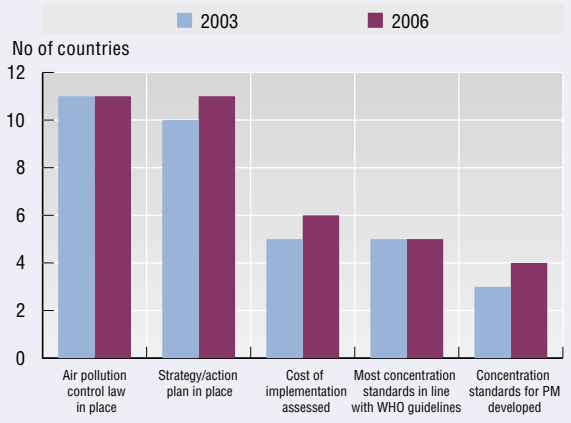
There is no evidence of accelerated progress in air pollution control. Overall, the problems identified in the EECCA Environment Strategy persist. EECCA countries have relatively well developed **policy frameworks** for air quality management. These frameworks have been updated in recent years and generally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

A large number of policy measures could be applied to manage air quality. Some of these 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**. The air quality standards that most EECCA countries use are still 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 EECCA 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.

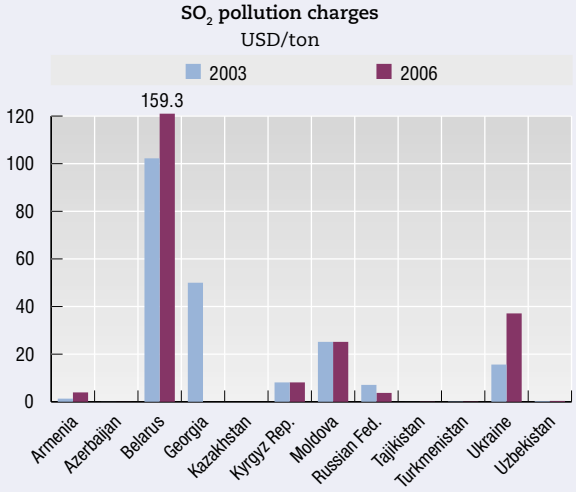
General issues of permitting, environmental impact assessment and economic instruments are discussed under Objective 1. In the area of **pollution charges** some, but limited, progress has taken place. Many countries report having increased the rates for pollution charges. For example, SO_2 and NO_x charges have tripled and doubled respectively in Armenia, increased by 55% in Belarus and by 37% in Ukraine. As a result these charges may start having an impact on air pollution, particularly in Belarus (where rates are USD 160/tonne of SO_2 and USD 480/tonne of NO_x) and to a lesser extent in Armenia, Moldova and Ukraine. This is not likely to be the case for the other EECCA countries: in the Russian Federation and Kyrgyz Republic, charges are only around USD 5-10/tonne, while in Azerbaijan, Tajikistan, Turkmenistan and Uzbekistan charges are below USD 1/tonne.[15] In any case, in no country has the system of pollution charges undergone the radical changes that are necessary to make them an effective pollution control instrument.

Some countries, like Azerbaijan, have developed **awareness raising** campaigns. But this seems to be the exception rather than the norm. Awareness raising is 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 PM10 monitoring in the Russian Federation (Moscow and Saint Petersburg) in 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 EECCA countries. (See Objective 6.1 for progress in ambient monitoring and Objective 1 for progress in 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 SO_2, according to data provided by EECCA authorities. For comparison, in 2004, SO_2 pollution charges in Slovakia were around USD 60 per tonne. 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 was applied to both the 2003 and 2006 pollution 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 hinder progress in other areas of environmental management. The economic crisis prevented political support for strong abatement measures in industry and energy utilities.[16] However, since in many EECCA countries economic growth has strongly resumed, there is now a window of opportunity to introduce abatement measures. Policy implementation is

15. For comparison, in 2000 the average for Lithuania, Czech Republic, Estonia, Latvia, Lithuania, Poland and Slovakia was around 45 USD/ton for SO_2 and 55 USD/ton for NO_x.
16. As discussed under Objective 5 (Finance), investments in air pollution control generally take place only after investment in water infrastructure, and when a certain level of economic development has been achieved.

also hampered by widespread violation of the law (related to both sociological and institutional issues) and weak inter-sectoral co-ordination.

A major barrier to improving air quality management may be one of approach. Air quality policy does not seem to be built around incentives – strategies are often declamatory, and implementation mechanisms tend to be 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 developing 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 agencies.

- 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 taxes on imported vehicles 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 co-ordination, 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 environment 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 co-ordination. Take full advantage of existing guidelines and opportunities for capacity building available through international processes.

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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. Moreover, 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. Reducing by half the proportion of the population that is without access to an improved water source between 2000 and 2015 is one of the original targets of the Millennium Development Goals. The companion target of lowering by half the proportion of the population that has no access to sanitation services was adopted at 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, the water challenge is most difficult in rural areas (see Box 2.2.4). The chapter is based on work undertaken by the EAP Task Force Secretariat (OECD, 2006) and includes data that became available in early 2007.

CURRENT SITUATION

The official MDG water indicators provided by the UNICEF/WHO Joint Monitoring Programme give a distorted picture of access to water supply and sanitation in EECCA. They suggest that the region is on track to meet the water supply target and that the proportion of urban populations having access to centralised services in EECCA countries remains at a 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 are 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 services. Significant additional efforts are required if the MDG targets are to be achieved, particularly in improving access to adequate sanitation facilities.

Figure 2.2.1 Continuity of water supply
Hours per day

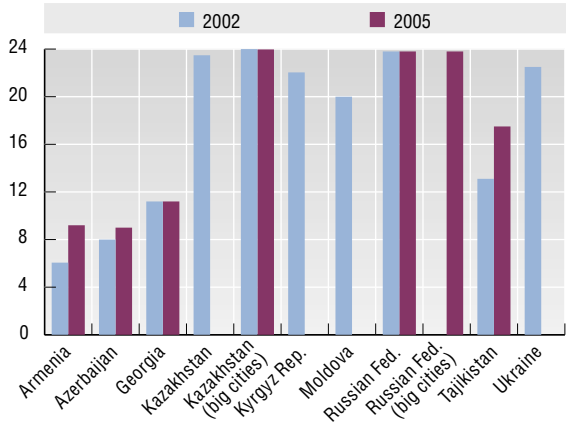
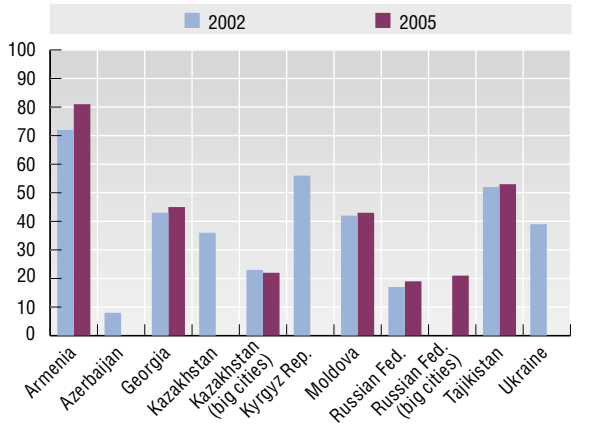


Figure 2.2.2 Water losses
unaccounted for water as % of total produced water



Source: EAP Task Force Water Utility Performance Indicator Database.

RECENT PROGRESS

Many EECCA countries have introduced 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 by Ministers in Almaty in 2000.

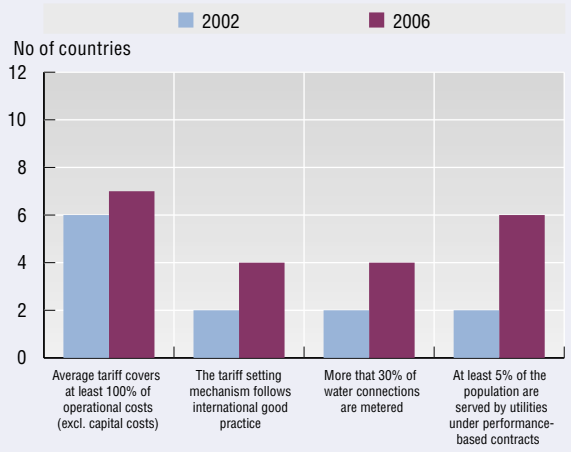
Many EECCA central governments have improved the **institutional and legislative framework** for the water sector. Some have developed legislation to better guide local level authorities, mainly in setting tariffs. For example, the Russian Federation and Ukraine have changed their tariff-setting frameworks 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 for 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 5 to 10 compared to 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 often linked to the visibility of WSS issues in socio-economic development plans and poverty reduction strategies where, up until now, little progress has been made in including water sector targets.

Institutional arrangements at local level remain inadequate. There has been little progress so far 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 improve the financial standing of water utilities, increased metering contributes significantly to also improving water coverage. But how can metering be promoted? Armenia has devised and implemented an incentive framework for households that encourages them 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 households that are willing to install 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 has helped to reduce excessive demand, energy costs and unaccounted-for-water remain 2-3 times higher in EECCA countries than in OECD countries.

Progress has also 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 EECCA countries. 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 and now focuses on practical measures that will support effective involvement of the private sector.

Box 2.2.3 Getting it right at the local level

In 2002 the West Siberian city of Surgut (population 282 000) launched 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 increased operational efficiency. At the institutional level, the enhancement of commercial, administrative and managerial capacities has led to better financial and operational performance. Higher tariffs, and the income they generated, have allowed the two municipal utility companies to service their debts. 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, every year the municipality publishes information in the local press 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 in 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 factors, which include institutional (unclear responsibilities), economic (high cost of providing "urban level" service to dispersed populations with little ability to pay) and capacity-related issues (communities with little access to expertise). It is generally accepted that little progress has been made in implementing 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 EECCA 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 improving the provision of water supply and sanitation. Increasing operational efficiency requires up-front investments. Central governments need to provide the finance for these investments, but often they do not trust local authorities due to their poor performance record.

In most cases, inadequate capacities are the main problem, 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 appears to be 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 to other ends.

The lack of information is another important barrier to faster progress, in several ways. In the area of rural water supply, even basic descriptive information is unavailable, which also contributes to rural water not being on central governments' radar screens. Moreover, the overly optimistic picture provided by the MDG indicators risk diverting the attention of international financial institutions (IFIs) and donors to other regions and bypassing EECCA countries.

WAYS FORWARD

- Provide predictable resources from central government for investment in water supply and sanitation infrastructure. Develop sector-wide financial strategies within the framework of integrated water resource management (IWRM) plans and integrate them into medium-term expenditure frameworks. Link financial transfers to local authorities to outputs, such as extended coverage and increases in service quality. Given budgetary restrictions and affordability constraints, 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).

- Provide an appropriate incentive framework for local actors and help them to develop their capacities. Establish responsibilities for rural WSS at central level and learn from available experiences to develop appropriate approaches.

- Reform effluent standards (currently too strict and not enforced) to make the cost of water treatment requirements more predictable for water operators.

- Improve local 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. Clarify the responsibilities of water utilities and municipalities (preferably through corporatisation of water utilities and the establishment of performance-based contracts). 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-national level.

FURTHER INFORMATION

OECD (2001), *Guiding Principles for the Reform of the Urban Water Supply and Sanitation Sector in the NIS*. Organisation for Economic Co-operation and Development, Paris.

OECD (2006), *Financing Water Supply and Sanitation in Eastern Europe, Caucasus and Central Asia*. Organisation for Economic Co-operation and Development, Paris.

World Bank (2006), *Monitoring What Matters: How to Tailor Millennium Targets and Indicators of Environmental Sustainability to Local Conditions in ECA*. World Bank, Washington, DC.

2.3 WASTE AND CHEMICALS MANAGEMENT

INTRODUCTION

Inadequate management of waste (particularly hazardous waste) and chemicals raises 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, particularly in the context created by the Kyoto Protocol and the associated Clean Development Mechanism. For example, capturing the methane produced in landfills can generate substantial income, more than enough to cover investment cost (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, the Stockholm Convention on persistent organic pollutants (POPs), and the Rotterdam Convention on prior informed consent.

In addition, the World Summit on Sustainable Development established the goal that, by 2020, chemicals will be used and produced in ways that minimise 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 in EECCA countries. This chapter draws heavily on the joint UNEP/EEA Report on Sustainable Consumption and Production in SEE and EECCA, on the Waste Chapter of EEA's report "Europe's Environment: the Fourth Assessment", as well as on EAP Task Force work on Financial Strategies for Waste Management.

CURRENT SITUATION

Inadequate information means that the extent and nature of the challenge posed by waste and chemicals in EECCA countries 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 shown 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, the large role that resource extraction industries (mainly metals and fuels) play in the economy results in high amounts of mining waste.

Waste and chemicals management in EECCA countries is becoming an even bigger challenge as the small but growing middle classes are increasingly adopting the consumption patterns of western Europeans. In 5 EECCA countries for which data are 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** are often a prerequisite for initiating action. Belarus, the Russian Federation and Ukraine now have 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 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. In most EECCA countries, however, separation at the source of different kinds of municipal waste is not taking place. A particular problem is the lack of separate collection and disposal arrangements for hazardous waste 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.

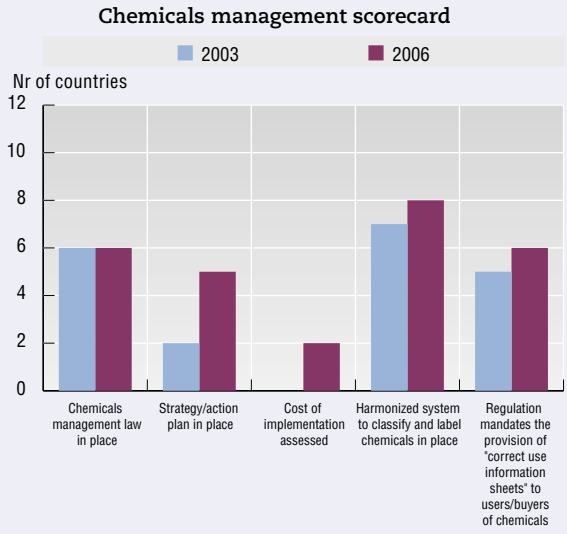
Safe land-filling remains a major issue. Municipalities still cannot afford major investments in waste management, and obstacles to inter-municipal co-operation remain. But there is finally some progress. Azerbaijan has built a modern landfill for hazardous waste with World Bank support. Belarus has 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 Box 2.3.2).

There has been little progress 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 EECCA countries have technical facilities for safe disposal of hazardous waste. In addition, no progress seems to have been made with on-site storage.

Box 2.3.1 Waste and chemicals management scorecards

While EECCA countries that have provided information for these scorecards may have interpreted the goalposts and their achievement in different ways, the scorecards suggest that progress is being made, particularly in the formulation of strategies. The cost of implementing waste strategies is rarely assessed, though, which is 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 CO_2 emissions, valued at EUR 3.3-5.2 million, generating a net income (after deducting 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 CO_2 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 having implemented most of the principles of the Convention in their national legislation and strategies, the implementation of hazardous waste strategies and legislation 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 being made in **chemicals** management, largely thanks to international support. Even though information on chemicals is particularly unreliable, it is improving – partly thanks to POPs-related projects. Armenia and Moldova have submitted national implementation plans to the Stockholm convention, and 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 Arctic 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 (EEA, 2007). 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 mean that responsibilities for cleaning up contaminated sites are often unclear, turning them into "orphan" sites.

Box 2.3.3 Pollutant Release and Transfer Registers – Making eco-efficiency gains possible

Pollutant Release and Transfer Registers (PRTRs) are databases of chemicals that are released 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 industrial facilities will benefit the most from PRTRs, 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 Swiss 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 co-ordination. 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 make them invest in waste management systems. At the same time this gives EECCA countries 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 intensive 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 (both in terms of volume and toxicity), hazardous waste management and safe disposal – including by making use of economic instruments and taking advantage of Kyoto mechanisms. Strategies should be supported by basic information on waste composition. Consider waste as a resource and maybe modernise existing reuse systems. 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. Make use of performance-based contracts that 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) in order to apply the polluter pays principle and cover the private good aspect of waste management. Ensure that those resources are invested in the waste system.

- Improve national and regional co-ordination 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.

FURTHER INFORMATION

UNEP/EEA (2007), *Report on Sustainable Consumption and Production in SEE and EECCA*. United Nations Environment Programme, Geneva, and the European Environment Agency, Copenhagen (forthcoming).

EEA (2007), *Europe's Environment: the Fourth Assessment*. European Environment Agency, Copenhagen.

OECD (2007), *Environmental Finance Trends in EECCA*. Organisation for Economic Co-operation and Development, Paris.

3. Sustainable management of natural resources

3.1 WATER RESOURCES MANAGEMENT

INTRODUCTION

Sustainable water resources management is essential for achieving the MDG focused on reversing the loss of environmental resources. Good water resources management requires not only infrastructure (for managing floods and droughts, multipurpose storage, water quality and source protection), institutional frameworks and management instruments, but also taking into account the political economy of water management.

Water is the basis for the development of key economic sectors in the EECCA region, starting with agriculture, and also including energy and industry. Although water supply and sanitation (see Objective 2.2) account for less than 15% of water uses, integrated management of water resources is increasingly important for delivering quality water supply and sanitation services. Ultimately, what is important is not water itself but water services, from irrigation to navigation to sustaining biodiversity. This shift in perspective 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 on 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 from large cities due to the discharge of insufficiently treated wastewater. Water is also polluted by heavy metals from mining and industry and by ammonia and nitrates from the fertiliser industry.

Despite high wastewater treatment connection rates, large amounts of wastewater are discharged untreated into EECCA watercourses as many treatment plants are no longer operational – around 80% in Georgia, Moldova and Tajikistan (EEA, 2007). Moreover, 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. However, all water resource management issues do not have the same importance in all EECCA sub-regions. The table identifies the most important water resource management issues in each sub-region. Water supply and sanitation are not included in the table, as this is dealt with elsewhere in the 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 is being made in **integrated water resources planning**, 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 practically all EECCA countries. However, they 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 co-operation, not on river basin management, although very few bilateral agreements have been concluded since Kiev. Kazakhstan, Turkmenistan 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 into the bylaws that developed its 2002 Water Code.

Little progress has been achieved in **integration**. Achieving *integrated* water resources management requires the commitment of line ministries. In EECCA, IWRM implementation has generally started with the establishment of river basin organisations (with different names) based on the old territorial branches of water committees.[17] This is a positive step, but early experience suggests that integration of other sectors into the work of these river basin organizations is not yet happening.

While the legal and institutional frameworks are relatively well developed and IWRM issues are often included in national development plans, gaps in **institutional capacity** and serious resource constraints have hindered the implementation of action plans in some EECCA countries, such as the Kyrgyz Republic, Moldova, Tajikistan and Uzbekistan.

There are also examples of successful community mobilisation, as in Uzbekistan and the Crimean peninsula. But the lack of social capital on which to base participatory water resource management is a real problem.

While **awareness**-raising campaigns for politicians and water professionals have taken place – for example in Kazakhstan and Armenia – in many cases there has been little progress in increasing the awareness of water management issues among major water users.

17. In Armenia, these organisations were established following hydro-geographical boundaries.

Box 3.1.2 Has EECCA met the 2005 Integrated Water Resources Management 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, incorporating the main elements of an IWRM approach.

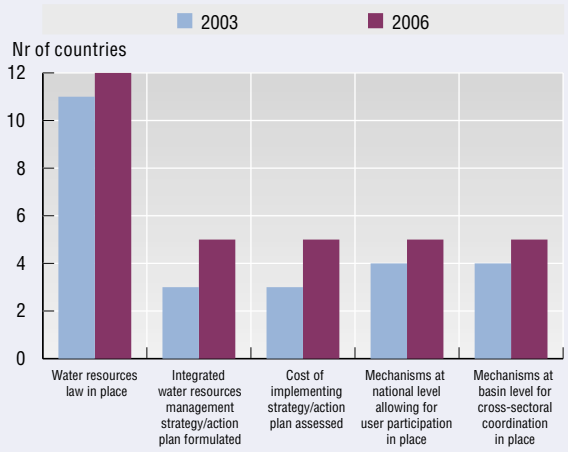
The other four Central Asian countries are in the process of preparing national strategies or plans (the Kyrgyz Republic, Tajikistan and Uzbekistan have developed "roadmaps" on the reform process towards IWRM), but require further work to live up to the requirements of an IWRM approach. Azerbaijan and 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.

Belarus, Moldova, Russian Federation and Ukraine were not surveyed or did not 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 is the case with the scorecards presented elsewhere in the report, countries may have interpreted the questions in different ways. Generally, their responses suggest that water resources management is an area lagging behind, but also one where progress is taking place, albeit slowly.



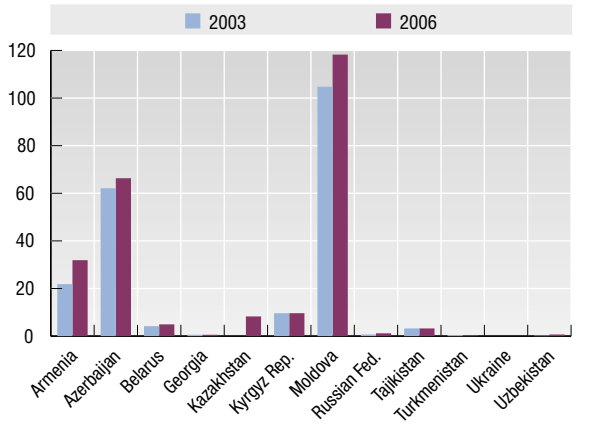
Source: EECCA countries' responses to EAP Task Force questionnaire.

Progress in **water pricing** is uneven, at best. Water prices were heavily subsidised in the region before 1990, yet in some EECCA countries there has been a marked increase in water prices during transition, resulting in lower water use. Currently, Georgia and Turkmenistan effectively have "zero tariffs" (less than USD 0.001/m^3) 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 – this has been the case in 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 18% increase for industry), Moldova (13% increase for industry), the Russian Federation (70% increase for industry and 17% increase for households), and Uzbekistan (roughly 150% increase for all users). Only Armenia, Kyrgyz Republic and Tajikistan seem to charge above USD 0.05/m^3 for irrigation. In EECCA, tariffs for industrial uses are rarely above USD 0.10/m^3 (see Figure 3.1.1).[18]

18. For comparison, in the late 1990s water prices in OECD countries were generally about USD 1-2 for households, USD 0.5-1.5 for industry, and less than USD 0.01 for agriculture (OECD, 2003).

Figure 3.1.1 Water tariffs for industrial uses
US cents per cubic meter



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 Integrated Water Resources Management plan

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. This work is being supported by international organisations and bilateral donors, such as Norway. Progress ranges from the incorporation of basic IWRM principles into 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 staff, OECD staff.

EECCA countries have a long history of water **monitoring**, which is biased towards monitoring larger rivers and emphasises upstream/downstream monitoring with regard to major cities. At present there are no signs that the significant decline in water quality monitoring experienced over the last 15 years is reversing.

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 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 co-ordination, lack of good local governance, unsafe dams and hydro-facilities, and unsound waterway and infrastructure conditions.

In 2006 the Russian government passed a Water Code that establishes and strengthens basin management bodies, including regional ones. The lack of co-operation between all stakeholders, however, has slowed 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 co-operation 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 on their way towards integrated water resources management. In many countries in the region there is still little political willingness to reform water tariffs and increase public participation. The water sector has not yet completed its transition to a "water services" mentality. Moreover, water institutions are weak, in particular with regard to "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 co-operation) and how these compare to investment costs.

WAYS FORWARD

- Advance with IWRM planning. Make the preparation of the IWRM plan/strategy a dynamic instrument that 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 targets are being met – including by developing skills for data collection and analysis.

- Work towards integration bottom-up, by promoting decentralisation (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 through pricing reforms to encourage technical and allocative efficiency, and also through public information campaigns.

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

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3.2 BIODIVERSITY CONSERVATION

INTRODUCTION

Biodiversity is a global public good. 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 well-being of their citizens.

EECCA countries are signatories of many biodiversity-related multilateral environmental agreements (MEAs) and are committed to achieving some demanding targets. Globally, the Parties to the Convention on Biological Diversity (CBD) are committed to halting 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 now include 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 environment ministers, however, find it very difficult to ensure implementation of biodiversity-related MEAs and achieve biodiversity targets, since many of the issues that need to be addressed are the responsibility 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 on 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 (EEA, 2007):

- Damage from long-range air pollution has stabilised.
- Agriculture still exerts much pressure on biodiversity, particularly in the core areas of production, such as Ukraine.
- Over-grazing is a major problem in several EECCA 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 fuel wood 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 the **basic legal and planning framework**. Most of the EECCA countries have some sort of environmental legislation that refers to biodiversity conservation and some have specific biodiversity legislation. All EECCA countries report having biodiversity strategies. Yet progress on this front seems to have stopped: half of the countries have not yet calculated the cost of implementing their biodiversity strategies and action plans.

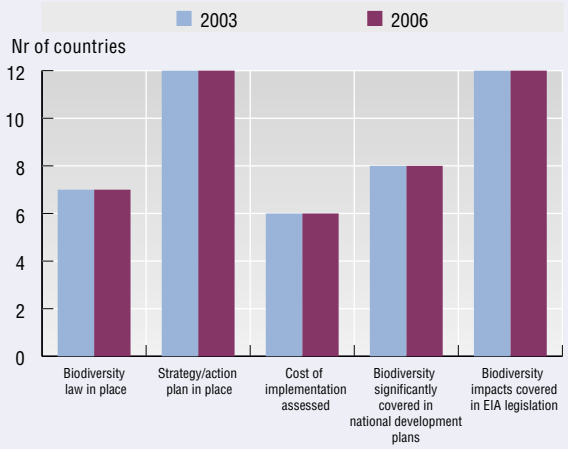
Little progress has been made in improving biodiversity **information**. After the collapse of the Soviet Union, funding was no longer available for data collection and much of the scientific work and data related to the environment were not updated on a regular basis. Lack of information has been used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

The **extent of area under protection** has increased in half of the EECCA countries, but progress varies widely. Kazakhstan, which was one of the countries with the least protected area in 2003 (2.4% of its territory), has augmented this proportion to 7.9%, while Moldova has not extended its network of protected areas. Also noteworthy is Azerbaijan, where area under protection is rapidly increasing. EECCA countries are taking part in the pan-European Ecological Network (PEEN) initiative, under which pilot projects have been launched in Azerbaijan, Georgia, Russian Federation and Ukraine.

Significant efforts are also 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 by 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/protected area ratio in the region). Nevertheless, national budgets for protected areas are still modest: spending rarely exceeds one dollar per hectare and in most countries there is less than one staff member per 1 000 hectares of protected land.

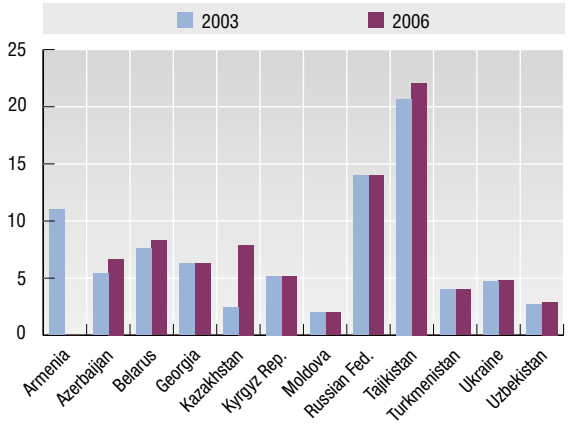
Box 3.2.1 Biodiversity scorecard

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



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

Figure 3.2.1 Area under protection
Percent of land area protected (IUCN cat. I-VI)



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

At present it is difficult to evaluate the progress that has been made in EECCA countries in **integrating biodiversity issues in national development plans**. Eight countries report that they already included biodiversity issues in socio-economic development plans (such as PRSs and NDPs) in 2003. This is a relatively high number of countries, and it is unclear to what extent biodiversity issues have actually been included in programme implementation in the different economic sectors. The other four countries have not made progress in biodiversity.

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 under way focusing on HNV farmland. Besides these and some assistance for organic farming, there are no actual agri-environment programmes in EECCA countries at present. (See Objective 4.4 for more information on agriculture and environment.)

A majority of EECCA countries have explicitly identified **invasive alien species** (IAS) among the threats to biodiversity in their country in their reports for the Convention on Biological Diversity. However, EECCA countries that have incorporated IAS issues into 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 being made in **raising awareness** of biodiversity issues. 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

In 2004, WWF initiated the development of a long-term and comprehensive action strategy for conserving and restoring biodiversity in the **Caucasus** ecoregion, a major global biodiversity hotspot Two international funds have been established for this purpose. The Critical Ecosystem Partnership Fund will provide USD 8.5 million in small grants over 5 years to support the efforts of grassroots NGOs in transboundary co-operation, 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, these countries entered into a partnership with 12 development agencies to set up and implement a USD 1.4 billion programme to restore, maintain and enhance the productivity of degraded land. The programme, which 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 as the EECCA Environment Strategy, the Kiev Resolution on Biodiversity represents a more concrete framework for work on biodiversity conservation. It calls for pan-European initiatives that will focus on the 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, raising awareness, and controlling invasive alien species.

EECCA countries have failed to meet the two targets of the Kiev Resolution on Biodiversity for 2006. Progress in HNV is particularly slow – no country has identified HNV areas. Progress in identifying PEEN areas seems a little more advanced – an indicative map has been completed for the Caucasus and priority conservation areas and potential corridors have been identified for that region, Azerbaijan is working towards establishing a national ecological network, 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 number of particularly difficult challenges. Biodiversity is still in decline, yet there is low public awareness of this loss. It is considered to be a low national priority and is receiving decreasing donor funding. Major problems are created by the perceptions 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 environment ministries in the region is also posing problems. While biodiversity specialists in EECCA have solid scientific backgrounds, their management, partnering and fundraising skills are insufficient. Their ability to work on integration issues (agriculture and environment, forestry and environment) is also limited. Particularly critical is the absence of expertise that is needed to clearly demonstrate and effectively communicate the costs associated with the loss of ecosystem services and the economic benefits that conservation and sustainable use of biodiversity can provide to the economy.

A major barrier is still plain lack of awareness, which can range from ignoring the real costs of neglecting the maintenance of ecosystem services (at the decision-maker level) to not understanding the concept of HNV farmland (at the technical level both in the agricultural and environmental sectors).

WAYS FORWARD

- Be realistic. Actions planned as part of the EECCA Environment Strategy may have been too ambitious.
- Prioritise "mainstreaming" work, including through developing capacity in economic analysis of ecosystem services.
- Develop policies for 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 in order 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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4. Environmental policy integration

4.1 OVERALL ISSUES

INTRODUCTION

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

A modern approach to achieving environmental objectives promotes synergies between policies, reduces inconsistencies, maximises policy effectiveness and/or service delivery, and provides a framework for solving potential inter-sectoral conflicts. This contributes to policy coherence and cohesion in government. 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 the integration of environmental concerns (sometimes known as "environmental mainstreaming") was particularly needed.[19, 20]

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 from UNDP and the Regional Environmental Centre for Central and Eastern Europe.

RECENT PROGRESS

Slow progress is taking place across a number of variables that make up the **institutional and strategic dimensions** of environmental policy integration (as opposed to the programmatic and operational dimensions). The EAP Task Force questionnaire explores, in a rather simple way, seven "integration dimensions" across four sectors. Out of the possible 28 "opportunities", in 13 cases one country has made progress, and in four cases more than one country has made progress. Most of those "opportunities" are covered in the scorecards presented for Objectives 4.2, 4.3 and 4.4. Overall, the basis for integration is 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, the ministry responsible for transport issues has not allocated environmental responsibilities – neither to a specialised unit nor across units.

19. 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).

20. 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.

Most countries have some sort of **environmental training** for sectoral ministry 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 now include **environmental targets**. The biggest progress in this area has been made with regard to agriculture strategies; Armenia, Azerbaijan and Tajikistan are examples. The transport sector clearly lags behind – environmental targets have been included in transport strategies in only 5 countries, while environmental targets have been included in the other 3 sectors in 10 countries.

In half of the EECCA countries, sectoral ministries do not provide **input for environmental strategies**, which makes it more difficult to ensure that environmental and sectoral strategies are aligned.

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 institutional and strategic dimensions analysed – for example, Kyrgyz Republic, Tajikistan and Uzbekistan are the only countries that have reported an environmental assessment of their energy and transport strategies.

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

More recently, **Strategic Environmental Assessment** (SEA) has emerged as a major tool for ensuring the integration of environmental concerns into plans and programmes. In EECCA, after four countries signed on to the SEA Protocol of the Espoo Convention in Kiev, several initiatives have been launched to support SEA development and implementation in the region. These initiatives are usually carried out as part of international projects involving UNDP, the 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 for local planning initiatives in several Russian oblasts. In addition, new legislation to support SEA has been adopted (Armenia) or drafted (Georgia). Despite the legal obligation to conduct an environmental assessment of plans and programmes, it has proven challenging for EECCA countries to align the Soviet-inherited system with internationally accepted SEA principles. Moreover, in the region there seems to be no real understanding of the requirements and implications of the SEA Protocol.

MAIN BARRIERS

One major barrier to improving environmental policy integration is the culture of limited inter-ministerial co-operation. But the current skill mix in environmental authorities also plays an important role. While experts in environmental authorities usually have a strong scientific background, they have limited expertise in economics, in understanding how policy is developed in sectoral ministries, and in linking environmental and sectoral developments – in sum, they lack the skills to make the case for environmental sustainability. Also, the ability to relate with stakeholders (whether the business community, civil society or, in this case, sectoral ministries) is still low in many EECCA 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 EECCA contexts. Existing guidance often mechanically extends project-level Soviet-based requirements to strategic activities. Other barriers include limited experience of environment officials with internationally recognised SEA practice, and limited openness of the planning system, which makes it difficult to carry out assessment and consult relevant authorities and the public during the elaboration of plans and programmes.

WAYS FORWARD

- Further develop inter-ministerial co-ordination 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 in order to align them with international practice (such as the EC SEA Directive) and with 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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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 to fossil fuel extraction and transport, and from 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 the EECCA region 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 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 in the EECCA region 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 a problem. Energy supply structures are mostly based on old-fashioned, inefficient technologies and a highly intensive supply pattern. 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 produced in new plants 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. Yet, overall, the region is not taking advantage of the global carbon market.

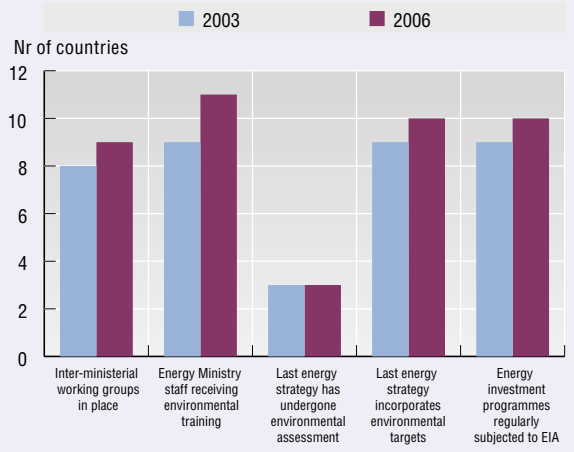
Little progress seems to have been made in **energy efficiency**. Most EECCA countries report having an energy efficiency agency – Georgia is one exception. But this does not seem to have translated into a much wider use of instruments to promote energy efficiency. Several countries do not yet have a national energy efficiency programme (i.e. Georgia, Turkmenistan and, chiefly, the Russian Federation). Armenia has passed an energy savings and renewables law, established a dedicated fund, and developed an energy efficiency programme. Seven out of the 12 EECCA countries report having energy standards for home appliances in 2003, and most of the countries in the region 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 measures (such as metering and information provision) are put in place. Indeed, in Georgia, electricity consumption has dropped from 200-300 to 150 kWh per month per customer following re-metering (Energy Charter Secretariat, 2005).

Electricity tariffs, and progress made in this area, vary widely across EECCA. Armenia and Moldova have the highest electricity tariffs in the region (some 6 usc/kwh), but they have not increased tariffs in nominal terms in the last three years, and so 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 its tariffs. Current levels average some 3 usc/kwh, but this is still only half of electricity tariffs for agriculture. The Kyrgyz Republic has also increased nominal tariffs (40% for households), but they remain very low at around 2 usc/kwh. By far the worst situation is 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 yet seem to be on a financially sustainable path in any EECCA 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 EECCA countries have some basic "environmental mainstreaming" elements in place. Georgia and Tajikistan in particular have made progress in this area. The scorecard suggests that particular attention needs to be paid to getting the next generation of energy strategies formally reviewed from an environmental perspective.



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

Most EECCA countries had a target for **renewable energy** in 2003 (Turkmenistan being the exception). Since then, Azerbaijan, the Kyrgyz Republic and Tajikistan have put in place national programmes 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 a resolution to develop wind power in Kazakhstan and the mapping of wind potential in Georgia and Turkmenistan.

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 Ukraine's energy savings could 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 Ukraine'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 co-ordination. But for the energy efficiency potential 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 by 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 in 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. Incentives distributed by a dedicated Fund is supporting this effort. Turkmenistan has rebuilt the Turkmenbashi refinery to comply with ISO standards, and Georgia's efficiency policy puts the emphasis on generation and transmission, not on the consumer end.

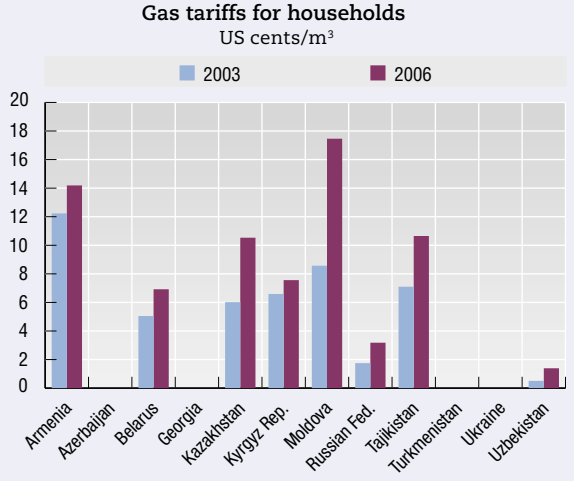
MAIN BARRIERS

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. At the same time energy providers lack resources to maintain energy infrastructure and social considerations are making price reform difficult.

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

Box 4.2.3 Household gas tariffs: Feeling the heat

Over the last three years there have been 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 is the case with electricity, gas is free for households in Turkmenistan. In all EECCA countries, gas consumption seems to be effectively decreasing. Under a January 2006 agreement with the Russian Federation, Ukraine receives Central Asian gas at 6 usc/m^3 and Russian gas at 23 usc/m^3.



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

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

An additional barrier to increasing energy efficiency in EECCA is a low level of awareness among consumers, vendors, and policymakers. Also, 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. Proponents of energy efficiency cannot compete

with the lobbying power of the fossil fuel industry, making governments more likely to promote investments in increasing supply than in reducing 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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4.3 TRANSPORT AND ENVIRONMENT

INTRODUCTION

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

Transport, as we know it today, is not sustainable. Poorly functioning transport systems have multiple and severe negative impacts, including fatalities from accidents, time lost in traffic jams, mortality and morbidity from air pollution, contribution to climate change, more noise, and fragmentation of natural habitats due to linear infrastructure (such as roads or pipelines). EECCA countries are faced with the challenge of reducing transport's irreversible damage to the environment and to human health, without losing the benefits of transport for society and economies. The 2002 World Summit on Sustainable Development emphasised the need for the development of sustainable transport strategies as well as for the deployment of investments and partnerships in sustainable transport systems.

This chapter draws on a number of documents, including the Transport chapter of the forthcoming UNEP/EEA report on Sustainable Consumption and Production in SEE and EECCA, and on reports prepared within 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 of the region (EEA, 2007) and the transport sector contributes around 8% of greenhouse gas emissions (EEA, 2007). In the Russian Federation, the external costs of motor transport have 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 by the fact that city centres (*e.g.* 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 are making matters worse. In Moscow, the private car fleet has increased on average by 7.3% annually in recent years and has reached 240 cars per 1 000 inhabitants. The Russian average is 160, three times the average of other EECCA countries and one third of the EU15 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 more than an 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 their riders in the last 20 years (UNEP/EEA, 2007). The decline of state-owned public transport systems has led to an increase of private operators, usually using minibuses, which is bringing new problems – particularly as regards safety.

RECENT PROGRESS

Strategic environmental **policy documents** tend to include transport as a priority, usually through the air pollution link. Existing transport strategies still focus largely on infrastructure development, although some of them also 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 tripled since 2003, and in 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.

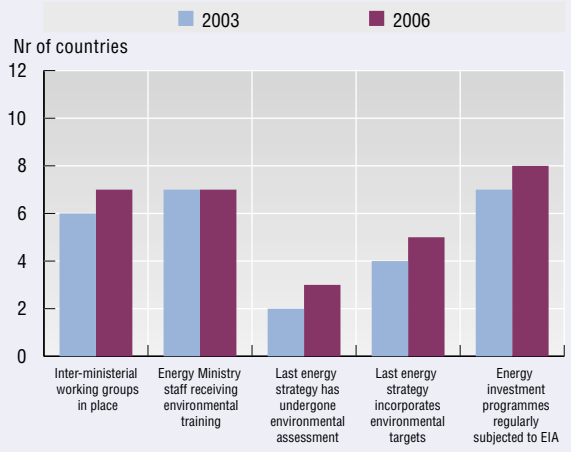
As many EECCA countries do not produce cars, import taxes have a potentially large impact in car fleet composition. However, current **import tax differentiation** is not always consistent with environmental objectives. For example, in Belarus, cars less than 3 years old have higher import taxes than 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 taxes decrease with vehicle age.

Leaded petrol has not yet been fully phased out in EECCA. Since 2003, leaded petrol has been phased out in Kazakhstan, the Kyrgyz Republic, Moldova and Uzbekistan. It is now legal only in Tajikistan and Turkmenistan. But leaded gasoline can still be bought on the black market in countries that have formally phased it out – such as Georgia (Tkhilava and Karanadze, 2006).

Not much progress has been made in improving **fuel quality standards**. For example, most EECCA countries follow GOST standards that set a maximum of sulphur content of 2 000 parts per million (ppm) for diesel and 1 000 ppm for petrol. The main exceptions are Belarus (which has standards of 350 ppm for diesel and 500 ppm for petrol) and the Russian Federation (with a 500 ppm standard for petrol and where 50 ppm diesel can be found in Moscow and St. Petersbourg). For comparison, EU countries are at 50 ppm and moving quickly towards 10 ppm by 2009. Moreover, fuel quality standards are often not enforced in EECCA countries, as authorities are poorly equipped to measure fuel quality.

Box 4.3.1 Transport and environment scorecard

This scorecard suggests that progress is slow in better integrating environment considerations into the transport sector. Only the Kyrgyz Republic and Tajikistan seem to be moving forward in this area. Glaring gaps appear in some fairly basic requirements, 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.

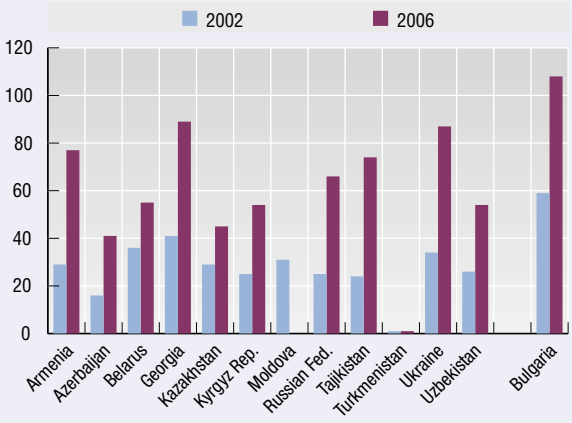
Over the last few years there has been a gradual introduction of European **vehicle emission standards**. The Russian Federation and Ukraine introduced EURO II in 2006, which affects more than 70% of the EECCA population and will have a knock-on effect via imports on countries that do not produce cars (UNEP/EEA, 2007). Laws revising emission standards have been passed or are being discussed in other EECCA countries, such as Armenia, Belarus and Uzbekistan. 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 EECCA countries – for example 25–30% of vehicles fail to

comply with GOST standards during random spot checks by the Moldovan State Ecological Inspection and the Road Police (Dimitrov, 2004).

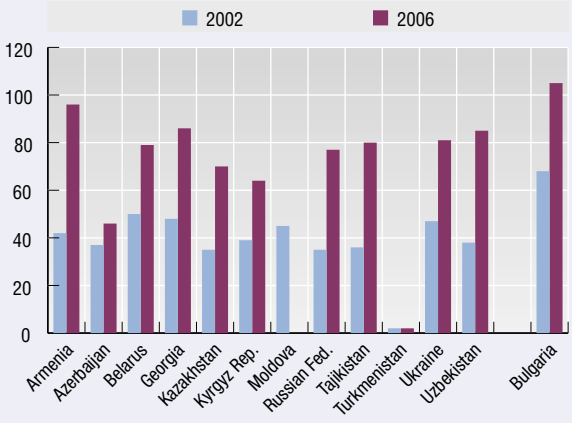
Box 4.3.2 Fuel prices

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. Yet the Kyrgyz Republic, which is 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.

Pump prices for diesel,
US cents per litre, 2002 and 2006



Pump prices for gasoline,
US cents per litre, 2002 and 2006



Source: GTZ, International Fuel Prices, 2007.

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

Progress in **vehicle inspections** is uncertain. Most EECCA countries have a vehicle inspection programme in place, which consists 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. Annual vehicle inspection is no 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 in Tbilisi; and improved co-ordination 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. While support for public transport is still significant – Tbilisi and Yerevan are investing in new buses – it does not suffice to cover operational, let alone investment costs. For example, only 25% of investment needs for new public transportation 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 are also being made to reform the national rail networks – 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 of urban transport: 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 co-ordination 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 co-ordination, experts suggest to establish a permanent inter-agency co-ordination unit at national level.

Source: Tkhilava and Karanadze (2006).

MAIN BARRIERS

The integration of environmental considerations into the transport sector is critically hampered by the dysfunction 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 the under-development of institutional structures that could deliver a more integrated and co-ordinated 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 these 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. Co-ordinate national policy approaches for 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 leaded petrol. 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 in public transport at municipal level on improving co-ordination among agencies (maybe through the creation of a permanent co-ordinating body) as well as on 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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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 into 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 12 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 wide range of agro-environmental and sustainable forestry practices whose introduction would 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

Trends are negative in most EECCA countries. Decades of input-intensive agriculture have led to widespread problems of soil erosion, fertility and humus depletion, compaction, mismanagement of dry lands, water logging and salinisation of irrigated lands. 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 fertilizer use and livestock numbers have dropped dramatically, although they are beginning to increase again.

Cutting of forests, even with illegal felling, remains below incremental growth throughout the region, so forested areas are increasing in most EECCA countries. Forest health varies from year to year, and 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 from villagers collecting fuel wood to large corporations bribing officials in order 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 privatisation of the means of agricultural production is not yet complete in EECCA and, even where privatisation has taken place, former collective farms have often not been restructured into individual family farms. 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 programmes to provide information to farmers (including through private providers) have been started – for example, World Bank or ADB supported efforts in Armenia, Georgia, Moldova, Russia and Uzbekistan.

Public participation in policy and programme formulation and in project development remains limited. While EECCA countries now have systems for environmental impact assessment – 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.

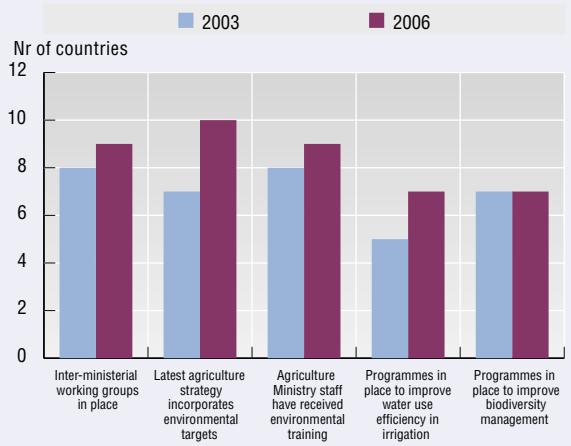
Considerable success in **nutrient management** is being achieved at the pilot project level, with GEF, World Bank and other donor support, such as the Danube - Black Sea Strategic Partnership Program and the Baltic Sea Regional Program, and projects like the Swedish SIDA projects for northwest Russia.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

Several EECCA countries have adopted strategies and programmes 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 be expanded by building on the successes of the initial set of projects, and intensified effort is required to address the specific challenges posed by salinity.

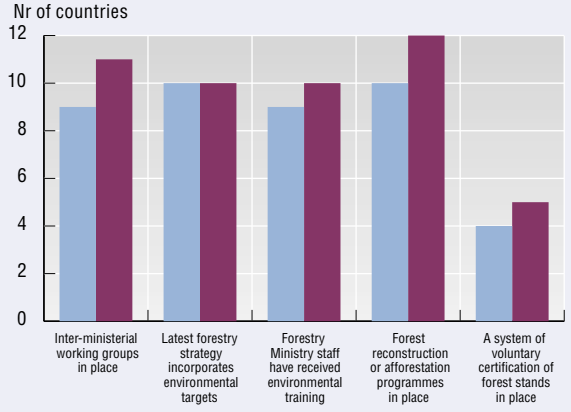
Box 4.4.1 Agriculture, forestry and environment scorecards

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 in agriculture – which is understandable, given that resource conservation has always been a key element of forestry practice.

Agriculture and environment scorecard



Forestry and environment scorecard



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

Integrated pest management (IPM) programmes have been successfully expanded in a few EECCA countries – especially in Uzbekistan, Turkmenistan and Moldova. The current low use of chemical pesticides in the other EECCA 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 is 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 in this area to date.

Progress is being made 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 Russian Federation, Ukraine and Belarus. It promises to be a powerful driver for sustainability, at least for the countries that export timber. Interest is also growing in other EECCA 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 environmental considerations 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	BLR	GEO	KAZ	KGZ	MDA	RUS	TJK	TKM	UKR	UZB
AGRICULTURE												
Soil protection	↓	↓	↑	↓	↓	↓	↓	↓	↓	↓	↓	↓
Nutrient conservation	↑	↑	↑	↓	…	…	↓	↔	↓	↔	↑	…
Water use efficiency	↑	↔	…	↓	↑	↑	↑	↔	↓	↔	↔	↑
IPM coverage	↔	↔	↔	↔	…	…	↔	↔	↑	↑	↓	↑↑
FORESTRY												
Protected areas	…	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑↑	↑
Forest health	↑	↔	↓	↓	↑	↓	↓	↔	↑	↔	↔	↑
Certification	↑	…	↑	↔	…	…	↔	↑	↔	↑	↑	…
Sustained yield	↓	↑	↑	↑	…	…	…	↑	↑	↑	↑	↑

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

In the 1980s there was growing concern over the indiscriminate use of chemical pesticides in cotton cultivation in Uzbekistan, which led to research and demonstration initiatives on biological methods. 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 in 90% of Uzbekistan's cotton fields, with effective management of pests. Not only has chemical pesticide use been reduced by 75% in the last five years, but the cost of biological methods has been less than 50% of the cost of using chemicals to control pests.

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, or insufficient 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, little progress in privatising 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 co-ordination 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 behaviour 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 subsidisation 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 co-operation – at the regional level, to ensure the exchange of experience between EECCA countries and with CEE countries, and at the global level, where donors can play a catalytic role.

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5. Finance for environment

INTRODUCTION

Limited availability of financial resources is clearly a barrier for achieving progress across environmental policy areas (whether air, water, waste or biodiversity). Improved 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 on 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 on the 2007 "Environmental Finance Trends" report (from which 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 EECCA region has slightly increased (in constant USD terms) in almost all countries. 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 EECCA 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 and Tajikistan, decreased in Belarus, Ukraine and the Russian Federation, fluctuated in Uzbekistan, and remained roughly stable in Armenia, Azerbaijan, the Kyrgyz Republic and Moldova.[21] As a share

21. Note that environmental expenditures can increase in absolute and per capita terms while decreasing as percentage of GDP – that is the case, for example, of Belarus.

of total government expenditure, environmental expenditures have increased in Armenia, Kazakhstan and Tajikistan and decreased in other countries (see Figure 5.2).

Armenia has made particular progress in raising the share of **environmental investments** in total environmental expenditures – from 6% in 2000 to 35% in 2005. This share has also increased in the Russian Federation, reaching 32% in 2005. Belarus and Kazakhstan keep it above 40%. In other EECCA countries, it remains below 15%.[22] 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, environmental investments have increased since 2000 in Armenia, Kazakhstan, Moldova, Ukraine and Tajikistan. At 4%, Belarus and Tajikistan top the table. Kazakhstan and Ukraine have caught up with the Russian Federation, reaching 2%. I Other EECCA countries display much lower levels – it below 0.6% on average over 2000-2005.

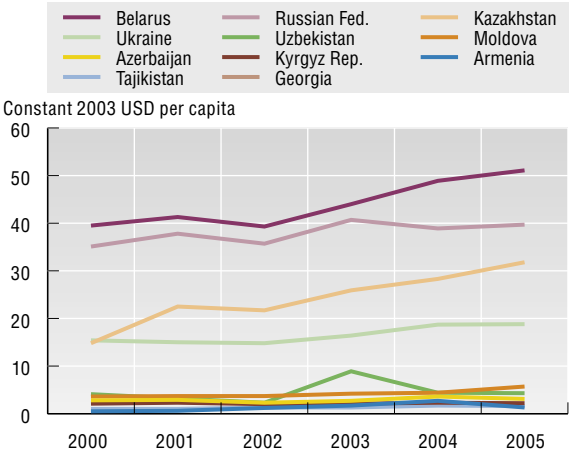
Sectoral allocation of resources is dominated by wastewater management, where practically all EECCA countries spend above 40% of their resources (although figures reported may include water supply investments). In addition, Armenia, Belarus, Kazakhstan, the Russian Federation, Ukraine and Uzbekistan spend an important share on air pollution control (between 20% and 43%); Tajikistan, Moldova and Azerbaijan on biodiversity and landscape protection (94%, 37% and 15% respectively); and Kazakhstan and Ukraine on waste management (18% and 15%). The public sector tends to spend resources mostly on wastewater management, while the private sector tends to spend them essentially 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 contribute over half of financial resources for the provision of water and waste services. Tariffs and collection rates have increased, and, in most EECCA countries, are coming close to covering 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 and Tajikistan, 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
USD per capita

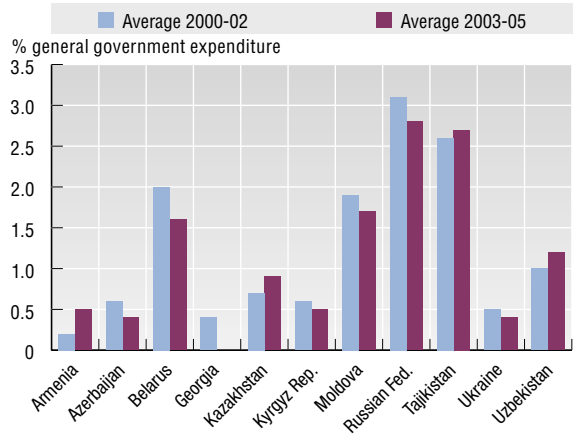


Note: Data for Georgia refer to 2001 only.

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

22. Tajikistan reported almost exclusively environmental investments expenditure aimed at the protection of biodiversity and landscape, these data however raise some methodological concern and would benefit from further analysis.

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



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

Inter-governmental transfers are the main recourse for filling 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. Progress in managing these transfers is becoming evident. 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 mechanisms 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 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 EECCA countries, environmental levies seem mostly testimonial, as they generate less than USD 1 million per year. Earmarking percentages seem to have increased slightly since 2002 – they are generally between 40% and 60%.

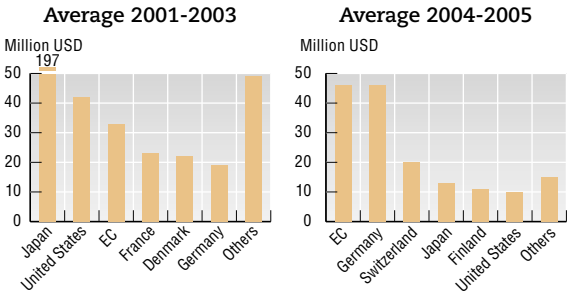
Not much progress has been made in tapping **local capital/financial markets**. Yet the recent revitalisation of financial institutions provides opportunities to mobilise local savings to finance environmental investments.

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 (bilateral and multilateral) reached USD 526 million in 2005 for the whole region.[23]

The structure of environmental assistance is changing. In 2001, bilateral and multilateral assistance for the EECCA region was on the same level, but by 2005 there was almost six times more multilateral assistance than bilateral assistance. IFI-channelled assistance doubled, while bilateral assistance decreased. This last fact can be attributed to a change in donor priorities – environmental assistance as a share of total bilateral assistance was reduced by half over the same period. With bilateral donors progressively exiting the region, the EC is assuming a more prominent role as the lead provider of environmental grant assistance for the EECCA region (see Figure 5.3).

23. Note that bilateral assistance is mainly in the form of grants or soft loans while multilateral assistance is mainly loans.

Figure 5.3 Environment-related ODA/OA by donor

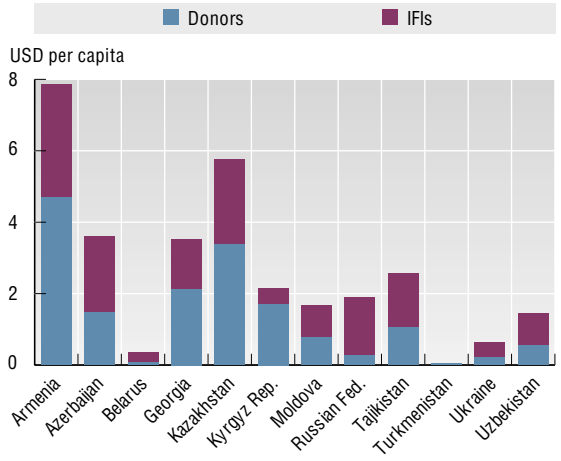


Source: OECD Aid Activity database, donors reporting.

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

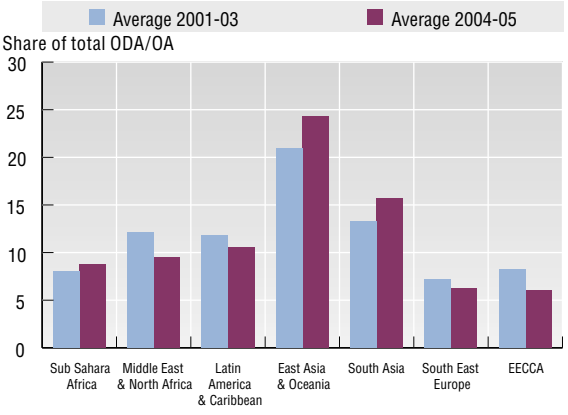
The share of environment-related assistance in total donor assistance for EECCA has decreased. It is now below 10%, the lowest percentage among all world regions (see Figure 5.5). International assistance (whether grants or loans) focuses largely on water-related projects. Biodiversity and solid waste management receive the lowest allocations (see Figure 5.6).

Figure 5.4 Environment-related international assistance by donors and international financial institutions
USD per capita



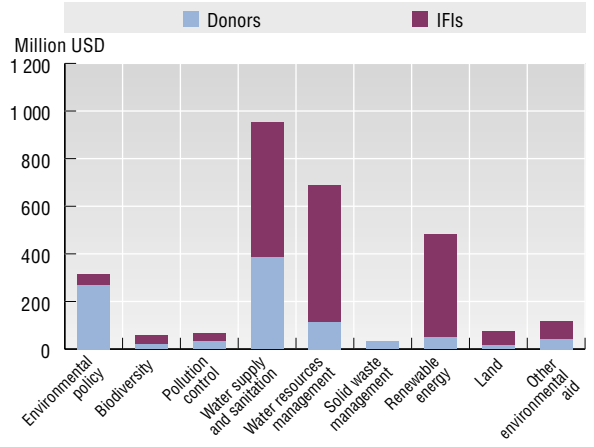
Source: OECD Aid Activity database, donors and IFIs reporting.

Figure 5.5 Regional comparison of environment-related ODA/OA
Percent of total ODA/OA



Source: OECD Aid Activity database.

Figure 5.6 Environment-related international assistance by policy area
Million USD



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 environment ministries, preparations for debt-for-environment swaps are a good exercise, as they require continued analytical and communication efforts with demanding partners, including the Ministry of Finance. However, the most promising innovative financing mechanism for EECCA is carbon finance. Even though the region has 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 for Asia Pacific the figure is 61%, and for Latin America, 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), but for roughly half of those strategies/action plans the cost of implementation has not been assessed, and this 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, and since 2004 this practice is a pre-requisite for adoption of strategic programmes in Belarus.

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 and also increases the effectiveness of the IFIs and improves the 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 the construction of 3 new ones. Bundling together the investment needs of five small municipalities has made it possible to attract an EBRD loan of EUR 7.2 million, together with grant co-financing of EUR 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 Armenia, Kazakhstan, Moldova and Ukraine, have shown 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 analysed in detail and calculated ex-ante, this information is not available for 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 better 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 EECCA countries claim that their investment programmes are fully funded, notable exceptions being Georgia (only 2 out of 9) and the Kyrgyz Republic (11 out of

16). It is generally recommended that a specialised unit in the environment ministry selects the projects, while project procurement should be done outside the Ministry. In EECCA, the number of countries using such specialised units has increased from 5 to 7 between 2003 and 2006; only 2 of the 7 units also do procurement.

Environmental funds in EECCA do not play the same role as in some CEE countries, and if they are poorly managed in the EECCA region, they risk 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 USD 0.3 million). Most EECCA countries have a small number of environmental funds (1 to 4). The countries with a greater number of environmental funds have started to reduce them – for example, the Kyrgyz Republic has reduced their number from 10 to 8 and Moldova from 7 to 4. As environmental funds generally manage modest resources (less than USD 0.4 million on average, with as little as USD 17 000 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 that had been carried out and an extended policy dialogue process involving different ministries and stakeholders made it possible to convince donors and IFIs to lower their expectations in terms of achievable wastewater treatment objectives. With this approach, it was possible to convince the Ministry of Finance that central budget support for water supply and sanitation should be extended, and that there was room for increasing water tariffs if combined with a social protection package. It was further possible to identify priority investments (some of which are now included in the EBRD pipeline) and technical assistance needs (some of which are being considered for funding by UK DFID).

Source: EAP Task Force Secretariat staff.

Box 5.3 Learning from students

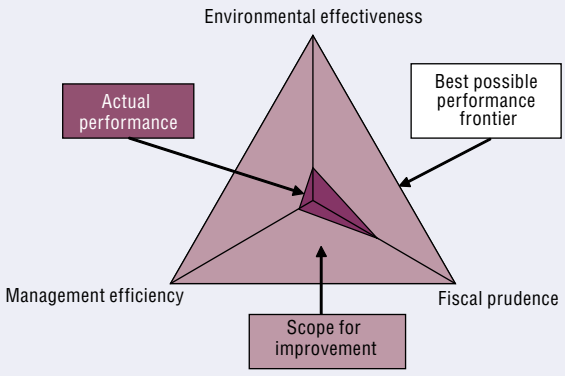
International training events offer a rare chance to "learn from students". In a training event organised by the OECD/EAP Task Force, Moldovan officials on managing public environmental expenditure programmes provided the following insights:

- 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 examples of successful change in other countries is a good motivator.

Source: OECD (2007a).

Box 5.4 How are environmental funds performing?

The OECD *Good Practices for Public Environmental Expenditure Management* represent a benchmark for assessing 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 from the World Bank) has established the Municipal Development Fund with responsibility for co-ordinating 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 co-ordinate 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 co-ordination at the country level. They still provide limited co-financing grants. These are important, since 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 associated with donor grants in order to be 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.

- Work towards improving the efficient use of mobilised resources, taking into account available international guidance. 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 co-ordinate 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 for identifying 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 co-ordination at the country level around country priorities.

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6. Environmental information and public awareness

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 for supporting 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 for making progress in most objectives of the EECCA Environment Strategy. Good and timely information is needed to support policy development and implementation across different policy areas, guide allocation of financial resources, 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 in order to be able to fulfil reporting obligations to international agreements, such as the several Rio and UNECE conventions. Indeed, a weak environmental analytical and information base often acts as a barrier to achieving 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 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 co-ordination 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 co-ordination seems to be taking place in most other EECCA countries.

Not 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, particularly in the area of monitoring, relate to sampling strategies and quality assurance and control procedures, often non-existent.

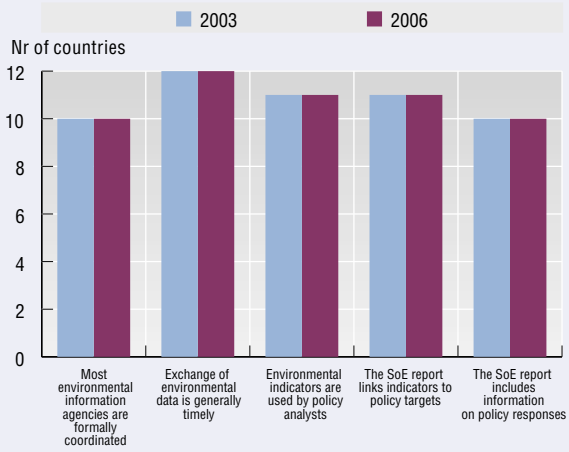
Overall, progress in environmental **monitoring** is mixed. There has been little progress in monitoring priority setting, with the exception of Belarus. Progress in harmonisation has also been slow – for example, air quality data generated by hydro-meteorological services and ministries of health are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

Some significant efforts are nonetheless being made. Armenia, Azerbaijan and Uzbekistan have developed, or are in the process of developing, monitoring plans. Armenia, Belarus, the Russian Federation and Tajikistan have installed a number of new air quality monitoring stations. Funding for monitoring has increased seven-fold in the Russian Federation, and Armenia has earmarked USD 510 000 for air and water monitoring and USD 530 000 for retooling the monitoring system and laboratories in 2007-2008. Thanks to these efforts, monitoring of fine particulate matter (PM_{10}) has finally started in the region – in Moscow since 2004 and in Minsk since 2006. In addition to collecting 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

While all EECCA 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 more accurate data based on measurements rather than relying almost exclusively on indirect estimates of emissions. In countries where self-monitoring produces reliable data, institutional and methodological shortcomings and unawareness among all actors result in data not being analysed and used. If this problem is addressed, public policy could benefit of better self-reporting data for identification of environmental priorities, design of thematic strategies, larger use of information-based instruments (such as PRTRs or simpler "name and shame" schemes), and guiding inspection efforts. Fiscal authorities could also use the data to detect possible fraud. Another related policy instrument – voluntary corporate reporting – has been recently introduced in the Russian Federation and its concept is now better understood in other EECCA countries, particularly among private companies, which have taken note of the potential for benchmarking and for identifying cost-savings.

Source: EAP Task Force Secretariat staff.

Box 6.1.4 Making better use of environmental information

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, there are problems with getting the information together (lack of systematisation, information scattered across institutions, restricted information flows) and not knowing what to do with the information (absence of communication strategies, unclear target audiences). These problems are the key barriers to making environmental information work, in this case to promote environmental awareness.

Source: UNEP (2005).

Uzbekistan, with UNDP support, has launched 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 making 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 an information bulletin on the state of the environment. These products will allow easier access for policy analysts and other users to environmental information, including not only information on the state of the environment, but also data on 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, the 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 are 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 still recorded on paper. Nevertheless, the country is doing a good job in maintaining and publishing environmental statistics and it is making an increasing number of information resources available online. Although in many EECCA countries the publication of the national state-of-the-environment report serves as a driver for environmental data co-ordination and exchange, this has not yet resulted in the creation of centralised electronic databases. Environmental statistics data are frequently published in statistical yearbooks and specialised environmental statistical compendiums. 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 programmes. 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 underway in several EECCA countries. 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.

There has been much progress in website-based communications in EECCA. Several countries in the region have developed websites to provide environmental information to the public. For example, Azerbaijan has launched an environmental electronic information centre where a state-of-the-environment bulletin is posted daily. Yet these websites are not fully used for communicating environmental information, such as statistical data, environmental analyses, strategies or programme implementation reports.

MAIN BARRIERS

In environmental monitoring and information management, lack of financial resources is clearly a major impediment, for example for upgrading monitoring equipment and computer networks. But cultural barriers are equally important. These can include attitudes that see information only as an instrument of power, requiring secrecy, that the administration should not share with the public.

Lack of demand for environmental information from policy-makers is a major issue. Information is not always considered to be a management tool. There is a latent conflict between "monitors" (who focus on collecting data for databases) and "communicators" (who put the emphasis on getting information that is truly useful).

WAYS FORWARD

- Work on better understanding the demand and use of information in order to make environmental information systems more demand-driven and user-relevant so that they can meet policy and operational needs. 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 a review of the 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 to handle the co-ordination of data flows or creating an environmental agency in charge of information collection, treatment and processing of environmental information.

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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 and 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 in this field under the Aarhus Convention. The Convention – formally known as the 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 the signatory countries and public authorities obligations regarding access to information, 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 the European ECO-Forum, input from the Regional Environmental Centre for Central and Eastern Europe (REC) 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 in EECCA.

In the region, 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. With regard to 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 has been Belarus' ratification of the Espoo Convention.

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

Box 6.2.1 Aarhus Convention: Implementation in EECCA

In 2005, the UNECE Secretariat assessed the implementation of the Aarhus Convention on the basis of reports prepared by signatory 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.

The Aarhus Convention is built around three pillars: access to information, public participation, and access to justice. 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, and the Kyrgyz Republic, Tajikistan and Turkmenistan seemed to have made the least progress.

A significant problem in EECCA countries is the failure to introduce legislation for implementing the Convention, even if under their constitutions the Convention applies directly and/or has precedence over national laws. This would allow for the introduction of currently missing procedural mechanisms. Other key challenges include funding shortages and 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 at national level are now mandatory in six countries (Belarus, Kazakhstan, Kyrgyz Republic, Russian Federation, Ukraine, and Uzbekistan) and are operating on a permanent or ad hoc basis in eight countries (Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyz Republic, Russian Federation, Ukraine, and Uzbekistan. Advisory boards have also been set up in several countries at sub-national levels, such as at river basin level. However, legal frameworks governing the activities of 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 necessary for public participation in 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. Even if the national reports appear regularly, not enough copies are printed (due to shortage of financial resources) in practically all the EECCA countries to satisfy demand. Examples of progress include the now regular preparation of SoE reports in Uzbekistan and Tajikistan, and the dissemination of SoE reports by electronic means in Armenia and the Kyrgyz Republic. There is also an increasing popularisation of SoE reports. Beyond SoE reports, other official environmental information is not always easy to access.

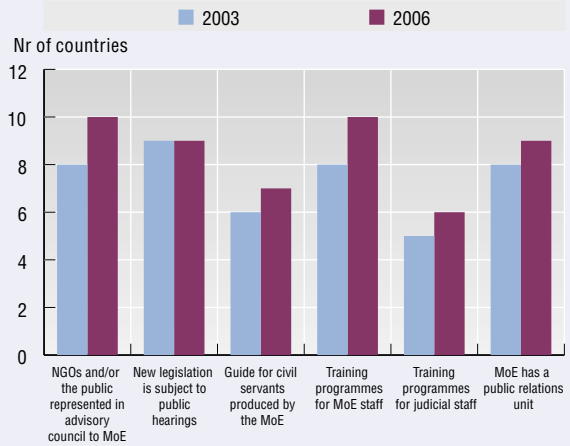
EECCA environment ministries are making increasing use of **websites** to disseminate information and raise awareness (a precondition for real public participation). Websites for environmental information have recently been created by environment ministries in Moldova, Tajikistan, and Uzbekistan, and regular website updates are now being made in Armenia, Georgia, Kazakhstan and Uzbekistan. As a result, there are now 11 environment ministry websites (not in Turkmenistan), and 10 of these are updated regularly (not in the Kyrgyz Republic). However, the quality of these websites (content, user-friendly language) is a concern.

EECCA environment ministries 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 deteriorated in Belarus, however, where such training programmes have been terminated.

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

Government/NGO collaboration is increasing – for example the work NGOs are doing 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 are receiving 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) – and with support from Royal Haskoning and the REC and funded by Europe Aid – carried out a regional project to foster implementation of the Aarhus Convention. It aimed to do this 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 1 000 officials and NGO members trained), and the creation of networks of trainers and journalists.

Examples 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 of 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 compared to 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 in the region (including lack of financial resources), the low profile of public participation issues and, in some cases, to a resistance to public participation. While the principle of public participation is formally accepted in most EECCA countries, lack of public participation skills among public officials and the absence of regulations for implementing the Aarhus Convention are impeding the development of public participation. 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 local administrations.

A negative development is that external donors are losing interest in supporting public participation programmes in the EECCA region. For example, in some cases this loss of support has forced RECs to change the focus of their work, which originally was to support civil society's participation in environmental decision-making.

WAYS FORWARD

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

- Issue or clarify implementation regulations for 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 these procedures.

- Develop awareness-raising and training programmes for public officials on public participation in environmental decision-making – including training for judicial officials and parliamentarians. Among officials in environment

and justice ministries and in the judiciary, and among legal professionals and NGOs, initiate concerted efforts to enforce the public's rights and remove barriers for access to justice.

- 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 information concerning 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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6.3 ENVIRONMENTAL EDUCATION

INTRODUCTION

Educational initiatives can both promote environmentally-responsible behaviour and represent an effective tool for developing policy mixes targeted at improving the management of particular problems (such as water resources or waste).

The UN Decade on Education for Sustainable Development runs from 2005 to 2014. While, formally, the EECCA Environment Strategy focuses on environmental education, at the Kiev Conference environment ministers also adopted a Statement on Education for Sustainable Development. Thus progress in education for sustainable development also contributes to achieving Objective 6.3 of the EECCA Environment Strategy. In 2005 EECCA countries adopted the UNECE Strategy for Education for Sustainable Development.[24]

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

EE/ESD are not restricted to formal education or to school children and young people. This is continuing education and involves broad public awareness-raising and education on environmental management and sustainable development for all ages.

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

24. 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.

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; for example, a draft law on ESD is now being considered by the Georgian parliament.

Institutional responsibility for environmental education is still attached to environment ministries in most EECCA countries – exceptions being the Russian Federation and Ukraine, where responsibility has passed to the education ministry.

Many national **programmes** and plans include support for environmental education – examples include Kazakhstan's Concept on Environmental Education, and Armenia's and Turkmenistan's NEAP. ESD, however, 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 formally made this separation.

Environmental education is well established in the **education systems** across the EECCA region. Environmental education is present in higher education in all EECCA countries and in primary and secondary 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. EE textbooks and other materials have been developed, for example in Armenia, Azerbaijan, Kazakhstan and Uzbekistan.

Insufficient attention, however, 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 exception is the Centre for Environmental Education established by the environment ministry, CAREC and OSCE in Tajikistan.

Awareness-raising campaigns often take place within the framework of international projects – for example POPs or ODS. Aarhus Centres (on environmental information) or information centres of environment ministries also play a role. Indeed, a lot of information is available, but not yet through official portals and publications, including catalogues. Not much has been done in assessing the quality of these 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 is an exception. The lack of budgetary stability to support education initiatives represents a real risk for their continuity in the near future.

There is **co-operation with NGOs**, and multi-stakeholder bodies have been established in several EECCA countries (the Kyrgyz Republic, Moldova and Ukraine). An Interagency Commission on Implementation of the UN Decade on ESD has been established in Armenia. In Central Asia, an interstate working group is bringing together NGOs and academics in addition to education and environment ministries. Hearings, meetings and consultations on environmental education and sustainable development have taken place, for instance in Kazakhstan, Kyrgyz Republic, Russian Federation and Ukraine.

Box 6.3.1 Taking advantage of available tools – the Green Pack in EECCA

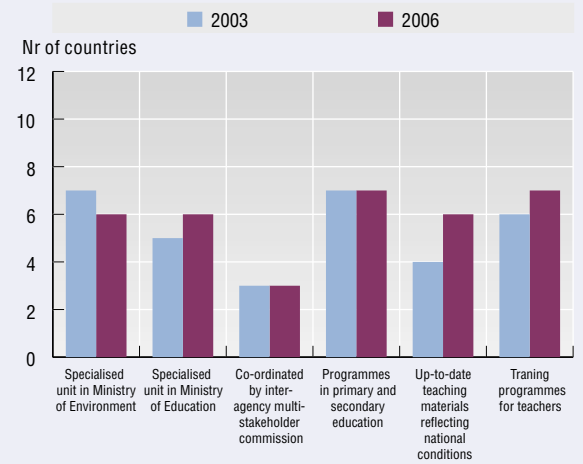
In 2000 the Regional Environmental Centre for Central and Eastern Europe started to develop the Green Pack – a multimedia environmental education kit primarily intended for primary school teachers and their students. The Green Pack was first used in Poland, Hungary and Bulgaria. In 2004 it started being used in the Russian Federation. With support from the Toyota Environmental Activities Grant Programme and the Finnish environment ministry, the Green Pack was introduced initially in Moscow and St. Petersburg, and there are plans to take it to Komi, Western Siberia and the Russian Far East as well. In 2005, the Green Pack 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. According to country responses, Tajikistan has closed the specialised unit for environmental education in the environment ministry, while Georgia has set up such a unit in the education ministry. Azerbaijan and the Kyrgyz Republic have developed teaching materials and established training programmes for teachers in environmental education.

The UNECE Secretariat is working on monitoring progress on the broader field of education for sustainable development.



Source: EECCA country responses to OECD questionnaire.

A **transition to ESD** is taking place. Sub-regional conferences on education for sustainable development 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. In Belarus, ESD principles are included in the National Strategy on Sustainable Development and the education ministry has created a steering board on ESD. Consultations have taken place in Kazakhstan, Kyrgyz Republic, Russian Federation and Ukraine. Programmes are being launched. For example, 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. Also, 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 co-ordinated and implemented by the education and environment ministries. 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 *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. There is still a need to change the focus from "naturalistic education", based on old textbooks, to ESD. Success has been possible thanks to the good collaboration between environment (very supportive) and education (more reticent) departments. Another important factor for success has been the explicit strategy of NGOs to keep good relations with government, for example by including 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 trend in EECCA has been to change the name from environmental education (EE) to education for sustainable development (ESD) without building up the economic and social components of ESD. In addition, results on the ground are still few and far between – ESD at the level of schools has been introduced only in a few EECCA countries, by a few teachers and around teaching programmes developed by those teachers (rather than on national programmes).

MAIN BARRIERS

The 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 co-operate with the environment sector. Curricula in EECCA are heavily loaded, with little space for new subjects. The different levels of the education system are not well co-ordinated. 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 even though EECCA countries have a long tradition of environmental education. 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 patterns. The concept of sustainable development is still poorly understood in the region, and limited to nature conservation and pollution prevention.

Another basic barrier results from deficiencies in practical educational and training materials. For example, available resources tend to be old and not systematised.

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

WAYS FORWARD

- Further promote co-operation between education and environment ministries. 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 as part of 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 make use of 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 NGOs to take part in the development of ESD programmes.

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

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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, climate stability and integrity of the ozone layer are global public goods. Management of these issues is more efficient if actions are co-ordinated between countries. Environmental co-operation and diplomacy are also important to avoid conflicts and can in certain cases be used to facilitate political co-operation.

Co-operation often takes place within 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 within 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 solving 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 at the Kiev Ministerial Conference. A number of Parties (particularly EECCA countries) have tended to ratify conventions/protocols without having the necessary changes in legislation or implementation provisions in place. Nonetheless, 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 is possible only for Parties to a convention. However, it seems that recently countries are abandoning this practice and do not proceed with ratification until they are fully prepared for implementation.

Beyond ratification, the need for better **compliance and implementation** is widely recognised. 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 progress in implementation impossible. Also, failure to meet reporting requirements hinders the operation of the compliance mechanisms. Countries that show non-compliance do not always engage in an active dialogue with the compliance/implementation committee and do not keep it informed of their progress towards achieving compliance.

Among EECCA countries, there have been no new ratifications of the UNECE Convention on **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 being made in air quality monitoring according to the air convention requirements, even by non-Parties to the EMEP protocol. EMEP monitoring stations are being established 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 establishment of new joint bodies (such as the Chu-Talas Rivers Commission). A promising example of co-operation 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 these, 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.

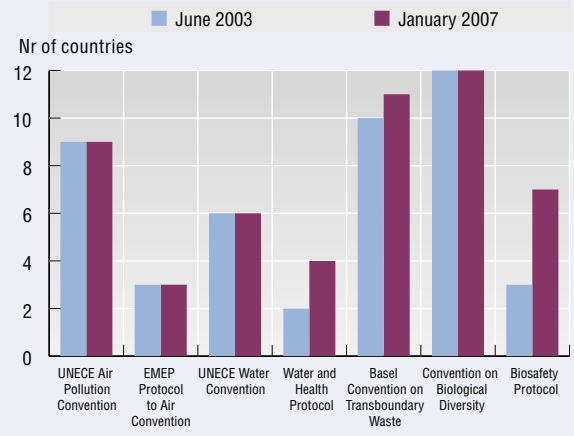
All EECCA countries are Party to the Convention on **Biological Diversity** (CBD). Since 2003, four EECCA countries have ratified the biosafety protocol – Armenia, Azerbaijan, the Kyrgyz Republic and Tajkistan. Only seven EECCA countries have submitted the third national report to the CBD Secretariat, 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 it 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, which 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 obligations – the three countries were several months late with their submissions of national communications due in January 2006.

Box 7.1 Multilateral environmental agreements scorecard

Ratification of multilateral environmental agreements is a very limited measure of progress in environmental co-operation. 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.

Ratification of multilateral environmental agreements



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 region, the four EECCA countries (along with 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 implementing the UNECE Convention on Environmental Impact Assessment in a Transboundary Context. Oil pollution is one of the most significant pressures in the Caspian Sea area, but low penalties for oil pollution and little government control have resulted in little incentive for oil companies to minimise discharges to the environment. The Commission for the Protection of the Black Sea is supporting projects and the development of formal co-operation to deal with some of these issues.

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

As economic activities are putting growing pressure on the EECCA coastal zones and seas, many ecosystems have lost biological richness and the 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 because of invasive alien species – a foreign jelly comb may cause losses of over EUR 4 billion per year to the Caspian fishing industry. The introduction of invasive alien species continues at a steady rate. The Barents and Russian Arctic seas are particularly vulnerable to impacts from hazardous substances, especially persistent organic pollutants. Pollution from the oil industry is threatening the Caspian Sea's environment and its biodiversity. While this is still a localised problem at present, it will become far more widespread as oil exploration and production in the region increases, and single hull tankers are still permitted in the EECCA seas. Despite these growing concerns, little progress is being made on co-ordinated monitoring at the regional sea level.

Source: EEA (2007).

MAIN BARRIERS

Low rates of ratification of multilateral environmental agreements in EECCA countries can be explained by a number of weaknesses, in particular by low political commitment and insufficient awareness of MEA obligations and their increasing complexity; inadequate technical, administrative and financial capacity; and a lack of co-ordination among relevant national authorities.

Implementation is hampered by unclear national legislation, unreformed policy instruments (such as water quality standards), poor co-ordination 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 also a major barrier – even the cost of translating documentation is a problem. In addition, inadequate assessments of the costs of

data collection, analysis and reporting have led to the termination of these activities after international assistance ended.

WAYS FORWARD

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

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

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

- 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*. European Environment Agency, Copenhagen.

UNECE (2007), *Implementation of UNECE Multilateral Environmental Agreements*. United Nations Economic Commission for Europe, Geneva.

8. 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 – 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.

Most EECCA countries lack the strong drivers for environmental improvement that exist in western countries (public demand, price signals) and Central European countries (EU accession requirements). The opportunities offered by renewed economic growth – both for carrying out environmental investments and for getting the prices right – have not been fully used in EECCA countries. The governance situation, given uneven progress in public administration reform and in tackling corruption, often does not support modern environmental management approaches. Despite their diversity, EECCA countries still share a common regulatory and managerial heritage that continues to offer opportunities for learning from each other's 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 in compliance, water supply and sanitation, water resources management and agriculture. Less progress seems to have been made in waste management, biodiversity, transport and energy efficiency.

Progress is rarely consistent – there is little evidence of countries taking a coherent approach to reform for any single policy area. This lack of consistency 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 regulations for implementation 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 different policy areas offers some valuable insights. One interesting finding concerns 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 interesting finding concerns the relationship between environmental authorities and line ministries. While it is increasingly recognised that progress in 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. At the same time, progress in this area is, to a large extent, contingent on securing commitment at a higher level of government and creating better incentives to work horizontally.

On the surface, progress does not seem to have accelerated after the Kiev Ministerial Conference in many environmental policy areas. Indeed, in some cases there has been regression, with the authority and capacities of environmental agencies 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 much of the groundwork is being done and that consistency and patience will pay off. Recent progress in some countries was made possible by foundations established several years earlier.

Donor support has often been a catalyst in fostering progress. While this report focuses on the reform efforts made by EECCA countries, it should be noted that much of this progress was possible with some form of support from bilateral donors or international organisations.

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.

Environmental authorities in a number of EECCA countries experience major institutional and organisational weaknesses, often related to public administration practices inherited from the Soviet era. The political profile of environmental administrations is low. At the same time, those administrations are 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 are often faced with 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 environmental authorities, municipalities and environmental service providers often suffer from a shortage of skills related to the functioning of market economies – whether managerial, economic, financial or commercial. This places obvious limits on making an 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 this concerns 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 developed in many OECD countries. Media coverage, where it exists, emphasises the technical dimension of environmental issues.

Environmental management efforts in EECCA are also hampered by structural and political constraints, which environmental authorities cannot tackle alone. These constraints include the lack of strong drivers for environmental improvement (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; and 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 co-operation in terms of aid volumes has also significantly decreased – although EECCA countries find that donor interest itself has not 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 or willing to move at the same pace. Nevertheless, EECCA countries still share many traits and legacies, both 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 it can 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 demonstrate better why environmental issues should be included in national development plans (as well as in 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 require defining and monitoring targets (including targets in the main economic sectors) for the short, medium and long term; sequencing actions; setting a pace of reform that is commensurate with each EECCA country's political, economic and technical restrictions; making use of a larger toolbox (for example for promoting energy efficiency or compliance with environmental requirerements); and building needed capacities.

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

- **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. This will also mean a stronger emphasis on demand management – combining price and tariff reforms with awareness-raising programmes.

- **An improved institutional framework.** In particular, this will require 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 need to be underpinned by more robust and policy-relevant information systems.

- **A comprehensive approach to environmental financing.** This will 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 these sources of finance (for instance, by strengthening 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 of finance and human resources), policy integration and public/stakeholder relations are the most critical areas that need to be prioritised. Particular attention also needs to be paid to strengthening the capacities of sub-national actors.

- **A stronger engagement of stakeholders.** Environmental authorities need to build constituencies to support environmental reforms. NGOs should be, but often are not yet, natural allies, both as environmental watchdogs and agents of action at local level. Understanding industry concerns and looking for common ground should be prioritised. More attention should also be given to how mass-media could raise awareness and promote good environmental behaviour.

- **A more supportive international co-operation framework.** Various interests can motivate environmental co-operation with EECCA countries: supporting the achievement of the MDGs; implementing MEAs; the EU's "new neighbourhood" policy; concerns over 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. At the same time, as their economies grow, EECCA countries will have less need for traditional co-operation and require more sophisticated co-operation instead, with higher knowledge content. Donors could then consider more strategic approaches to co-operation, which would enable environment ministries to strengthen their institutional capacities. Their support is badly needed, in particular to make environmental policy integration possible. In building their capacities, EECCA countries could take advantage of international processes and establish more opportunities for regional learning.

Box 8.1 Has the EECCA Environment Strategy made any difference?

This report has attempted to document progress of EECCA countries in 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. It also elicited the view of donors during the EAP Task Force meeting held in March 2007.

EECCA country representatives noted that the EECCA Strategy has been useful as a 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 of the shortcomings of the Strategy that impeded its effective implementation: it did not have a "binding" character; it specified implementation mechanisms in some, but not all, areas; and it covered too many issues. The participants felt 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 is still the need for an EECCA-wide mechanism to exchange information and good practice, and to facilitate dialogue and co-operation with donors.

Environment ministries from some OECD countries found the Strategy to be very useful, as it has allowed them to both guide their co-operation efforts and be more effective in mobilising funds for environmental co-operation with EECCA countries. Other development partners, such as the World Bank, find the monitoring work associated with the EECCA Environment Strategy to be a positive and important feature of the Strategy process.

Source: EAP Task Force Secretariat staff.

2

Country profiles

Armenia
Azerbaijan
Belarus
Georgia
Kazakhstan
Kyrgyz Republic
Moldova
Russian Federation
Tajikistan
Turkmenistan
Ukraine
Uzbekistan









ARMENIA

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	2 370	3 401
• Annual GDP growth rate 2002-2005 (%)		12.6
• GDP per capita (PPP, constant 2000 international dollars)	3 008	4 484
• Poverty rate (% of pop. below USD 2/day)	31.3[a]	
Demography		
• Population (million inhabitants)	3.05	3.02
• Urban population (%)	64.7	64.1
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
Financial flows		
• FDI (inward flows as % of GDP)	6.1	5.8
• ODA (% of GNI)	11.9	7.1

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

Source: UNCTAD, World Bank, WTO.

Environmental priorities

While a new National Environmental Action Plan (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 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.

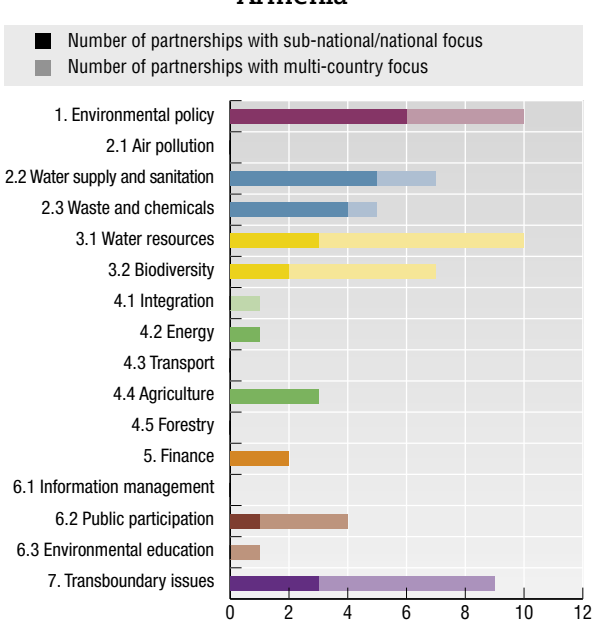
The **2003 PRSP** identifies, from a poverty reduction perspective, the following environmental priority areas:

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

International co-operation

Armenia's main environmental co-operation 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, Norway 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 the EU, which widens perspectives for bilateral co-operation with EU member countries.

Number of registered partnerships

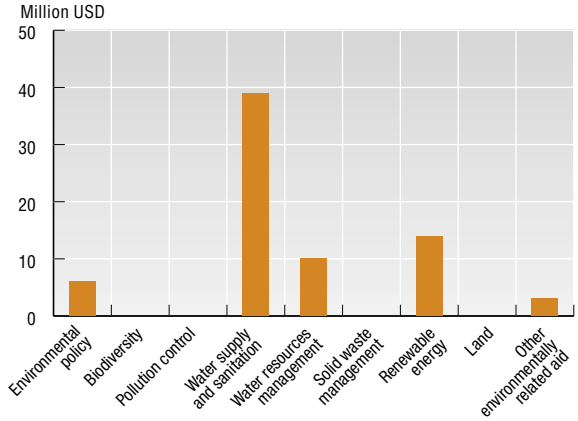


Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

Source: EECCA Partnerships Database.

International assistance for environment

Environment-related ODA/OA to Armenia, 2003-05



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 50 regulations issued. A package of actions has contributed to gradually increasing the water level in Lake Sevan by 180 cm in four years.

Source: Ministry of Nature Protection 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 Nature Protection.

Considerable efforts were made to bring out relevant information, but the policy matrix is not exhaustive.

ARMENIA 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 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 • Concept 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	• SNCO Waste Research Center (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 Stockholm convention secretariat (3)	• List of hazardous wastes approved (3) • List of forbidden hazardous wastes approved (3)
Water resources	• Nr of staff doubled (to 60) with the establishment of 5 territorial bodies of basin management • Water cadastre created (4)	• IWRM principles implemented (4) • Nr of water parameters monitored increased from 28 to 47	• Permitting system reformed to include public awareness and participation
Biodiversity		• Inventories of high plant and vertebrate animal species in 2 national parks (1) • List of vegetal and animal invasive alien species developed (3) • Biosafety Protocol ratified (3)	• Khor-Virap conservation area in the process of being established (1) • Compensation rates for damaged caused to flora and fauna species as a result of non-compliance with environmental legislation established (4)
Integration into key economic sectors	• Agriculture ministry staff trained in environmental issues • Ozone Centre established at the Ministry for Nature Protection(4) • Ministry of Nature Protection designated as national CDM agency (4) • Forestry agency (Armforest SNO) transferred from Ministry of Nature Protectio to Ministry of Agriculture (4)	• Environmental targets introduced in latest agriculture strategy • SEA legislation adopted (3) • SEA pilot project implemented (3) • Law on energy savings and renewables passed (3) • CDM memorandum concluded with Denmark (4) • National forest policy, strategy and plan approved (1) • Forest Code passed • Concept and measures plan on reduction of car emissions approved (4)	• Performance-based energy codes in the process of introduction • Afforestation programs subjected to EIA
Cross-cutting	• Budget of MoE increased 4 times • Salary of dept. heads and sr. specialists tripled • Inspectorates asked to focus on priority sectors • Regular meetings with judiciary staff • Judicial staff trained in environment (3) • Inter-agency body on ESD created (3)	• Integration of environmental issues into 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** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Pollution charge for SO_2 tripled • Pollution charge for NO_x doubled • Gas tariff for households increased by 16% • Taxes for petrol and diesel **decreased** by 15% • Extension of gas metering continued (4)		• Expenditures in urban transport programmes increased by 5% in nominal terms	**Air pollution**
• Water tariff for households increased from 30-120 to 120-172 lcu/m^3 • Water meters installed for all water consumers (4)			**Water supply and sanitation**
	• Theatre performances on POPs were prepared and organised for children (4)	• % of industrial (including hazardous) waste collected in Yerevan increased from 85% to 98% • Municipal waste collected increased 7 times to 85 000 m^3 • Landfill upgraded (3) • Programme to improve agrochemicals management established	**Waste and chemicals**
• Maximum water tariff for all users increased by 43%	• General advice on environmental management provided to farmers	• Programme to improve water-efficiency in irrigation established	**Water resources**
		• Expenditures in protected areas increased by 63% from 2002 to 2005 and by 351% to 2006 (4)	**Biodiversity**
	• Guide on CDM published (4) • Lessons on climate change and ozone layer held in schools and information disseminated through mass-media (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 by 23% from 2002 to 2005 and by 67% to 2006 (4) • Nr of parameters subject to pollution charges reduced (3)	• Ministry of Nature Protection unit for relations with the public re-established • Training programmes on public participation available for members of judiciary • Guide on accessing environmental information under elaboration (4) • 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 400 million lcu (4) • Law adopted stipulating 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**

AZERBAIJAN

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	6 409	9 911
• Annual GDP growth rate 2002-2005 (%)		14.8
• GDP per capita (PPP, constant 2000 international dollars)	3 097	5 016
• Poverty rate (% of pop. below USD 2/day)	33.4[a]	
Demography		
• Population (million inhabitants)	8.17	8.39
• Urban population (%)	51.1	51.5
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
Financial flows		
• FDI (inward flows as % of GDP)	22.3	13.4
• ODA (% of GNI)	5.8	1.9

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

Source: UNCTAD, World Bank, WTO.

Environmental priorities

The **1998 NEAP** identifies four 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.

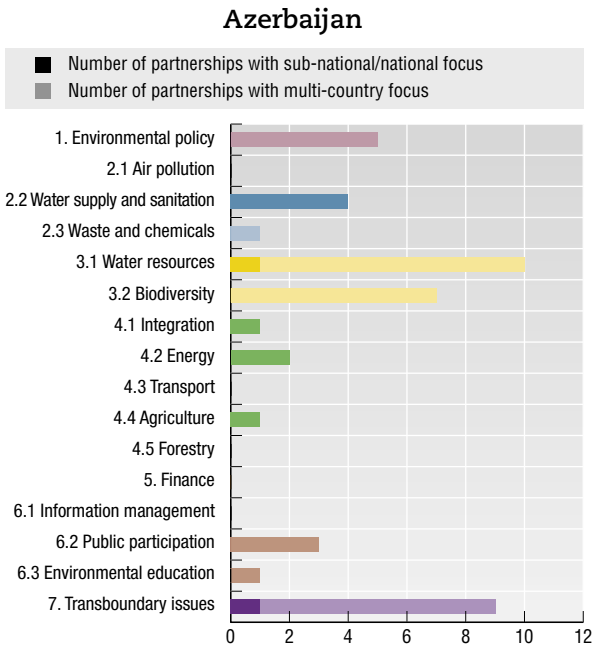
The **2003 PPRED** (State Programme on Poverty Reduction and Economic Development) includes environment as one of the national priorities. It mentions environmental conditions as a cause of poverty and as a tool to reduce it. The PPRED identifies the following main environmental problem areas:

1. Water resources.
2. Land.
3. Air.
4. Forest.
5. Caspian Sea.

International co-operation

Azerbaijan's main environmental co-operation partners are GEF, World Bank, UNDP, EU, Germany, Japan, the US, the UK, Switzerland and Turkey.

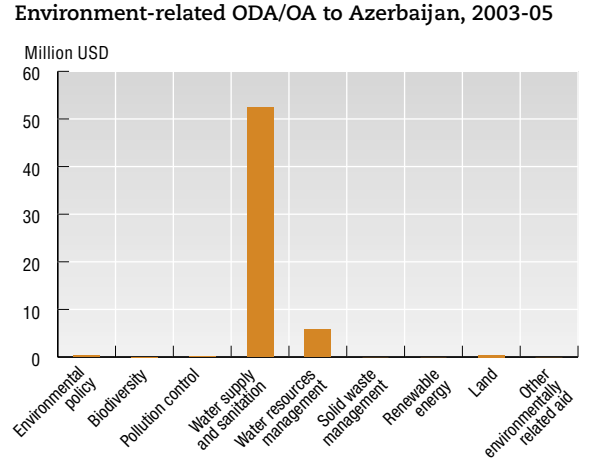
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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 of Azerbaijan. To reverse negative trends, the Ministry of Ecology and Natural Resources has decisively increased the number and size 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 population 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 Ecology and Natural Resources 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:
(1) Report to the Convention on Biological Diversity.
(2) Report to the Aarhus Convention.
(3) EPR of Azerbaijan.
(4) Report to the Basel Convention.
(5) Main text of this report (see thematic chapters for sources consulted).
(6) Additional information provided by the Ministry of Ecology and Natural Resources of Azerbaijan.

Considerable efforts were made 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)	• Nine monitoring stations repaired and modern analytical devices purchased (6)	• Special air pollution permits issued (6)
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) • List of regulated ozone depleting substances issued and licensing procedures developed (6)
Water resources		• Caspian Sea Framework Convention adopted • National Caspian Sea Action Plan developed (6) • 2 laboratories to monitor the state of transboundary waters set up (6)	• Presidential Decree on coastal zone use issued (1) • Special water permits issued (6)
Biodiversity	• Staff working on protected areas increased by 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 doubled (6) • Salary of Ministry staff increased three-fold.	• Comprehensive Action Plan to Improve the Environment for 2006-2010 developed (6) • Latest agriculture strategy includes environmental targets • EPR undertaken (3)	

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Tax on petrol increased by 11% • Tax on diesel increased by 112% (to reach a level of 85% of petrol tax)	• Advice provided through new Climate Change and Ozone Centre (3) • Daily air pollution data and bulletins provided through website (6) • Air pollution awareness campaign carried out (5)	• Investment programme for improving road traffic (underground passages, beltways) launched in Baku (6)	**Air pollution**
• Water tariff for households increased by 95% to 0.072 lcu/m^3 • 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 by 20 percentage points • Capacity for municipal waste disposal in sanitary landfills increased by 14% to 230 000 m^3 • 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 by130% • Centres for wildlife rehabilitation created (6)	**Biodiversity**
			Integration into key economic sectors
• Amount collected by environmental levies increased by 54%	• Environmental education programmes now available also at pre-school level • Environmental education teaching materials reflecting national conditions developed • Environmental education training programme for teachers available • Aarhus Information Centre established (2)		**Cross-cutting**

BELARUS

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	14 012	18 261
• Annual GDP growth rate 2002-2005 (%)		9.2
• GDP per capita (PPP, constant 2000 international dollars)	5 343	7 051
• Poverty rate (% of pop. below USD 2/day)	2.0[a]	
Demography		
• Population (million inhabitants)	9.93	9.78
• Urban population (%)	70.9	72.2
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
Financial flows		
• FDI (inward flows as % of GDP)	1.7	1.0
• ODA (% of GNI)	0.2	0.2

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

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.

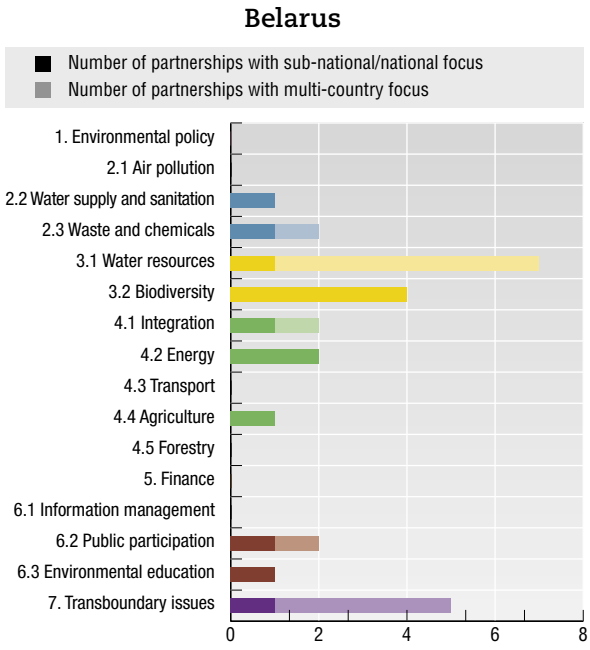
The **2004 National Strategy for Sustainable Socio-Economic Development** (2004-2020) identifies the following main priorities:

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 situations).

International co-operation

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

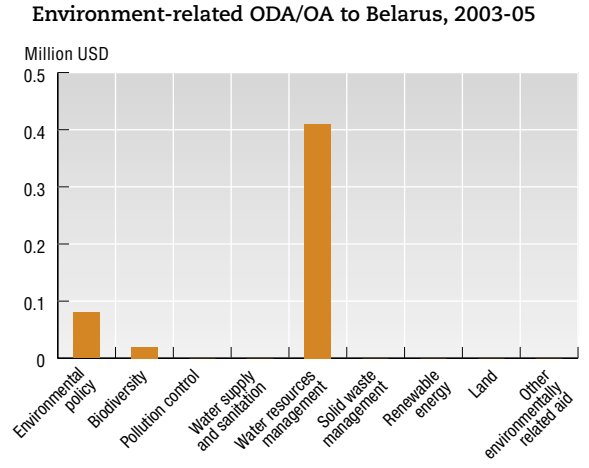
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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 unauthorised dumping sites each year at high budgetary cost. In 2003, the implementation of a new policy led to the development of a network of mini-landfills for provisional storage of waste, and gave local authorities the responsibility of choosing the method of waste collection and transfer to the mini-landfills. By the end of 2003, 6 090 mini-landfills and 2 871 grounds for provisional waste storage had been opened. Financial transfers from the national environmental fund made it possible to purchase 9 bulldozers, 66 tractors, 394 sanitation vehicles and 32 000 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 the 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 Natural Resources and Environmental Protection of the Republic 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:
(1) Report to the Ramsar Convention.
(2) EPR of the Republic of Belarus.
(3) Report to the Aarhus Convention.
(4) ECOLEX Database.
(5) Main text of this report (see thematic chapters for sources consulted).
(6) Additional information provided by the Ministry of Natural Resources and Environmental Protection.

Considerable efforts were made 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)	• PM_{10} standard introduced (5) • PM_{10} 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/EURO4 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) • New version of waste law drafted (6)
Water resources		• Nr. of monitored water parameters increased from 46 to 70 (standards cover 952 parameters) • 16 lakes included in surface waters monitoring programme	• Technical regulations on water abstraction and consumption introduced for 145 industrial enterprises (6)
Biodiversity	• Inter-agency committee on the Ramsar convention established (6) • 22 structures for managing protected areas established (6)	• Flora law passed (2) • Inventory of wetlands and Ramsar database created (1)	• Nr. of protected areas decreased from 1 476 to 1 433 due to consolidation at higher level of protection (6) • Protected areas increased from 7.6% to 8.3% of the country's territory (6)
Integration into key economic sectors	• National JI/CDM agency designated • Agriculture and environment working group established	• Kyoto Protocol ratified • Some 20 JI proposals prepared (6) • SEA pilot implemented (5) • Integration of environmental issues into national development strategies significantly improved	• Licensing of treatment of ozone depleting substances mandated (6)
Cross-cutting	• MoE budget increased by 61% • Salaries of department heads and senior specialists tripled • Inspectorates asked to focus on priority sectors • Inter-agency monitoring commission created (5)	• NEAP for 2006-2010 and NSSD up to 2020 approved (6) • National Environmental Monitoring Programme for 2006-2010 passed (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** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Charges for air pollutants (including SO_2, 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 by 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% • 73 wastewater treatment plants with a capacity of 190 000 m3/day built and reconstructed (2)	**Water supply and sanitation**
• Extended producer responsibility principle being introduced (6)	• Social advertising used to promote separation and processing of secondary material resources (6)	• Waste disposal capacity in sanitary landfills increased by 16% to 30 000 tonnes (43% for hazardous wastes) • Network of mini-landfills supported • 795 rural municipal waste services and 95 sorting stations created (6) • 86% of stockpiled pesticides containing CO_3 re-packaged (6)	**Waste and chemicals**
			Water resources
• Joint Order of the Ministry of Natural Resources and Environmental Protection and the Ministry of Finance on collection of fees for logging published (4) • Order on the responsibility andcompensation for damage to public forests published (4)	• A system of voluntary certification of forest plantations created • Websites 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 for sustainable natural resource use introduced – including about 10 zero tax rates, 6 increasing and 2 decreasing coefficients to environmental tax rates (6)	• Environmental information hotlines set up in all regions (3) • Aarhus Centre established (6) • ESD/EE conceptual separation formalised (5)		**Cross-cutting**

GEORGIA

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	3 380	4 345
• Annual GDP growth rate 2002-2005 (%)		8.7
• GDP per capita (PPP, constant 2000 international dollars)	2 183	2 842
• Poverty rate (% of pop. below USD 2/day)	25.8[a]	
Demography		
• Population (million inhabitants)	4.61	4.47
• Urban population (%)	52.5	52.2
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
Financial flows		
• FDI (inward flows as % of GDP)	4.9	7.0
• ODA (% of GNI)	9.0	6.1

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

Source: UNCTAD, World Bank, WTO.

Environmental priorities

The current NEAP does not reflect Georgia's environmental priorities. A new NEAP is currently being developed. For 2006-2007, the Georgian **Ministry of Environment** has the following priorities:

- Finalisation of 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.
- Implementation of the waste management policy.
- Institutional strengthening of the Centre for Monitoring and Prognostication.
- Institutional strengthening of the Spatial Informational Centre.
- Development of tools for "debt-for-environment swaps".

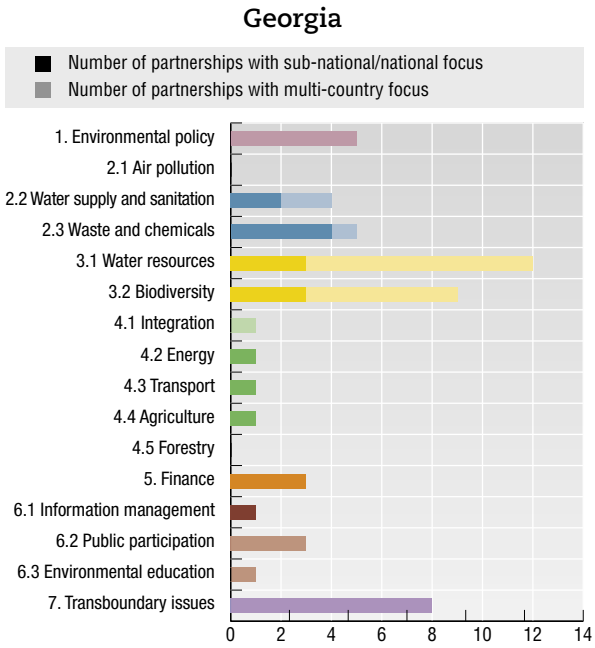
The **2000 Economic Development and Poverty Reduction Strategy** (EDPRS) identifies environment as one of the priorities to achieve the Strategy's wider objectives. It identifies 10 areas of environmental action:

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. Setting 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 and Norway.

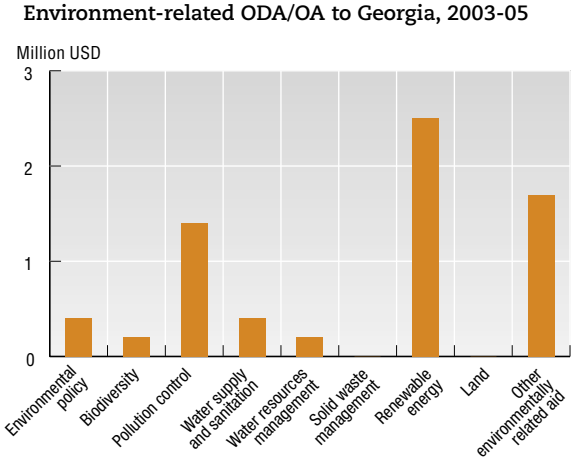
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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 has embarked on a drive for public administration reform. One major element of the reform is the simplification of administrative procedures. In June 2005, a licensing and permitting 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 the new legislation, licenses are issued through auctions, 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 Environmental Protection and Natural Resources 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:
(1) Report to the Ramsar Convention.
(2) Main text of this report (see thematic chapters for sources consulted).
(3) Additional information provided by the Ministry of Environmental Protection and Natural Resources.

Considerable efforts were made 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 of the Ministry of Environment (3) • Rural EMEP monitoring station rehabilitated (3)	• Action plan and programme for sustainable urban transport developed (3)	
Water supply and sanitation			
Waste and chemicals		• Inventory of chemicals carried out (3) • Strategy and national action plan regarding chemicals developed (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)	• Permitting system for water abstraction and wastewater discharge in place
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** (labelling, 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**

KAZAKHSTAN

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	22 796	29 875
• Annual GDP growth rate 2002-2005 (%)		9.4
• GDP per capita (PPP, constant 2000 international dollars)	5 636	7 617
• Poverty rate (% of pop. below USD 2/day)	17.1[a]	
Demography		
• Population (million inhabitants)	14.86	15.15
• Urban population (%)	56.7	57.3
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
Financial flows		
• FDI (inward flows as % of GDP)	10.5	3.1
• ODA (% of GNI)	0.7	0.6

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

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).

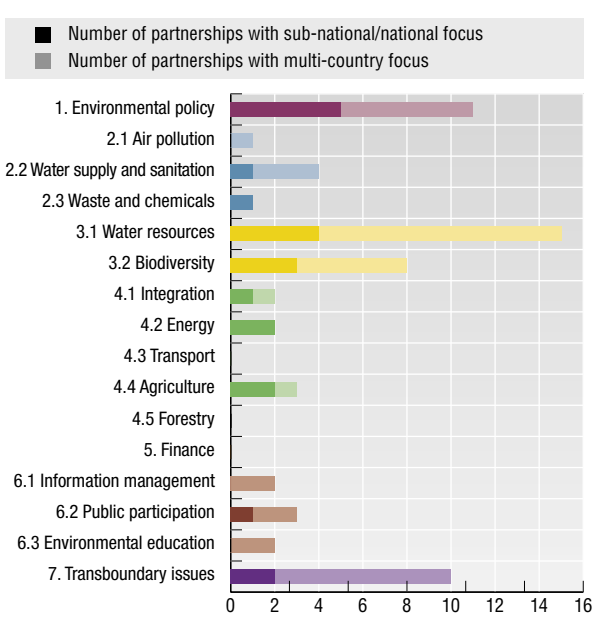
The **2006 Concept of Transition of the Republic of Kazakhstan to Sustainable Development for 2007-2024** sets the following priorities:

- Introduce trans-regional ecosystem principle for implementation of sustainable development programmes in Kazakhstan's regions.
- Set sustainable development targets for all the large industries and energy facilities, and set the timeframe and select the mechanisms for shifting to the best available techniques.
- Introduce more efficient economic environmental protection mechanisms, including for promoting a cleaner production strategy.
- Develop alternative energy facilities.
- Use key provisions and mechanisms of international treaties to mobilise funds to improve the environmental profile of 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, UNECE, Germany, Japan, Norway, Switzerland and US.

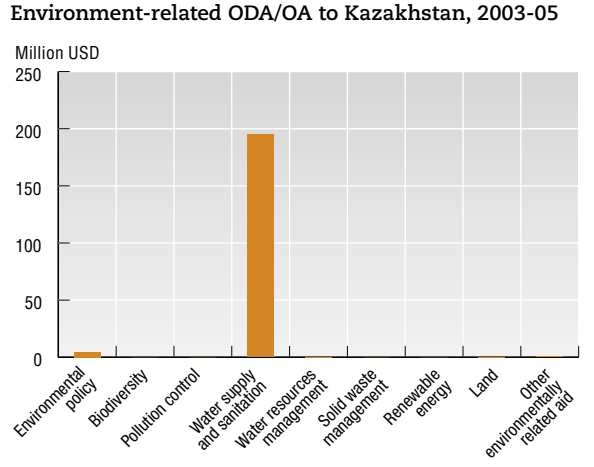
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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 the 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:
(1) Website of Ministry of Agriculture.
(2) CAREC.
(3) Report to Caspian Environment Programme.
(4) IWRM website (UNDP Kazakhstan).
(5) UNECE.
(6) Report to the Convention on Biological Diversity.
(7) Website of Ministry of Environment.
(8) Main text of this report (see thematic chapters for sources consulted).

Considerable efforts were made 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 acceded (8)	
Water resources	• Mechanisms for cross-sectoral co-ordination 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 by 46% to 2 630	• Forest and Land Codes approved • 2007-2009 programme on protected areas approved (1) • Programmes 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 by 220% to 21 million hectares
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 by 173% to 4.8 billion lcu • Salary of department heads and senior specialists increased by 27% and 58% respectively • Inspectorate created (8) • Inter-agency body on ESD created (8)	• Environmental Code passed (8) • 2005-2007 Environment Action Plan and 2004-2015 Environmental Safety Concept 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** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Gas tariff for households increased by 75% to 14 000 lcu/m^3 • Electricity tariffs for agricultural users increased by 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 by 134% to 0.1 lcu/m^3	• 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 programmes carried out (8)	• Expenditures for protected area management multiplied by 6 to 1.6 billion lcu	**Biodiversity**
			Integration into key economic sectors
• Amount collected through environmental levies increased by 224% to 25 billion lcu • Law on environmental liability and insurance approved (6)	• NGO support programme 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**

KYRGYZ REPUBLIC

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	1 442	1 642
• Annual GDP growth rate 2002-2005 (%)		4.4
• GDP per capita (PPP, constant 2000 international dollars)	1 574	1 730
• Poverty rate (% of pop. below USD 2/day)	23.3[a]	
Demography		
• Population (million inhabitants)	4.99	5.16
• Urban population (%)	35.6	35.8
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
Financial flows		
• FDI (inward flows as % of GDP)	0.3	1.9
• ODA (% of GNI)	11.5	10.5

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

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.
- Land and soil resources.
- Biodiversity.
- Hazardous waste management.
- Monitoring.
- Environmental education.

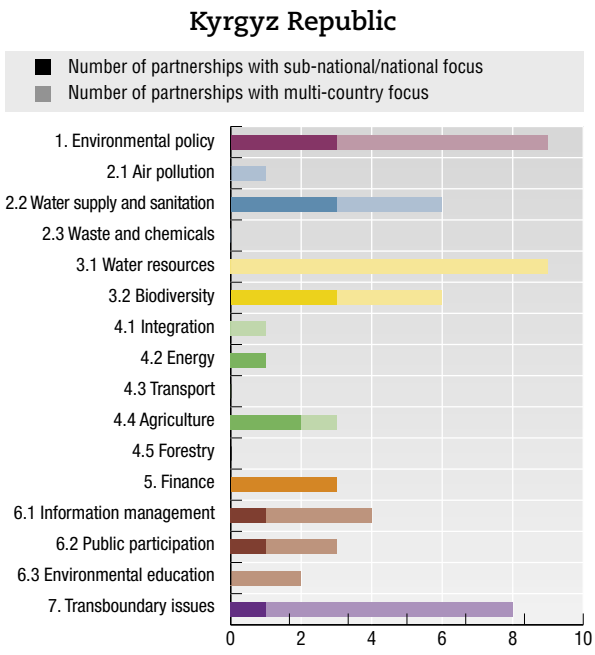
The **Development Strategy for 2006-2010** identifies environmental safety as one of the priority areas, and proposes taking the following actions to achieve it:

- Strengthening environmental policies and regulatory and legal basis.
- Strengthening economic instruments.
- Monitoring the state of the environment and rational nature use.
- Simplifying the permitting system for nature use.
- Strengthening enforcement of environmental regulations.
- 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 co-operation partners are Switzerland, Norway, GEF, TACIS, World Bank, Asian Development Bank, UNEP and UNDP.

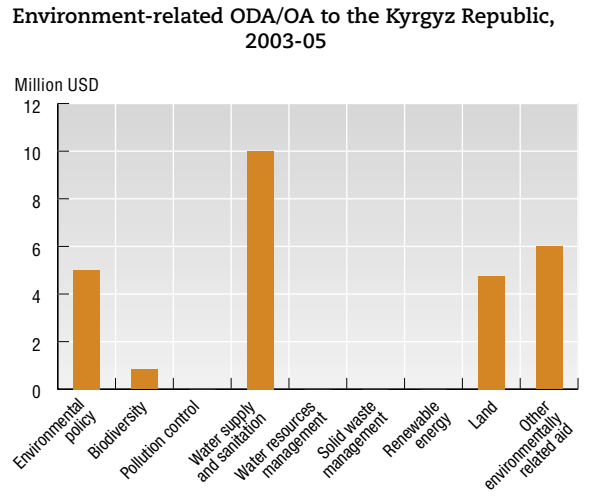
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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 national system of protected areas is expected to grow from 4.6% to 6% of the country's 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 particularly 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: State Agency for Environment and Forestry 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:
(1) Report to the Convention on Biological Diversity.
(2) Website of the State Agency for Environment and Forestry.
(3) Report to the Ramsar Convention.
(4) Main text of this report (see thematic chapters for sources consulted).
(5) Additional information provided by the State Agency for Environment and Forestry .

Considerable efforts were made to bring out relevant information, but the policy matrix is not exhaustive.

KYRGYZ REPUBLIC 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			• 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 co-operation 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)	• Protected areas increased by 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 by 16%	• Sustainable development potential of environmental resources assessed (5) • Funding needs concerning MDG 7 (Environmental Sustainability) assessed (5) • Environmental Code drafted (5)	

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Gas tariffs for households increased by 15% to 3.1 lcu/m^3 • Electricity tariffs increased by 44% for households and by 20% for industrial users • Taxes on transport fuels **decreased** by 74%		• Budget of energy efficiency programme increased by 56% to 4.2 million lcu	**Air pollution**
	• Integrated hygiene promotion programme 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 on regulatory acts on MSWM published (5)	• Expenditures for cleaning up contaminated land reached 440 000 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 irrigation 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 Environment Protection 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 the Ozone Centre (5)		**Integration into key economic sectors**
• Guidelines for the calculation of pollution charges adopted • Nominal amount collected through environmental levies increased by 3% to 21 million lcu	• NGO Advisory Council for the State Agency for Environment and Forestry created (5) • Environmental awareness-raising materials reflecting local conditions and training programme for teachers developed (5) • Website of the State Agency for Environment and Forestry created • SoE report disseminated electronically (4) • Consultations on draft regulations made mandatory I(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**

MOLDOVA

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	1 474	1 804
• Annual GDP growth rate 2002-2005 (%)		7.0
• GDP per capita (PPP, constant 2000 international dollars)	1 462	1 707
• Poverty rate (% of pop. below USD 2/day)	64.1[a]	
Demography		
• Population (million inhabitants)	4.25	4.21
• Urban population (%)	46.3	46.7
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
Financial flows		
• FDI (inward flows as % of GDP)	8.0	7.7
• ODA (% of GNI)	7.5	3.9

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

Note: Moldovan authorities have reported some discrepancies in the data. According to 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): USD 2 261 (2005).
- Poverty rate (% of population below USD 2/day, 2002 PPP): 39.8 (2002) and 27.6 (2005).

Source: UNCTAD, World Bank, WTO.

Environmental priorities

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

- Approximation of national legal and regulatory frameworks on environment and natural resources management with EU directives.
- Prevention and reduction of degradation of natural resources.
- More efficient use of natural resources.
- Maintenance of environmental quality as a factor of health and quality of life.
- Protection of water resources.
- Improvement of the waste management scheme, with a lower impact and load of toxic substances and waste.
- Protection of forests and expansion of the forest fund
- Conservation of 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.

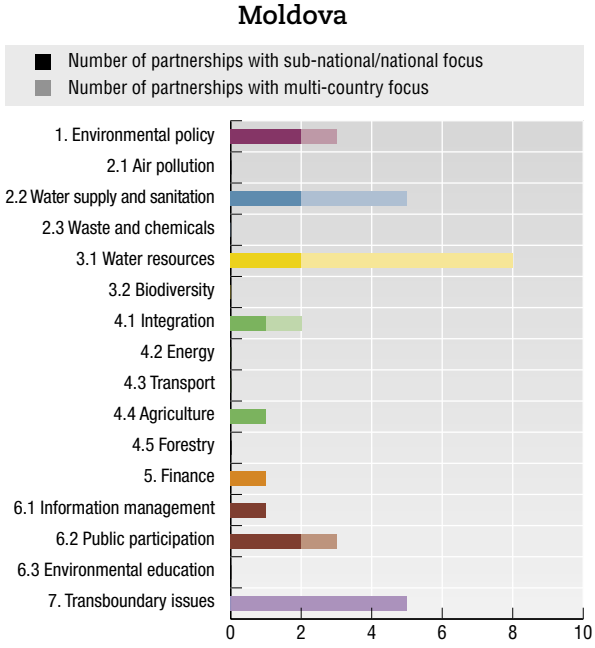
The **2003 Economic Growth and Poverty Reduction Strategy** identifies the following environmental priority areas:

- 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 natural reserves.
- Decreasing soil degradation.
- Strengthening the monitoring system of natural disasters, and providing information and education for the public.
- Strengthening administrative and financial mechanisms for environmental protection.
- Strengthening environmental education.
- Greater public access to environmental information and decision-making.

International co-operation

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

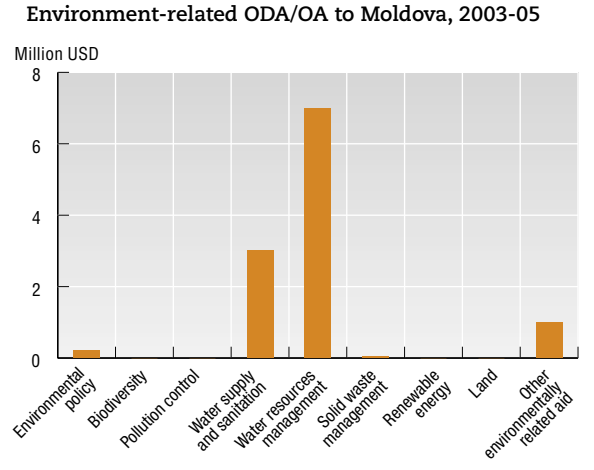
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

Source: EECCA Partnerships Database.

International assistance for environment



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

Implementation highlight

APPROXIMATION WITH 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. With its limited capacity (only 25 staff), the Ministry is making great efforts to reach this goal. It has mobilised support from several partners (Latvia, TACIS, OECD/EAP Task Force) to build its capacity, and harmonise national legislation and approximate water quality standards with EU directives. As a result, current legislation has been analysed, and the first draft of the Action Plan to Approximate Legislation with European Legislation has been prepared and revised, and seven "approximation sub-plans" developed.

Source: Ministry of Environment and Natural Resources 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:
(1) REC Moldova.
(2) Main text of this report (see thematic chapters for sources consulted).
(3) Additional information provided by the Ministry of Environment.

Considerable efforts were made 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 in WSS programme (3)	
Waste and chemicals	• Office for the management of POPs projects created (3) • Courses organised for 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 in 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 co-ordinate implementation of concept of organic agriculture established (3)	• 6 JI/CDM project proposals developed • 2003-2020 Programme of Reforestation and Afforestation of 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** by 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** (labelling, 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 Cars 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 by 180% to 0.5 lcu/m^3		• 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 funds 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**

RUSSIAN FEDERATION

Socio-economic indicators

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

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

Source: UNCTAD, World Bank, WTO.

Environmental priorities

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

- Sustainable use of (renewable and non-renewable) natural resources.
- Reduction of pollution and sustainable use of resources.
- Conservation of biodiversity.
- Ensuring environmental safety of hazardous activities and in emergencies.
- Improvement of the quality of life and public health by improving environmental quality.
- Minimisation of environmental risks caused by natural and technological disasters.

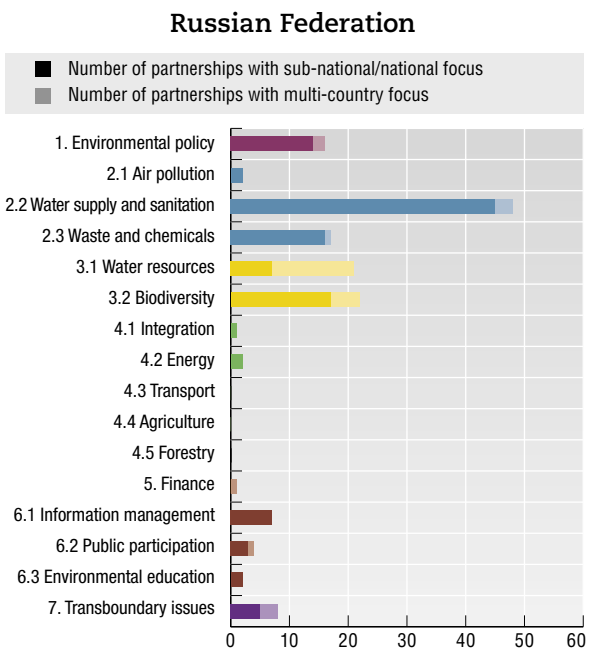
The **2006 Programme of Socio-Economic Development of the Russian Federation for the medium-term (2006-2008)** includes the following priorities in the field of environmental protection:

- 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

Russia's main environmental co-operation partners are TACIS, EBRD, World Bank, GEF, Finland, Germany, the Netherlands, Norway, Sweden and the US.

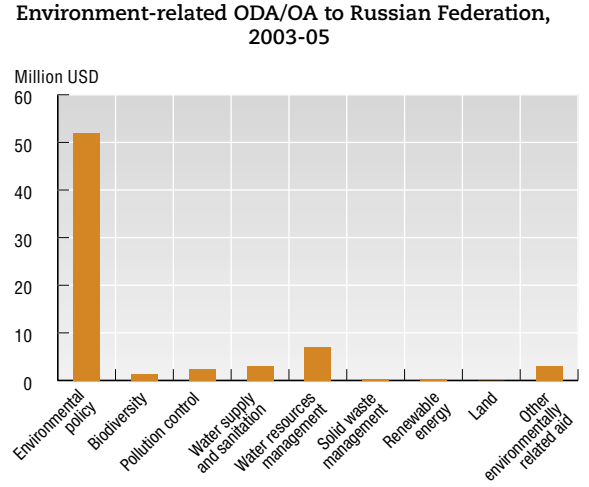
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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 in January 2007. While regulations still need to be implemented, the Water Code already 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 previous narrow licenses with broad agreements that include water quality considerations, secure the rights of the agreement-holders and introduce 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, which 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 which were returned to the water 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:
(1) Report to the Ramsar Convention.
(2) UNECE.
(3) Main text of this report (see thematic chapters for sources consulted).
(4) Additional information provided by the Ministry of Natural Resources.

Considerable efforts were made to bring out relevant information, but the policy matrix is not exhaustive.

RUSSIAN FEDERATION 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	• 10 new air quality monitoring stations installed	• PM_{10} monitoring introduced (3)	• Vehicle emission standards developed and implemented (1) • Leaded petrol banned (3) • EURO II standard introduced (3) (technical requirements to motor fuel approved)
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 co-operation in the Neman River basin agreed (4) • Teheran Convention on the Caspian Sea ratified (3)	• Criteria approved for classifying the water bodies as those controlled by the federal and regional environmental authorities (4)
Biodiversity		• Work on biodiversity indicators started (3) • PEEN pilot project carried out • Work on invasive alien species started (3) • Concept Paper on Fisheries Development Until 2020 passed	• 59 000-hectare Kologrivsky Les State Reserve established (4)
Integration into key economic sectors	• Nr of staff working on integration issues at the Ministry of Natural Resources increased from 14 to 22	• Kyoto Protocol ratified and implementation plan adopted (4) • GHG emissions inventory established (4)	
Cross-cutting		• Action Plan for 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) • Energy Strategy of Russia until 2020 passed (4)	• Reform of environmental quality standards started (3) • Administrative fines increased (3) • Preparation of 11 ISO14000 standards on ecological security launched (4)

POLICY MATRIX

Market-related instruments (property rights, tariffs, charges, taxes, deposit-refund schemes, trading)	**Information-related instruments** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Gas tariffs for households increased by 82% to 0.9 lcu/m^3 • Average electricity tariffs increased by 32%			**Air pollution**
• Water tariff-setting framework reformed (3)			**Water supply and sanitation**
			Waste and chemicals
• Water tariffs for industrial users increased by 71% to 0.33 lcu/m^3	• The Water Code of 2007 replaced the federal water tax with a contractual fee (4)		**Water resources**
	• E-mailing list for disseminating information 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 by 152% to 13 billion lcu • Penalties introduced for failure to pay charges for negative environmental impacts (4) • Pattern of distribution of environmental pollution charges among the federal, regional, and local budgets changed to 20 percent, 40 percent, and 40 percent respectively	• 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**

TAJIKISTAN

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	1 178	1 544
• Annual GDP growth rate 2002-2005 (%)		9.1
• GDP per capita (PPP, constant 2000 international dollars)	934	1 173
• Poverty rate (% of pop. below USD 2/day)	42.5[a]	
Demography		
• Population (million inhabitants)	6.29	6.51
• Urban population (%)	25.4	24.7
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
Financial flows		
• FDI (inward flows as % of GDP)	3.0	2.4
• ODA (% of GNI)	14.1	11.4

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

Source: UNCTAD, World Bank, WTO.

Environmental priorities

Environmental authorities identify the following priorities:

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

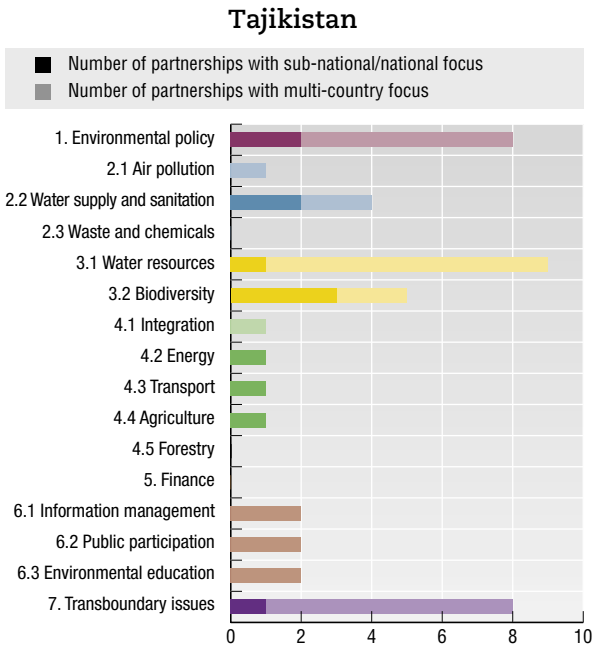
The **2006 Poverty Reduction Strategy (2006-2015)** identifies six environmental priorities:

- Strengthen 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 co-operation partners are Switzerland, Norway, Germany, Japan, UNDP, UNEP, Asian Development Bank, World Bank.

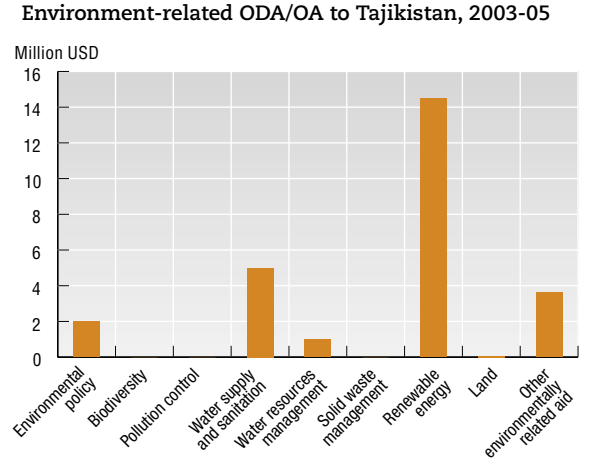
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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:
(1) Report to the Convention on Biological Diversity.
(2) Website of the Ministry of Agriculture and Environmental Protection.
(3) Main text of this report (see thematic chapters for sources consulted).
(4) Additional information provided by the Ministry of Agriculture and Environmental Protection.

Considerable efforts were made 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 on 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 hectares (1 new protected area designated)
Integration into key economic sectors	• Energy and forestry ministries staff trained in 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 for 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 by 40% and 60% respectively • MoE budget increased by 160% to 5.4 million lcu	• Treatment of environmental issues in sectoral development 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** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Pollution charge for SO_2 increased by 25% to 0.03 lcu/tonne • Gas tariff for households increased by 50% to 0.33 lcu/m^3 • Average electricity tariffs increased by 133% to 1.6 lcu/kwh	• Staff from agriculture and 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 by 63% to 2.2 million lcu • Amount managed by environmental fund increased by 93% to 2.7 million lcu	• Training programmes on public participation for environment ministry staff established • Public participation now regulated in environmental assessment legislation • National environmental education centre created (2)		**Cross-cutting**

TURKMENISTAN

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)[a]		
• Annual GDP growth rate 2002-2005 (%)		13.8
• GDP per capita (PPP, constant 2000 international dollars)		
• Poverty rate (% of pop. below USD 2/day)		
Demography		
• Population (million inhabitants)	4.6	4.8
• Urban population (%)	45.5	46.2
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
Financial flows		
• FDI (inward flows as % of GDP)	1.1	0.4
• ODA (% of GNI)	0.7	0.3

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

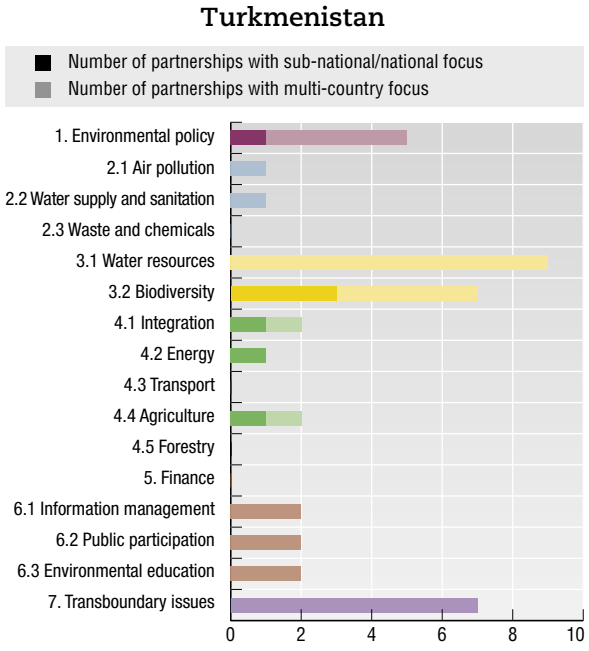
The **National Programme on the Strategy of Economic, Political, and Cultural Development of Turkmenistan until 2020** and the **National Environmental Action Plan until 2010**, passed in 2002, identify the following environmental priorities:

- 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 co-operation partners include GEF, UNEP, UNDP, WWF, TACIS, GTZ, Asian Development Bank.

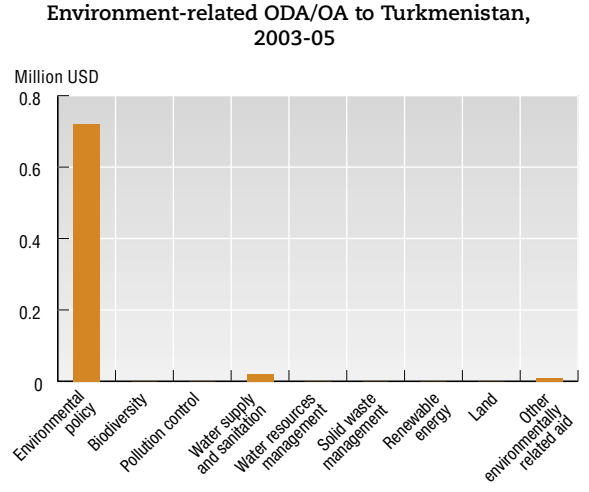
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

Source: EECCA Partnerships Database.

International assistance for environment



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

Implementation highlight

ENERGY AND ENVIRONMENT

In order to reduce the environmental impacts of the oil production industry on the Caspian Sea, and within 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 the Soimonova Bay. These efforts also include the contracting of the Irish company Emerol to provide environmental management and remediation services in exchange for recovered oil in the Turkmenbashi Refinery. As of late 2006, the Emerol agreement has prevented the discharge of 20 000 tons of oil waste into 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 Nature Protection 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:
(1) Main text of this report (see thematic chapters for sources consulted).
(2) Additional information provided by the Ministry of Environment.

Considerable efforts were made 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			
Water supply and sanitation			
Waste and chemicals			
Water resources		• Teheran convention on the Caspian Sea signed (1) • Water Code passed (2)	
Biodiversity		• Regulation on National Parks drafted (2)	
Integration into key economic sectors		• Law on forest fires passed (2) • 3 JI/CDM project proposals developed	
Cross-cutting	• Salary of department heads and senior specialists increased by 176% • National Centre for NEAP Implementation set up (2)	• Draft methodology for ensuring economic efficiency of environmental activities prepared (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** (labelling, 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 (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 tonnes/year	**Waste and chemicals**
		• "Dostluk" water reservoir built (2) • Construction of Turkmen Lake started (2)	**Water resources**
		• Expenditures for managing protected areas increased by 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 by 3% in nominal terms to 313 million lcu	• TV programme on environment shown weekly on state television (2)		**Cross-cutting**

UKRAINE

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	35 913	45 188
• Annual GDP growth rate 2002-2005 (%)		8.0
• GDP per capita (PPP, constant 2000 international dollars)	4 736	6 086
• Poverty rate (% of pop. below USD 2/day)	5.0[a]	
Demography		
• Population (million inhabitants)	48.2	47.1
• Urban population (%)	67.4	67.8
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
Financial flows		
• FDI (inward flows as % of GDP)	1.6	9.4
• ODA (% of GNI)	1.0	0.5

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

Source: UNCTAD, World Bank, WTO.

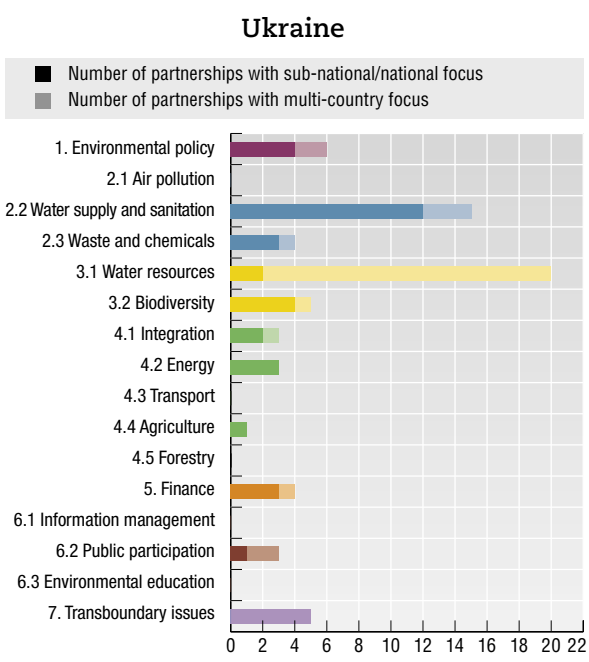
Environmental priorities

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 in the industrial centres of the 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 into the industrial, energy, construction, agriculture and transport sectors.
- Protect biodiversity and develop nature reserves.

International co-operation

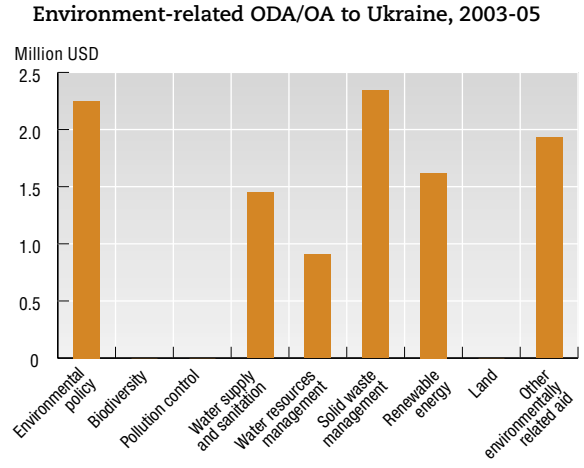
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

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:
(1) UNECE EPR of Ukraine.
(2) Report to the Ramsar Convention.
(3) REC Moldova.
(4) ECOLEX database.
(5) Main text of this report (see thematic chapters for sources consulted).

Considerable efforts were made 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		• Law on potable water approved (4)	• Regulations on technical maintenance of water supply and sanitation installations approved (4)
Waste and chemicals	• Waste management agency created	• Programme for phasing out ozone-depleting substances approved (1) • Waste data system improved (5)	
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 designated, for a total of 7 243 • Protected areas increased by 3% to 2.8 million hectares.
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 by 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** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Charges for air pollutants increased by 137%; they are now 190 lcu/tonne for SO_2 and NO_x			**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 by 137%; they are now 50 lcu/tonne of BOD	• Recommendations for wetland conservation communicated to stakeholders (2)		**Water resources**
	• Seminar and book on wetland biodiversity conservation for hunters produced (2)	• Expenditures on protected areas increased by 58%	**Biodiversity**
	• Organic farming promoted (5) • Timber certification promoted (5)		**Integration into key economic sectors**
• Amount collected through environmental levies increased by 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 of pollution information disclosure approved (4) • EE/ESD multi-stakeholder body established (5) • Inter-agency body on ESD created (5)		**Cross-cutting**

UZBEKISTAN

Socio-economic indicators

	2002	2005
Income and poverty		
• GDP (million, constant 2000 USD)	14 912	17 906
• Annual GDP growth rate 2002-2005 (%)		6.5
• GDP per capita (PPP, constant 2000 international dollars)	1 594	1 812
• Poverty rate (% of pop. below USD 2/day)	71.7[a]	
Demography		
• Population (million inhabitants)	25.5	26.6
• Urban population (%)	37.1	36.7
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		
Financial flows		
• FDI (inward flows as % of GDP)	0.7	0.4
• ODA (% of GNI)	1.8	1.9

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

Note: An international dollar has the same purchasing power over GDP as the USD has in the United States.
The poverty rate is the percentage of the population living on less than USD 2.15 a day at 1993 international prices.

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 into transport policies; *d)* phasing out leaded gasoline; *e)* improvement of food quality; *f)* prevention of industrial pollution; and *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; and *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 the Aral Sea basin; and *d)* joining multilateral conventions and developing domestic mechanisms for compliance.

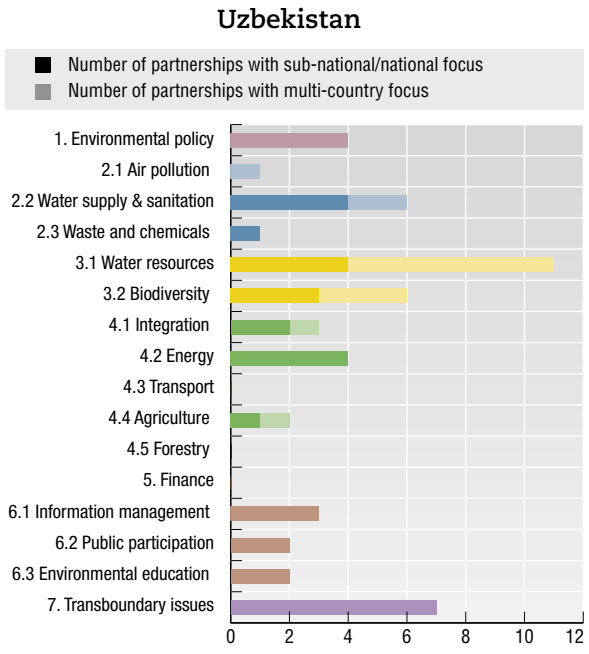
The **State Committee on Environmental Protection** has identified the following future priorities:

- 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 co-operation partners are ADB, GEF, UNDP, UNEP, the World Bank and EBRD.

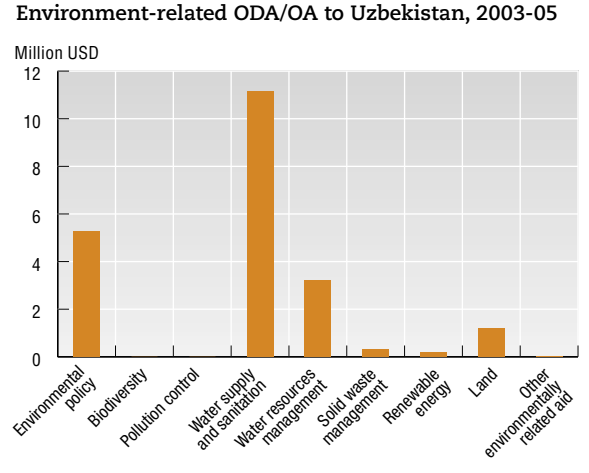
Number of registered partnerships



Note: The chart includes only the partnerships registered in the EECCA Partnerships Database as of 31 March 2007.

Source: EECCA Partnerships Database.

International assistance for environment



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

Implementation highlight

RENEWABLE ENERGY

The State Committee of Environmental Protection of Uzbekistan has identified the development of renewable energy sources as one of the country's future environmental priorities. The Central Asia Interstate Commission for Sustainable Development has decided to establish 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: State Committee on Environmental Protection 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:
(1) Report to the Convention on Biological Diversity.
(2) 2005 State of the Environment Report.
(3) UNDP website.
(4) Website of the State Committee on Environmental Protection.
(5) CAREC.
(6) Main text of this report (see thematic chapters for sources consulted).
(7) Additional information provided by the State Committee on Environmental Protection.

Considerable efforts were made 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 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 monitored increased from 31 to 50 (7)	• Guidelines for setting water pollutants discharge standards developed (7) • Permitting procedure for special water use developed (7)
Biodiversity	• Nr of staff working on protected areas increased by 7% to 512	• Law on protected areas passed (7) • Biodiversity cadastre created (7) • High nature value farmland project launched (6)	• Area under protection increased by 8% to 12.2 million hectares • Requirements to strengthen control over biodiversity conservation approved (1)
Integration into key economic sectors			
Cross-cutting	• Nr of staff of the State Committee on Environmental Protection in headquarters decreased by 19% to 39 • Salary of department heads and senior specialists increased by 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** (labelling, information disclosure, public participation, education, technical advice)	**Direct provision of services** (investment programmes, funding)	
• Pollution charge for SO_2 increased by 30% to 390 lcu/tonne • Gas tariffs for households increased by 170% to 15 lcu/m^3 • Average electricity tariffs increased by 127% to some 31 lcu/kwh			**Air pollution**
• Water tariffs for households increased by 143% to 56 lcu/m^3 • Abstraction fees for utilities increased by 180% to 4 lcu/m^3			**Water supply and sanitation**
• Waste disposal charge increased by 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 by 169% to 0.35 lcu/m^3 • Water pollution charges increased by 30%			**Water resources**
	• Awareness-raising materials on biodiversity published and disseminated (7)	• Expenditure on protected areas management increased by 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 at pre-school level • Website, 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**

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The political and economic landscape in the countries of Eastern Europe, Caucasus and Central Asia is evolving. Are environmental policies keeping pace? What major environmental policy measures have been taken by each country? What are the main barriers to further progress? What are the emerging policy issues and priority areas for action?

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