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**OECD
EAP Task Force**

**TENTH MEETING OF THE EECCA ENVIRONMENTAL FINANCE
NETWORK**

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TRENDS IN ENVIRONMENTAL FINANCE IN EECCA

Document 1

This document will support the discussion under session 2 on Environmental Expenditure and Environmental Finance in EECCA.

ACTION REQUIRED: For discussion and endorsement.

FOREWORD

This report examines developments in environmental financing in Eastern Europe, Caucasus and Central Asia (EECCA) since 2000. It focuses on expenditures, both domestic sources of finance, as well as external environmental assistance; the latter includes Official Development Assistance/Official Assistance (ODA/OA), and lending from International Financial Institutions (IFIs).

The report was prepared within the framework of the EAP Task Force – the Task Force for the Implementation of the Environmental Action Programme. The Task Force Secretariat has been located at the OECD Environment Directorate since 1993, and has prepared a series of reports on this and other issues related to environmental finance in that time. This report has been prepared as part of the EAP Task Force's contribution to the Environment for Europe Ministerial Conference, to be held in Belgrade in October 2007.

Carla Bertuzzi and Xavier Leflaive prepared this report in close co-operation with Vladimir Morozov (Kiev, Ukraine) who has been instrumental in collecting data on environmental expenditure from the EECCA countries. The authors would like to specially thank Brendan Gillespie, Nelly Petkova, and Alexander Martoussevitch for their valuable comments. In addition they owe a special debt to all persons and organisations that invested a substantial effort in collecting and compiling data for the report.

This report does not necessarily reflect the views of the OECD, the EAP Task Force or their members.

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LIST OF ABBREVIATIONS

OA Official Assistance (Flows of assistance going to the following transition countries: Belarus, the Russian Federation and Ukraine).

ODA Official Development Assistance (Flows of assistance going to the following developing countries: Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Moldova, Tajikistan, Turkmenistan and Uzbekistan).

EECCA Eastern Europe, Caucasus and Central Asia (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, the Kyrgyz Republic, Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan). These countries are also identified as the Community of Independent States (CIS).

Other geographical groupings are:

- **the Baltic States:** Estonia, Latvia, Lithuania.
- **Central Eastern Europe:** the Czech Republic, Hungary, Poland, the Slovak Republic, Slovenia.
- **South Eastern Europe:** Bulgaria, Croatia, Romania, Albania, Bosnia and Herzegovina, FYR Macedonia, Montenegro, Serbia.

EXECUTIVE SUMMARY

Progress in expenditure monitoring

Since 2003, when a similar report on Trends in Environmental Expenditure in EECCA countries was prepared, the capacity to monitor environmental expenditure has improved in some EECCA countries. As a consequence, this report covers some countries and some issues in greater depth.

Nevertheless, the analysis of environmental expenditures is still impaired by methodological and procedural problems: in addition to differences among EECCA countries, data may be collected by a variety of national authorities within the same country, which sometimes use different definitions and tools, and it has not always been possible to reconcile the reported data. Monitoring environmental expenditure is also weakened by the lack of resources devoted to data collection and processing. These are barriers to policy making and to the more effective allocation of financial resources. In a couple of cases, the provision of environmental expenditure data has been impeded because it is considered a sensitive issue.

Trends in environmental expenditure

Probably the starkest observation is the sharp dichotomy between richer and poorer EECCA countries. In terms of GDP, the size of EECCA economies ranges from Russia at USD 763.3 billion to Tajikistan at USD 2.3 billion. This dichotomy is likely to increase as economic growth in the energy- and resource-rich economies continues at a high level (GDP growth in Azerbaijan increased by 26 per cent in 2006), while that in the less well endowed countries stagnates (GDP growth in the Kyrgyz Republic was -0.6 per cent in 2006).

The magnitude of environmental expenditure in EECCA countries reflects these differences. In the bigger economies in the EECCA region (the Russian Federation, Kazakhstan, Ukraine) and in Belarus, environmental expenditure has increased to levels which compare with some CEE countries. However, the levels of environmental expenditure in these countries have increased more slowly than economic growth. In these countries there are opportunities to increase both public and private expenditure volumes, to increase the share of investment (in particular in process-integrated technologies), and to allocate resources to a wider variety of environmental domains.

In the smaller economies (Armenia, Azerbaijan, the Kyrgyz Republic, Moldova), environmental expenditure is very low in absolute and in relative terms. Decision-makers may be inclined to wait for higher income levels before allocating more resources for environmental purposes, despite the positive effects that such expenditures could have on economic development and public health.

In general, total environmental protection expenditure has slightly increased, in constant dollar terms, in each EECCA country.

- In Russia, Ukraine and Kazakhstan: in 2005, Russia spent USD 5,666 million (50% more than Poland) to protect the environment; Ukraine and Kazakhstan spent USD 882 and 479 million, respectively. These countries allocate a similar share of their income to environment

protection as do CEE countries (between 1.6 and 1.2%). However, environmental expenditure per capita remains low at less than 40 USD per year. This compares with roughly 50 USD in the Slovak Republic and 100 USD in Poland;

- In Moldova, Azerbaijan, Georgia, the Kyrgyz Republic and Armenia: these countries spend less than 30 million USD per year to protect the environment. This represents between 1.0 and 0.2% of GDP; this indicates that the willingness-to-pay for environment protection is low; it also signals the stringency of the affordability issue for both governments and households. Environmental protection expenditure per capita remains extremely low in both absolute and relative terms (less than 10 USD per capita per year);
- Belarus. This country often stands as an outlier. The country shows relatively high levels of environmental expenditure (499 million USD, 2.4% of GDP, 44 USD per capita), compared to EECCA and CEEE countries. In addition, investments represent a significantly high share of environmental protection expenditure. Reasons for this are not clear and would benefit from further analysis.

In all EECCA countries except Kazakhstan, wastewater receives the highest share of environmental expenditure: between 43 and 67% of the total amount. Air attracts a significant share of the total in industrialised economies (37% in Kazakhstan; 22% in the Russian Federation and Ukraine), in Armenia (32%) and Belarus (20%). Waste attracts relatively little attention, except in Kazakhstan (18%), Ukraine (15%) and the Kyrgyz Republic (12%).

In Kazakhstan and Belarus, investment represents more than 40% of total environmental protection expenditure, a performance which compares with that of Poland and the Slovak Republic. The share of investment has been increasing in Armenia, in the Russian Federation (it is now more than 30%), in Ukraine (22%). It remains below 15% in Azerbaijan, the Kyrgyz Republic and Moldova.

In Russia, Ukraine and Kazakhstan, environmental investment represents some 2% of the GFCF, similar to that in Germany; the ratio is above 4% in Belarus.

The data suggest that, with the exception of Russia and, to some degree, Moldova, the public sector is not the major source of finance for environment protection. This may reflect some expenditures being reported as undertaken by the private sector, but actually financed by the public sector. It may also reflect contrasting situations in countries: in the Kyrgyz Republic, government spending is so low that it can only represent a marginal share of total environment protection expenditure, whereas in Kazakhstan, business firms are now required to spend significant amounts of money to protect the environment.

In general, EECCA governments have not allocated high levels of financing to protect the environment. In most EECCA countries, environmental protection represents less than 0.5% of government spending. However, in Belarus and Moldova it amounts to approximately 1.5%, similar to Poland, and in the Russian Federation it is more than 2.5%. In these three countries however, the share of government expenditure devoted to environmental protection has declined since 2000.

The financier principle measures who ultimately pays for environmental protection (rather than who spends for it), taking account of transfers between sectors. In that perspective, public expenditure comes from the general budget of the central government; private expenditure is the sum of expenditure financed by the enterprises' own resources and of net transfers to the public sector (subsidies, transfers; fees and purchases paid for environmental services).

In the few countries which reported on this indicator, the public sector is the major financier for biodiversity protection; Belarus is an exception, where business firms contribute to that domain.

According to the reported data, in Belarus, the government receives more money from the business sector and from specialised producers of environmental services than it actually spends on environment protection. In Kazakhstan, the public sector receives more money on waste than it spends on this domain; it does so via a pollution charge which is levied on industries which dispose waste.

Trends in international environmental assistance indicate a structural change

International environmental assistance covers “environmentally related” ODA and OA, which relates to a broader group of characteristic activities, normally excluded from the field of environmental protection expenditure¹. So, it is not possible to compare domestic environment protection expenditure and international environmental assistance.

Moreover, it is not easy to compare bilateral assistance (essentially made of grants) and multilateral support (which consists of loans, which have to be repaid either on commercial or concessional terms). Japan is an exception, as a major part of its assistance to EECCA consists of two large, concessional loans (for water supply and sanitation in Kazakhstan in 2003); the grant element of Japanese assistance reported in the DAC database is 69%.

Environmental assistance: a secondary but energizing source of finance

Environmental assistance to EECCA has witnessed a structural change since 2001. Multilateral assistance reached 1,829 million USD over the period 2001-05; it has multiplied by almost 2, although it started from a low level after the financial crisis had affected a large number of projects at the turn of the century.

In contrast, bilateral environmental assistance in 2005 is below the level of 2001. The cumulative total from 2001-05 was USD 958 million. Some bilateral donors which had played a major role in the early stages of the transition have scaled their effort back (US, UK, Denmark, Sweden), while others have emerged or have significantly increased their contribution (Japan, the EC, Switzerland, Germany, Finland). Over the period 2001-05, major bilateral contributors are Japan (with cumulative assistance of USD 210 million), the European Commission (USD 191 million), the US (USD 135 million) and Germany (USD 104 million), Switzerland (USD 85 million) and France (USD 79 million). The share of environmental assistance in total bilateral assistance has been reduced by half during the 2001-05 period; this may be related to donors providing general budget support, rather than project support.

Both bilateral and multilateral assistance particularly favour large, oil-producing countries: the Russian Federation and Kazakhstan together received respectively 50% and 75% of bilateral and multilateral assistance since 2001. Turkmenistan and Belarus have hardly received any environmental assistance.

Bilateral and multilateral environmental assistance remains marginal as a share of GDP (below 0.6% in most cases). Bilateral environmental assistance represents less than 5 USD per capita and per

¹ In contrast to the concept of environmental protection, environmentally related ODA and OA include activities such as the management of water and other natural resources and their exploitation. Environmentally related ODA and OA also includes assistance for projects which are not strictly environmental, but which have an environmental component; IFIs often refer to these projects as “mainstreaming of environment”.

year, and multilateral environmental assistance is below 3 USD. This indicates that neither ODA nor IFI finance can be a substitute for domestic environmental finance in EECCA. However, projects supported by the international community are recognised as having particularly positive demonstration and catalytic effects, both in terms of technology transfer and the development of new skills and know-how.

Donors' fatigue and the structural change in environmental assistance

The change in the structure of environmental assistance has consequences, since bilateral donors and IFIs do not follow the same priorities:

- Multilateral environmental assistance is very much focused on Russia (which received USD 1.2 billion, 63% of cumulated multilateral environmental assistance since 2001); whereas bilateral assistance is more balanced: Armenia is the third largest recipient of bilateral environmental assistance, with USD 71 million over the period 2001-05;
- Donors give a relatively higher priority to regional projects: they allocate 12% of their resources to EECCA-wide projects (USD 117 million over the same period); IFIs do so marginally only (1.2%);
- Water supply and sanitation receive the greatest share of resources from both bilateral donors and IFIs. However, bilateral donors have allocated 28% of their resources support to environmental policy, a domain which is not directly addressed in IFIs loans.

A key challenge for the years to come will be to scale up and disseminate the positive experiences from donor and IFI projects. Improved coordination among donors and IFIs could help to avoid overlaps and competition. This would be easier if all EECCA countries explicitly identified environmental protection as a priority in national economic strategies and bilateral cooperation programme, and if governments designed sustainable and realistic finance strategies to achieve their environmental goals.

A strengthened capacity to plan, at both central and decentralised levels, an improved capacity to prepare and implement projects, and an established capacity to deliver are required to attract donors' attention for environmental projects in EECCA countries.

INTRODUCTION

Environmental finance has been on the agenda of the “Environment for Europe” process since its beginning in 1993. The Lucerne Conference in 1993 focused on external sources of environmental financing, although participants acknowledged that the largest proportion of the financing for environmental investments in Central and Eastern Europe (CEE) and in Eastern Europe, Caucasus and Central Asia (EECCA) would come from the countries themselves. Discussions highlighted the importance of priority setting, strengthening local financial institutions, cost-effective use of scarce resources and external funding as a catalyst to leverage domestic funding.

At the Sofia Conference in 1995, it was acknowledged that demand for environmental financing was still low throughout the region as a whole. It was recognised that major obstacles to increased environmental financing in CEE and EECCA were more a question of the high price of commercial financing and limitations in flexibility of financing institutions than the lack of financing itself. Thus discussions focused on the development of flexible financing mechanisms and provision of affordable or soft financing on a transitional basis.

At the Aarhus Conference in 1998, it was recognised that there was a need to increase the focus on EECCA. Developments in environmental financing in CEE were increasingly driven by European Union (EU) accession and legislation requirements. For EECCA there was no equivalent driver or clear goal for environmental developments. In this context, emphasis was placed on integrating environmental concerns into economic development, strengthening capacity for environmental financing, and on private – public partnerships.

At the Kiev Conference in 2003, the Ministers endorsed the EECCA Environment Strategy. One of the Strategy’s objective aims at establishing and strengthening mechanisms for mobilising and allocating financial resources to achieve environmental objectives². The Kiev Declaration called for existing sources of finance to be used more efficiently. It encouraged the implementation of the Good Practices for Public Environmental Expenditure Management (PEEM) as well as the preparation of realistic environmental and financing plans, at both national and local level. It also made clear that additional domestic and international finances should be mobilised for environmental purposes. In particular, local finance should be strengthened as well as the contribution made by business and industry.

This report builds on previous reports on environmental finance prepared by the EAP Task Force. It provides information and analysis on trends in environmental expenditure and international environmental commitments to EECCA. It also sheds some light on some recent developments in environmental financing in the region.

Data were reported from ten countries out of twelve: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, the Kyrgyz Republic, Moldova, the Russian Federation, Tajikistan³, and Ukraine. Georgia

² A companion publication reports on the implementation of the EECCA Environment Strategy.

³ Data were received just when this draft was being sent for review. Data will be integrated in the revised version.

has only sent data for 2001, as no data on environmental expenditure has been collected since; Turkmenistan and Uzbekistan have not reported data yet.

Chapter 2 presents methodological issues related to data collection, availability and quality. Chapter 3 presents selected economic developments, which provide the background for environmental expenditure and finance in EECCA. Chapter 4 monitors recent trends in environmental expenditure in the region. Chapter 5 presents international public commitments to the region, focusing on Official Development Assistance/Official Assistance (ODA/OA) and IFIs commitments.

METHODOLOGY AND MAJOR ISSUES

This report builds on the experience of the previous report *Trends in Environmental Expenditure and International Commitments for the Environment in EECCA, 1996-2001*, prepared by the EAP Task Force in 2003. That was the first attempt at collecting consistent, cross-country environmental expenditure data in EECCA in a time series. Since that time, progress has been made to harmonise environmental expenditure information systems with OECD/Eurostat Standards.

This report covers data on environmentally related commitments and, to the extent possible, data on environmental protection expenditure, defined accordingly to the internationally agreed classifications. Not all the countries, however, could re-arrange existing definitions and classifications to the proposed framework, and in some cases the data provided included expenditure for the management of natural resources and their exploitation as well as some other environmental beneficial activities which are normally excluded from the field of environmental protection.

Domestic expenditure data were collected from national official statistics. The data have been cross-referenced where possible with other data sources. The data on international commitments have been collected from the OECD Development Assistance Committee (DAC) Aid Activity Databases and cross-checked by directly surveying international financial institutions (IFIs) and international co-operation and environmental agencies in individual donor countries.

A method to monitor environmental protection expenditure

OECD work on Pollution Abatement and Control (PAC) expenditure dates back to the late 1970s. A first questionnaire was sent to member countries in 1991. Since 1996, data have been collected through a joint OECD/Eurostat questionnaire, periodically revised to foster cross-country comparability and to minimise reporting efforts. Following the 2001 revision, the current questionnaire focuses on expenditure for environmental protection activities composed by the flow of investment, internal recurrent expenditure, subsidies and fees directly aimed at environmental protection. It includes expenditure incurred by the public and business sectors, households and specialised producers of environmental services.

The definition of environmental protection expenditure (EPE) excludes expenditure on natural resources management and prevention of natural disasters, expenditure that primarily complies with health and safety requirements or motivated by commercial, technical or efficiency grounds. Also excluded are: the depreciation of fixed capital; the cost of capital as well as the payment of interest, fines and penalties for non-compliance with environmental regulations.

The OECD/Eurostat questionnaire has been used by the EAP Task Force as a basis for the analysis of environmental protection expenditure in EECCA. A more detailed presentation of the method is appended (see annex 1); this annex also identifies major areas for improvement of environmental protection expenditure data collection systems in EECCA countries.

Monitoring environmental protection expenditure in EECCA countries

The OECD, in conjunction with Eurostat, has promoted the adoption of a common framework for environmental expenditure accounting in a number of EECCA countries that will facilitate harmonisation of methodologies, comparison of resulting data, and support sound environmental policies. The EAP Task Force has implemented a number of projects to facilitate the dissemination of this framework in EECCA countries (in Georgia, the Kyrgyz Republic, and Ukraine).

EECCA experts endorsed some of the lessons learnt from this work at a regional workshop, in Kiev (Ukraine) in October 2005. The experience of the countries represented at the Kiev workshop confirmed that the OECD/Eurostat standards can help improve the quality of environmental protection expenditure data, and of the tools used to collect, process, and disseminate them.

In the context of transition economies, the following issues are key:

- The scope. The methodology makes a distinction between environmental protection, environment, and environmentally related (including water supply) expenditure. Not all countries make these distinctions; typically, some countries include water supply and other natural resources management;
- The register. Statistical systems in the region are usually quite effective at collecting data from entities (including business firms) listed in some register; but the lists are often far from comprehensive, and the criteria to design them have to be revised and adapted to the new economic and technological context. In particular, specialised producers of environmental services (an industry which is likely to flourish in transition economies) ought to be included;
- The abater/financing principle. Existing systems are usually unable to document the financial flows behind environmental expenditure. Thus, it is difficult to know who effectively pays for what. In addition, there is a risk of double counting;
- The distinction between end-of-pipe and process-integrated technologies. The inability of existing systems to identify the type of investments raises concerns about the nature of the data reported in this category;
- Public expenditure. In most EECCA countries, budgetary accounting has to be reformed, to produce the data needed for policy and statistical purposes. The same holds for household expenditure, which is currently ignored, although it is likely to grow, as markets develop for environmental services.

In this context, it has proved useful to implement flexible methodologies for the reform of the statistical system on environmental expenditures. The report *Harmonisation of Environmental Expenditure Information Systems with Eurostat/OECD Standards: Kyrgyz Republic and Ukraine* (EAP Task Force, December 2005) highlights the different routes which were followed in the Kyrgyz Republic and in Ukraine, to achieve similar objectives.

Quality of the data set

Notwithstanding the common roots of expenditure reporting methodologies, the data on environmentally related expenditure collected in different EECCA countries differ in terms of coverage and comparability. The table below gives a quick overview of the main features of

environmental protection expenditure data reporting systems in individual countries in the region. These differences should be kept in mind whenever international comparisons are made.

Table 1. Perimeter of data provided by country

	Time series	Coverage of environmental media			Coverage of sectors			Types of expenditure	
		Environment al protection expenditure	Natural resource management	Distinction between WS and sanitation	Public sector	Specialised producers	Business sector	Investment	Current expenditure
Armenia	2000-05	Partial coverage	--	--	Aggregate data only	Aggregate data only	Inaccurate	Include capital repair	Y
Azerbaijan	2000-05	Y	--	--	Y/ Central Governmen t	Y	Y	Y	Y/Partial
Belarus	2000-05	Partial coverage	--	--	Aggregate current expenditure	Y	Y	Business sector	Y/Partial
Georgia	2001	Y	Y	Y	Y/ Central Governmen t	Y	Y	Y	Y
Kazakhstan	2000-05	Partial coverage	--	--	Y (incl. regional/ local)	Y	Y	Business sector	Y/Partial
Kyrgyz Republic	2000-05	Y	Partially included	N	Y	Y	Y	Y	Y
Moldova	2000-05	Y	--	--	Y	Y	Y	Y	Y
Russian Federati on	2000-05	Partial coverage for waste and wastewater treatment	--	--	Partial	N	Y	Y	Merged for public and business
Tajikistan	..	..	..	..	..	..	..	..	..
Turkmenistan	..	..	..	..	..	..	..	..	..
Ukraine	2000-05	Y	N	N	Partial - no investments	Y	Y	Merged for public and business	Y
Uzbekistan	..	..	..	..	..	..	..	..	..

Source: National statistics.

Notwithstanding the problems with data quality and comparability, in the course of preparation of this report every effort was made to ensure that on aggregated levels it provides a reliable source of information on which to base further analytical studies.

Public international commitments, ODA/OA and IFIs lending

Official Development Assistance (ODA) and Official Assistance (OA) are defined as aid flows to developing countries (Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Moldova, Tajikistan, Turkmenistan, and Uzbekistan) and countries in transition (Belarus, the Russian Federation, Ukraine), respectively⁴.

⁴ As from 2005, donors are no more required to report OA to transition countries, therefore data for this year may underestimate the amount of assistance provided to the EECCA region

To qualify as ODA/OA, a transaction must be undertaken by the official sector for the main purpose of promoting economic development and welfare, be concessional in character, and convey a grant element of at least 25%. Data are collected annually from the members of the OECD's Development Assistance Committee (DAC), which comprises 22 members and the European Commission, through two reporting systems: the aggregate DAC statistics and the activity-specific Creditor Reporting System (CRS)⁵. The data cover aid loans and grants, other official flows, private market transactions and assistance from non-governmental organisations to each recipient country and regions. In addition to financial flows, technical co-operation is included in aid. Grants, loans and credits for military purposes are excluded.

The data presented also includes revision and updates from donor countries and IFIs collected throughout the preparation of this report. Those IFI flows that qualify as ODA/OA are included in this report as IFIs commitments, and not as bilateral ODA/OA.

The definition of assistance reported here includes "environmentally related" commitments following a classification proposed by the World Resources Institute (WRI) (Donge and others, 2001) which is presented, with some minor modification, in Annex 2. The choice of a definition has a profound impact on the magnitude of estimated commitments. For example, in 2000 the total environmental assistance to all developing and transition countries was USD 1.4 billion under the strict OECD environment terminology, but was USD 7.3 billion under the expanded WRI definition.

Contrary to the domestic expenditure data, the international flows data used in this report are reported based on commitments, not disbursements. Commitments may, however, be different from assistance actually received, as they may be cancelled or postponed. Therefore commitments data are an overestimate of the actual flow of assistance. There are also problems with comparing commitments with Gross Domestic Product (GDP) and other macro economic indicators as commitments taken in one year may involve disbursement over several years.

The assistance and development lending is reported at aggregated levels as well as at disaggregated levels (project specific data), and unfortunately these two reporting frameworks do not give the same results. Reporting at the aggregate level is comprehensive and more or less complete, but does not allow for distinguishing environmentally related assistance from total assistance or breakdowns of expenditure by environmental domain. At the project level (CRS project database) environmentally related assistance can be identified with higher accuracy, but only about 60% of total ODA/OA flows are reported. Not all countries report their assistance at the project level to the CRS database.

For the purpose of this report the effort was made to supplement missing project specific data in the CRS database to achieve comprehensiveness of the aggregated DAC database and not to lose the structural insight of the CRS. Therefore the major donor countries and IFIs operating in the EECCA region have been asked to update the information on environmentally related projects in the CRS database. Some donors have provided project-specific information with purpose code identification, whereas others have provided aggregated figures. The OECD/EAP TF Secretariat has added the information provided by the countries and IFIs to the CRS database figures. All major donors to EECCA have either reported assistance at the project level to the EAP TF Secretariat or provided aggregated figures for environmental assistance to EECCA countries.

⁵ For further details on the databases coverage and reporting directives consult the DAC site at the following address: www.oecd.org/dac/stats.

Notwithstanding identified problems with the coverage and definitions of data and methodological problems with their collection and aggregation, this report remains the most comprehensive and the most detailed source of factual information on the levels and trends of international assistance for environmental purposes in the EECCA countries.

ECONOMIC TRENDS IN EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA

EECCA is a large region, made of twelve independent states, which share the heritage of the Soviet era. Since 1991, countries in the region have undertaken economic reforms to a greater or lesser degree. This has resulted in a variety of patterns of economic performance and prospects, which have consequences for the environment and for environmental finance.

Most countries in the region have enjoyed sustained economic growth, after the financial crisis of the late 1990s. Growth potentially has positive social and economic consequences. It generates additional financial resources, at both government and household levels, which can be used to address environmental concerns. In the resource-intensive economies of EECCA, economic growth is likely to generate additional pressures on the environment. This is particularly the case if these economies have failed to benefit from globalisation, as a driver for innovation and the dissemination of modern, resource-efficient technologies.

Macro-economic performance⁶

EECCA countries range from very small to large economies: GDP was 2.3 billion USD in Tajikistan in 2005; it was 763.3 billion USD in the Russian Federation.

They also range from very poor to medium income economies. In 2005, GDP per capita varies from 364 USD in Tajikistan, to 5,349 USD in Russia; compare to Poland (7,600 USD) and the Slovak Republic (8,600 USD). In four countries, GDP per capita is above USD 3,000: Russia, Kazakhstan, Turkmenistan, Belarus. In the other countries in the region, GDP is below USD 5 per person per day. Obviously, this raises the issue of the affordability of a number of goods and services, including environmental ones.

EECCA countries have experienced an average GDP growth rate of 6.6% in 2005, down from 8% in 2004. EBRD forecasts for 2006 remain high, at 6.9%. On this indicator, EECCA countries perform better than Central and Eastern Europe and the Baltic States in 2005-06 (4.7% in 2005, 5.3% in 2006) and South-Eastern Europe (SEE) (4.7% in 2005, 5.9% in 2006). However, the average masks contrasted performances within the region; growth rocketed to +26.4% in Azerbaijan and plummeted to -0.6% in the Kyrgyz Republic.

⁶ Data in this section are taken from the *Transition Report 2006* (EBRD, 2006), which includes Mongolia in EECCA countries.

Table 2. Macroeconomic indicators for the EECCA region

	Population, 1000 inhabitants	GDP billion USD	GDP per capita, USD	GDP, real growth, % over the previous year	General government expenditure, % GDP	Share of general government tax revenue in GDP (%)	Gross fixed capital formation, million USD	FDI inflows, % GDP	Inflation, % change from previous year	Domestic credit provided by the banking sector (% of GDP)
	2005	2005	2005	2005	2005	2005	2005	2005	2005	2005
Armenia	3 016	3.8	1 140	14.0	17.7	14.5	1 437	5.2	2.0	8.6
Azerbaijan	8 388	12.6	1 493	26.4	23.5	..	..	3.6	7.6	0.0
Belarus	9 776	29.6	3 031	9.2	49.1	33.9	8 256	1	13.0	21.9
Georgia	4 474	6.4	1 480	9.3	24.9	15.7	1 681	6.5	6.8	21.5
Kazakhstan	15 146	56.1	3 717	9.4	22.6	21.3	13 945	3.1	7.3	25.2
Kyrgyz Republic	5 156	2.4	473	-0.6	28.3	..	..	4.1	4.0	9.5
Moldova	4 206	2.9	861	7.1	38.0	21.6	411	7.7	10.0	..
Russian Federation	143 151	763.3	5 349	6.4	36.0	23.7	138 830	0.2	11.8	20.7
Tajikistan	6 507	2.3	364	6.9	23.0	12.7	298	1.6	5.7	..
Turkmenistan	4 833	17.1	3 406	9.6	18.8	..	..	3.8	8.1	..
Ukraine	47 111	82.9	1 766	2.6	42.7	18.5	15 726	9.6	12.5	34.5
Uzbekistan	26 593	11.7	444	7.0	32.6	..	3 157	1.5	14.1	..

Source: EBRD, IMF, UNCTAD, World Bank.

Private consumption and exports are a major driver for growth in all EECCA countries, and should remain so in the future.

Most countries have benefited from real wage growth (+15.9% across the region in 2005), rapid credit growth and strong inflow of remittances. This has generated residential investment in most countries, with the construction sector booming. However, domestic savings are insufficient to cover investment. Domestic demand and private consumption are the main drivers of rapid growth in Armenia, Belarus and Georgia. Investment has been a driver for growth in such countries as Uzbekistan (where Russia and China have invested in the development on oil and gas infrastructure), Russia and Ukraine.

Oil and gas and commodity exporting countries (Azerbaijan, Kazakhstan, Russia, Uzbekistan, and Turkmenistan) have benefited from rising international prices. Azerbaijan has become one of the fastest growing economies in the world, since the opening of the Baku-Tbilisi-Ceyhan oil pipeline, and the forthcoming operation of the South Caucasus gas pipeline. In Ukraine, the pace of growth should double in 2006, due to rising international prices in metal and steel and strong domestic demand.

Small economies (Moldova and the Kyrgyz Republic) perform below average.

The end of a privileged access to Russian resources has generated a steep increase in energy prices in a number of EECCA countries, which contributed to higher inflation. In the medium term, this could be an incentive to invest in resource efficient technologies and processes.

Population and demography

Two features of population dynamics deserve particular attention, from an environmental point of view, as they present both threats (of additional pressures) and opportunities (on how to mitigate these pressures): ageing, and international migrations.

The United Nations anticipate that population in EECCA countries (along with Germany, Italy, and Japan) will be lower in 2050 than in 2005. Mortality rates in the region have risen, due to the

degradation of social and sanitary services. The Russian Federation and Ukraine in particular witness a higher mortality than in the 1960s, and life expectancy in these countries is shorter than it used to be. In countries where pensions have been severely cut to tame inflationary pressures since the late 1990s, ageing creates additional pressures on public finance and makes the affordability issue (for water supply typically) more pressing for particular social groups.

Ageing also creates demand for a young labour force from abroad. According to a recent publication by the World Bank⁷, migration within and from the transition economies of Europe and Central Asia has been large and will likely continue to increase. Russia is the second migrant-receiving country worldwide, and Ukraine, Kazakhstan, and Poland are also in the top ten. Russia attracts migrants from the rest of the former Soviet Union, primarily from Ukraine, Moldova, the Caucasus and Central Asia, but also from Vietnam and China. Ukraine serves as a transit point for migrants on their way to Western Europe; the United Nations anticipates that by 2050, Ukraine will be a major source of labour migrants. Poorer Central Asian workers migrate to resource-rich Kazakhstan.

International migrations have macro-economic consequences: for a number of EECCA countries, remittances are the second source of foreign finance, after FDI. Tajikistan and Armenia are among the 20 largest recipients of remittances worldwide. A recent survey by the World Bank estimates that remittances account for 27% of GDP in Moldova and exceed 10% of GDP in Armenia and Tajikistan.

Trade and international flows

In general, except for energy and commodity production and exports, EECCA countries have remained marginal in international flows. The lesser integration has generated only a smaller incentive for firms to reduce production costs and to innovate: the effects of imports on business decisions have been more muted than in countries where markets are more competitively structured as a result of more advanced reforms (World Bank, 2005, pp.93-94).

China will play an increasing part in the economies of Central Asia. It is attracted by their energy and natural resources. Trade between Central Asia and China is expanding rapidly. China is already a major investor in Kazakhstan; it supports the development of transport infrastructure in Kazakhstan, the Kyrgyz Republic, Tajikistan, and Uzbekistan. This suggests that the EECCA region is subject to a variety of attractions, from Europe to China.

International trade

World Trade Organisation (WTO) statistics show that EECCA trade flows contrast with those of SEE. EECCA countries tend to trade with themselves (except for fuels and mining products, see the table below); their exports to EU 15 have changed little since 1991; Ukraine is an exception. These countries trade mostly natural resources (oil and gas, primary metals, coal, timber, etc.), as well as products of fishery and agriculture (e.g. cotton).

Most EECCA countries have remained outside network trade of any form (where countries complete different stages of final products, as a signal of the fragmentation and the internationalisation of the manufacturing process). The only exceptions are a few countries active in natural resource trade: they have been active in buyer-driven production chains (associated with unskilled-labour-intensive exports) but have failed to move toward production-driven supply chains (associated with skilled-labour-intensive and capital-intensive exports) (see World Bank, 2005).

⁷ World Bank, 2007, Migration and Remittances: Eastern Europe and the Former Soviet Union.

Table 3. Merchandise exports of the EECCA countries by major product and destination, 2004

Total merchandise - Total value, billion USD		265.7
		% share
Europe		48.5
Commonwealth of Independent States (CIS)		20.7
Others		30.8
<i>Fuels and mining products</i>		
Europe		61.5
Commonwealth of Independent States (CIS)		13.4
Others		25.2
<i>Manufactures</i>		
Commonwealth of Independent States (CIS)		31.7
Europe		31.3
Others		37.1
<i>Agricultural products</i>		
Commonwealth of Independent States (CIS)		33.1
Europe		25.7
Others		41.1

Source : World Trade Organisation, International trade statistics 2006.

Foreign direct investments

The region receives a steady flow of foreign direct investment (40 billion USD in 2005, including South-East Europe and EECCA); the share of inward FDI in GFCF has risen from 11% in 2000 to 17% in 2005. The EBRD projects that FDI will decline slightly from the levels recorded in 2004-05, as foreign investors have revised their assessment of the vulnerabilities of these economies and learned to discriminate between strong and weak reformers in the region.

UNCTAD data show that, in 2005, FDI inflows were concentrated on the Russian Federation and Ukraine; the atypical performance of Ukraine that year reflects the one-off effect of privatisation revenues, including the sale of Kryvorizhstal to Mittal Steel.

Economies which have natural resources are obviously attractive, but have difficulties attracting investors to higher value-added and diversified activities. Russia is an exception, as inward FDI spans across the whole economic spectrum from natural resources to R&D (in 2005, General Motors has established a research centre on electric vehicles in Moscow).

EU member states, the United States and the Russian Federation account for respectively three fifths, 10% and 5% of greenfield inward FDI in the region, and more than 80% of privatisation and investment in private companies. The Russian Federation is the sole EECCA country to invest significantly abroad. One major driver is to secure sourcing for oil and gas industries.

China is increasingly active in the region, in particular in resource-rich economies of Central Asia: Chinese companies trade and invest in energy-related sectors. The Chinese government is providing financial assistance to infrastructure projects.

Transition in EECCA countries

The EBRD shows that higher prices for energy and natural resources have generated a cushion which has hampered reform in energy-producing countries. Sustainable growth will only materialise in these countries if they implement difficult reforms to restructure enterprises, encourage entrepreneurship, and strengthen market-supporting institutions, as well as create strong incentives for reducing energy and natural resource intensity of GDP and output.

In the past year, transition has been concentrated in the wealthier economies, namely Kazakhstan, the Russian Federation and Ukraine. Some countries (e.g. Tajikistan, Uzbekistan) are still at the very early stage of transition.

ENVIRONMENTAL PROTECTION EXPENDITURE IN EECCA

This section discusses and compares trends in environmental protection expenditure. Expenditure is compared across countries, where possible, through composite indicators, such as shares of GDP, per capita amounts. Wherever possible, efforts were made to distinguish between current and capital investment spending, between public and private expenditure, and between expenditure by different environmental domain. A brief discussion on financiers has also been included (who pays for environmental protection expenditure). The analysis includes country time series for the period 2000-05 and cross-country regional trends where possible.

Cross-country comparisons should be interpreted with caution. First, despite the common methodological origin, country-specific expenditure definitions and classifications still differ across countries, although every effort has been made for this report to convert existing expenditure classifications to the common OECD framework. Second, data accuracy and reliability varies widely between countries and within countries. Wherever the OECD/EAP Task Force Secretariat had serious doubts, it is noted in the report.

Total environmental protection expenditure

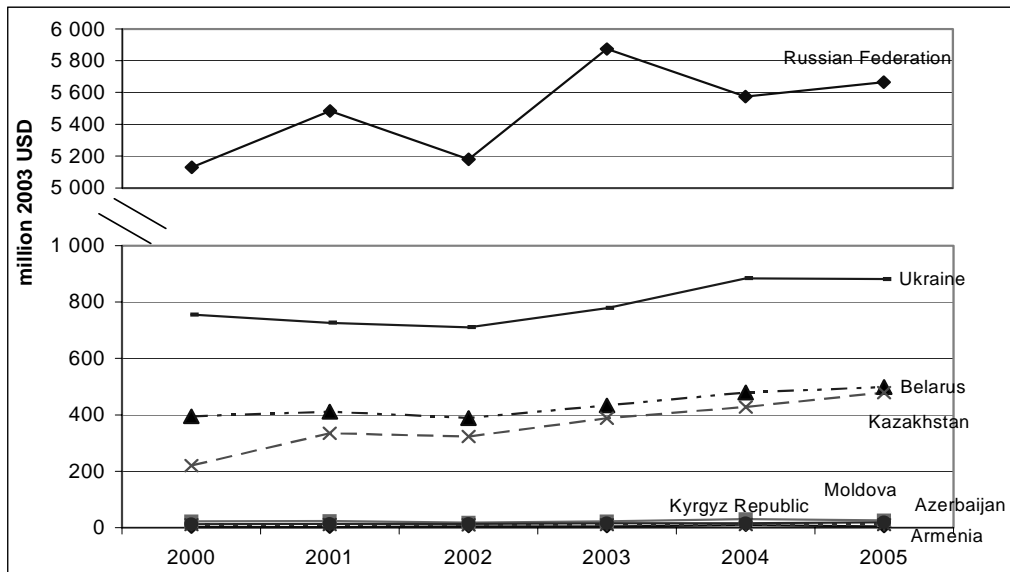
Figure 1 shows that total environmental protection expenditure has, at least slightly, increased, in constant dollar terms, in all the countries which have reported data.

In 2005, environmental protection expenditure amounted to 5,666 million USD in the Russian Federation (compare with 3,750 million USD in Poland). Over the 2000-05 period, the trend has been positive but erratic.

Three other EECCA countries spent more than 500 million USD on environmental protection in 2005. This group includes Kazakhstan, and Ukraine, the largest economies in the region (after Russia), with the largest population and the highest level of industrialisation. Belarus is the third one. This level is well below Poland, but twice as much as the Slovak Republic (where 234 million USD were spent on environmental protection expenditure in 2003). In this group of countries, the trend shows a downturn in 2002, and a steady growth afterwards.

In another group of EECCA countries, the level of expenditure remains extremely low. This is the case of Armenia, Azerbaijan, the Kyrgyz Republic, and Moldova, where environmental protection expenditure amount to less than 30 million USD per year. Such a low level of expenditure suggests a failure to implement environmental policies. It also suggests that there are very few business opportunities for environmentally-related equipment and services; such markets are unlikely to attract any significant player as the entry barriers may be higher than the potential benefits. In these countries, prospects are gloomy, as progress has been extremely slow.

Figure 1. Total environmental protection expenditure in EECCA countries, 2000-05, million 2003 USD



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sectors may vary.

Source: National statistics.

Environmental protection expenditure as a share of GDP

The ratio of environmental expenditure divided by GDP indicates the share of income that a country is willing to devote to environment protection. As can be seen on Figure 2 below, this ratio varies significantly among the countries which have sent data.

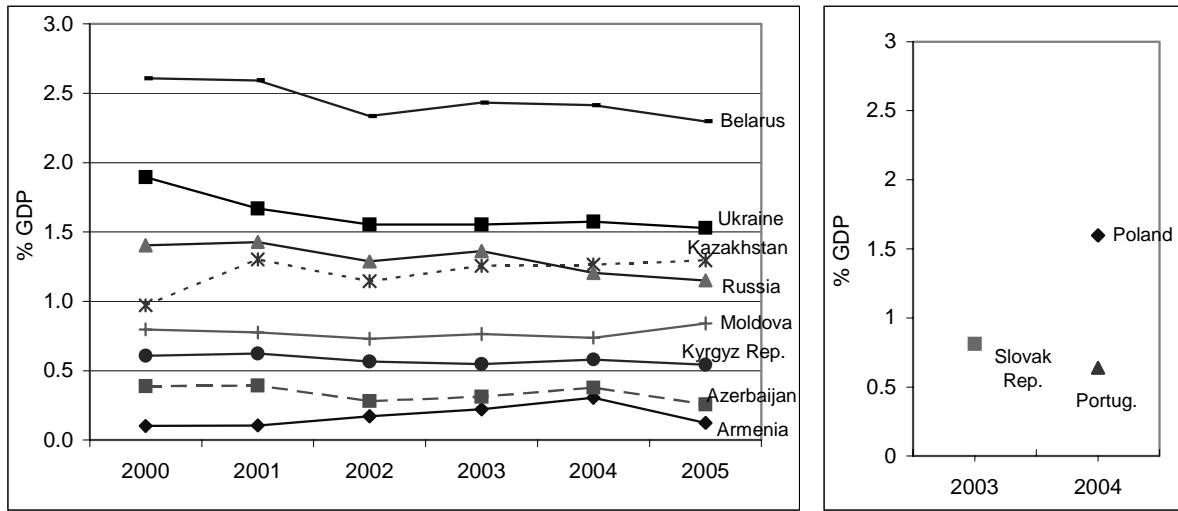
A majority of EECCA countries allocate between 0.5 and 1.5% of their GDP to environmental protection. This compares with CEE countries: the Slovak Republic and Poland spend 0.8% and 1.6% of their respective GDP on environment protection. Now, due to the relative size of the economies, the amount of expenditure in absolute terms is much lower, and insufficient to cope with the dire environmental agenda.

Three countries depart from this average level. Armenia and Azerbaijan underperform this group (0.2% and 0.4% respectively) and Belarus (2.4%) is well above OECD standards.

Countries have experienced contrasting trends in the ratio of environmental expenditure/GDP:

- Kazakhstan is the only country where has increased over the period;
- The ratio has decreased in Belarus, the Russian Federation, and Ukraine. This shows that environment protection has not fully benefited from the solid economic growth in these countries;
- In the four smaller economies, the ratio has remained very low and stable; Armenia has shown an upward trend which is contradicted by the performance in 2005.

Figure 2. Environmental protection expenditure as a share of GDP, 2000-05



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics, OECD.

Environmental protection expenditure per capita

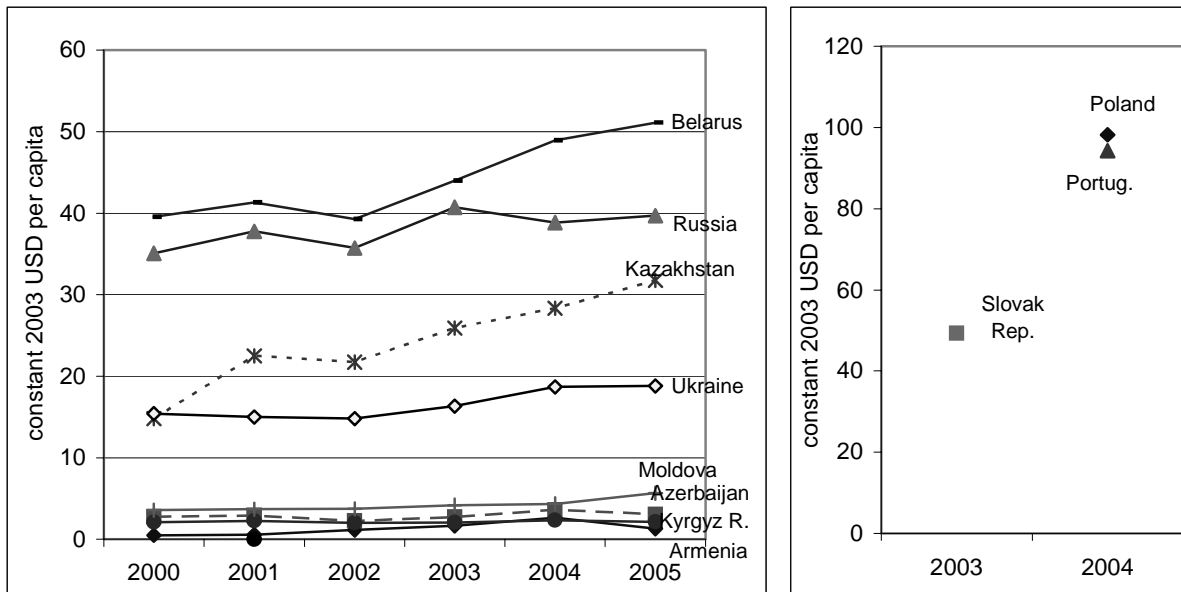
Figure 3 sheds some more light on the effort made by EECCA countries to protect the environment.

With the exception of Belarus, EECCA countries spend less than 40 USD (in constant 2003 USD) per person and per year for environment protection. This is low in absolute terms; this is low in relative terms as well: it is lower than the amount spent to protect the environment in the Slovak Republic (about 50 USD), and about half what was spent in Poland in 2004 (about 100 USD). In purchasing power parity (PPP) terms, only Kazakhstan, the Russian Federation and Belarus spend more than 50 USD per person and per year.

Despite the low level of environmental expenditure per capita, this figure has increased over the period in Belarus, Kazakhstan, and Ukraine (although to a lesser extent).

In four countries (Moldova, Azerbaijan, the Kyrgyz Republic, and Armenia), the level of environmental protection expenditure per capita is below 5 USD per year, and remains stable. This indicates that the ability of governments and households to pay for environmental infrastructures and services is very limited.

Figure 3. Environmental protection expenditure per capita, 2000-05, constant 2003 USD,



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics, OECD.

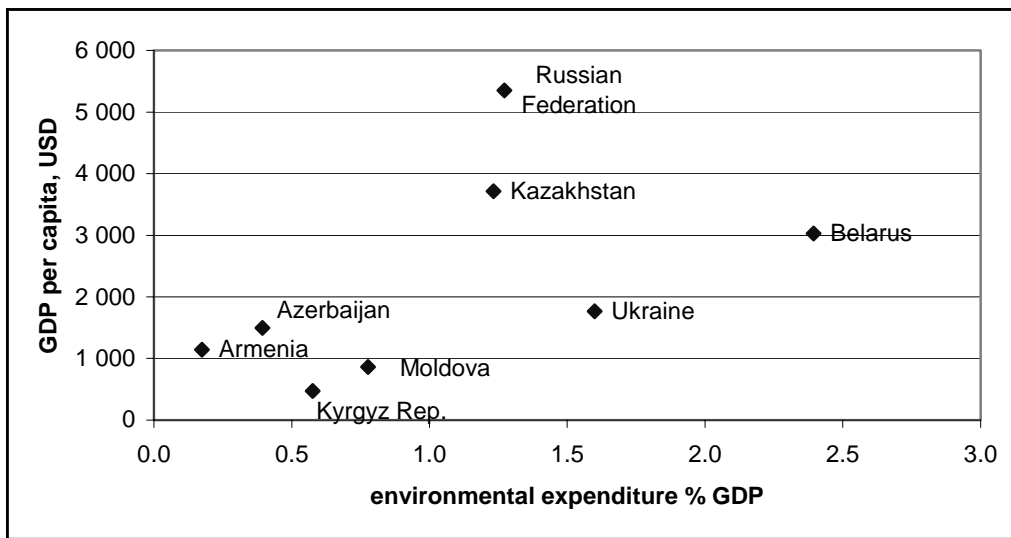
Figure 4 shows that the larger economies (in terms of GDP per capita) allocate a larger share of their GDP to environmental protection.

The figure shows two groups of countries.

1. In the upper right corner, the three biggest economies show the highest levels of spending;
2. In the lower-left corner, the four smallest economies in the region (in terms of GDP per capita) show very low level of environmental expenditure per capita.

The data for Belarus raise questions that would benefit from further analyses: Belarus and Kazakhstan have comparable GDP per capita, but Belarus spends twice as much on the environment per person. This could result from a statistical overestimation, or from policies which ensure higher level of financing for municipal environmental services, compared to many other EECCA countries, to maintain the services at their Soviet era standard.

Figure 4. Environmental protection expenditure per GDP and GDP per capita, 2005



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics.

Environmental protection expenditure by domain

The distribution of environmental expenditure by domain (see Figures 5 and 6) indicates that wastewater represents the lion's share of environmental expenditure in EECCA countries. It is the largest item of expenditure in all EECCA countries, except Kazakhstan. However, the picture is blurred because the split between wastewater and water supply is not always clear cut and in some countries, the data reported under wastewater also includes water supply.

The share of wastewater is particularly high in countries with a low level of expenditure in general. This suggests that this domain is the first one countries address; countries tend to address the others when they are able to allocate more resources to environment protection.

Air is the second largest domain receiving expenditure in the region, the first in industrialised Kazakhstan. Together, wastewater and air represent between 50 and 87% of total environmental expenditure.

The share of other domains varies widely from one country to another, showing clear differences in priorities:

- Biodiversity and landscape is significant in Moldova, Azerbaijan, and the Kyrgyz Republic; in these countries, more money is spent on biodiversity and landscape than on air;
- Kazakhstan, Ukraine, the Kyrgyz Republic devote more than 10% of their environmental expenditure to waste; as far as industrial waste is concerned, this is consistent with the high share of mineral resource-intensive industries (generating a lot of waste) in the industrial output of these countries;

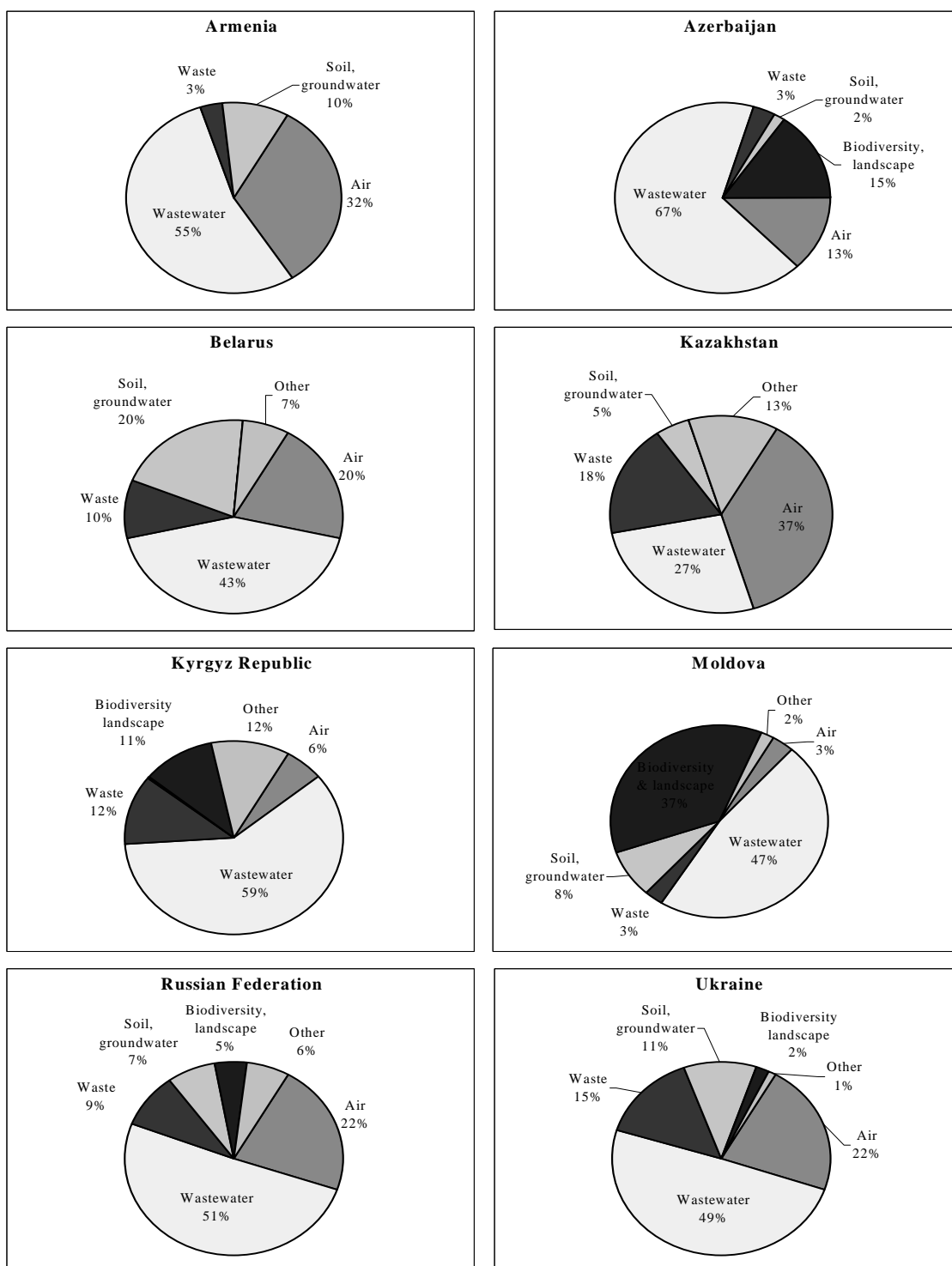
- Soil and groundwater account for a significant part of environmental expenditure in Belarus and Ukraine (countries exposed to the consequences of Chernobyl nuclear accident).

Some countries have a focused approach, with environmental expenditure allocated to two domains mainly. This is the case of Armenia (wastewater, air), Moldova (wastewater, biodiversity and landscape), the Russian Federation (wastewater, air).

Others have a more balanced profile, with three domains retaining more than 15% (each) of the overall environmental expenditure: Kazakhstan and Ukraine (air, wastewater, waste), Belarus (wastewater, air, soil and groundwater). This profile resembles the one of CEE countries; for instance, in Poland, wastewater receives less than 50% of environmental protection expenditure, and waste and air receive 27% and 14% respectively; in the Slovak Republic, the split by domain is even more balanced, as wastewater represents 22% only of total expenditure, less than air (40%), but slightly more than waste (17%).

In Azerbaijan and in the Kyrgyz Republic, the overwhelming share of expenditure devoted to wastewater leaves very little space for other domains.

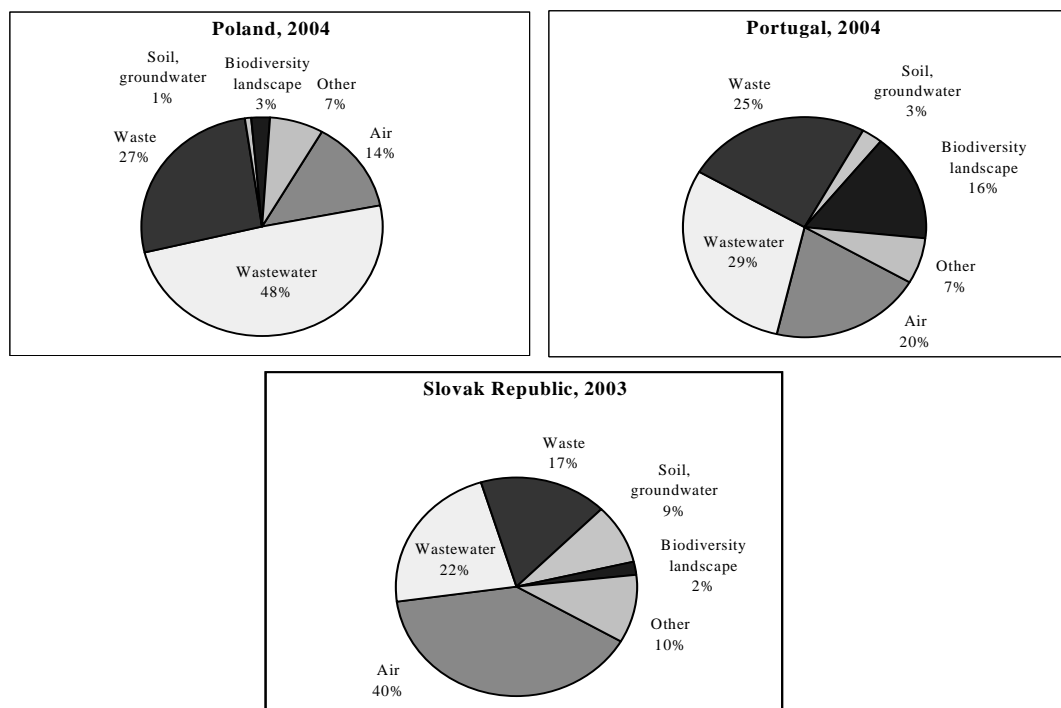
Figure 5. Environmental protection expenditure by country and by domain, percentage share, 2000-05



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics.

Figure 6. Environmental protection expenditure by domain in selected OECD countries, percentage share



Source: OECD.

Trends in environmental investment

Environmental protection expenditure by type of expenditure

In Figures 7 and 8, environmental protection expenditure is split between investment and current expenditure, on a country basis.

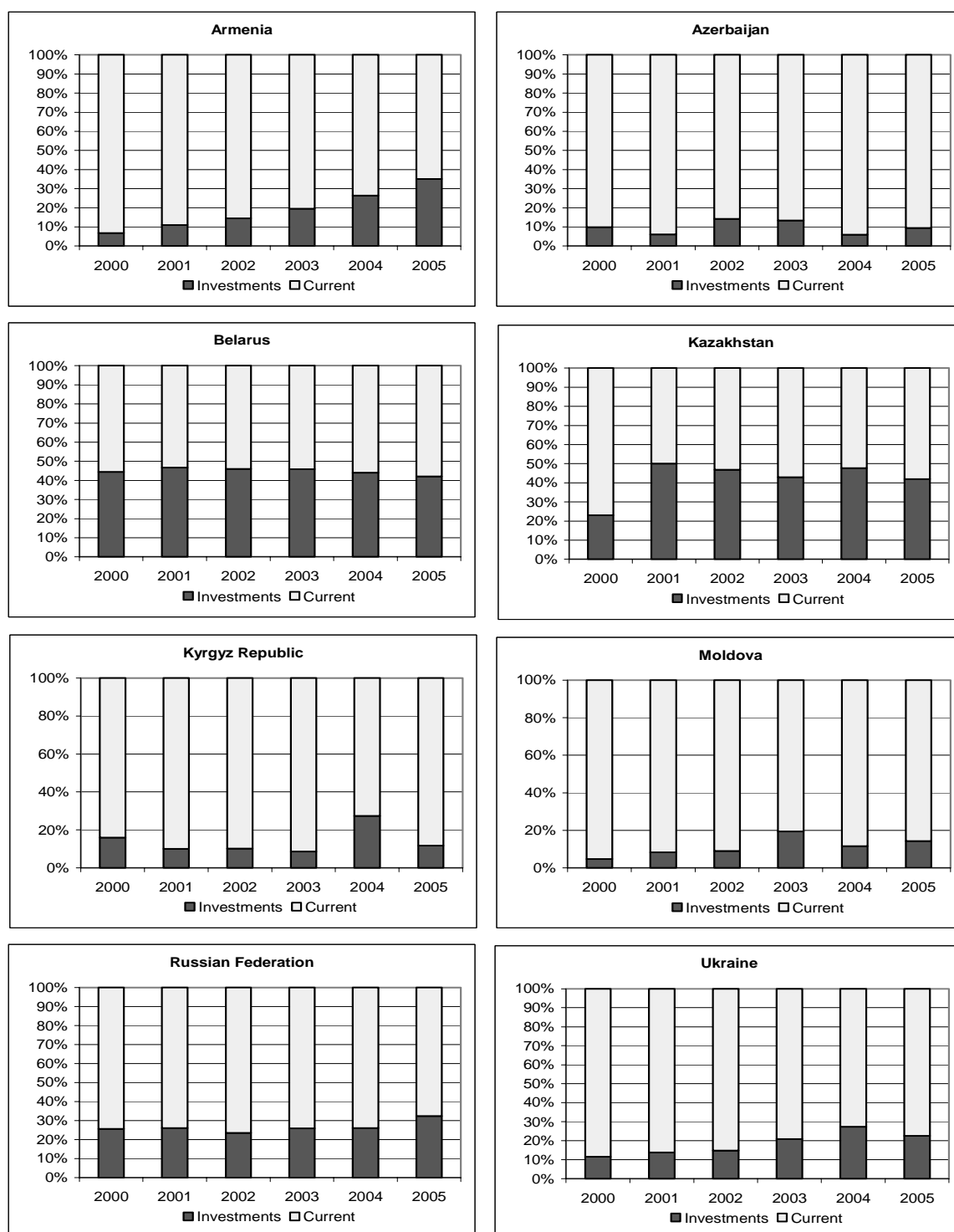
Only two countries were able to allocate more than 40% of total environmental expenditure to investments, a level which compares with Poland and the Slovak Republic. These are Belarus, where the split is stable over the years, and Kazakhstan, where the performance has jumped from 23% in 2000 to 50% in 2001, and has remained above 42% since then. The performance of these two countries is remarkable, they have benefited from neither the incentive nor the financial support of EU accession.

In the Russian Federation and Ukraine, the share of investment is lower (around 30%). The performance of the Russian Federation has been improving since 2002 and investments made 32% of total environmental expenditure in 2005.

In Armenia, the share of investments has risen steadily over the period, from a very low level (6% in 2000) and has reached 35% in 2005.

In three countries (Azerbaijan, the Kyrgyz Republic, and Moldova) the share of investment is below 15% and shows no firm trend.

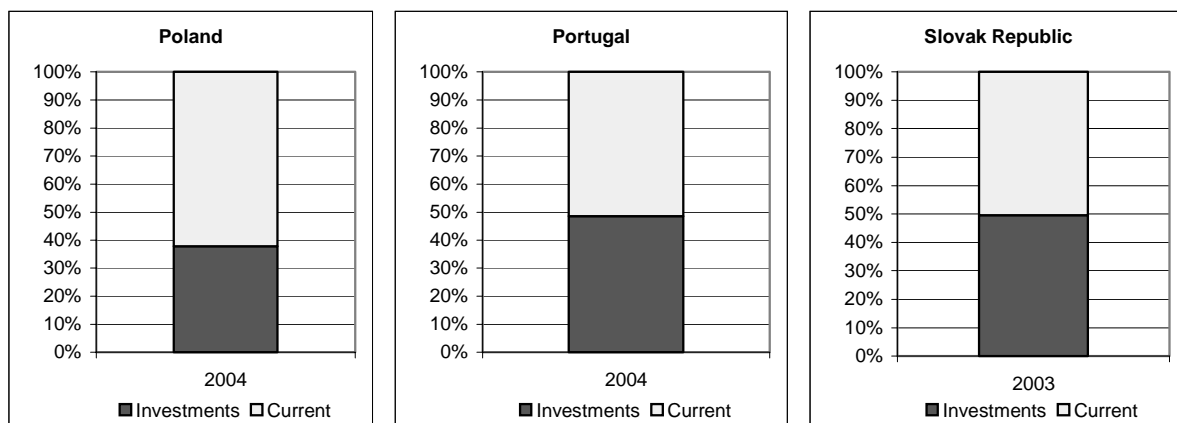
Figure 7. Share of current and investment expenditure in total environmental protection expenditure, 2000-05



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics.

Figure 8. Share of current and investment expenditure in total environmental protection expenditure



Source: OECD.

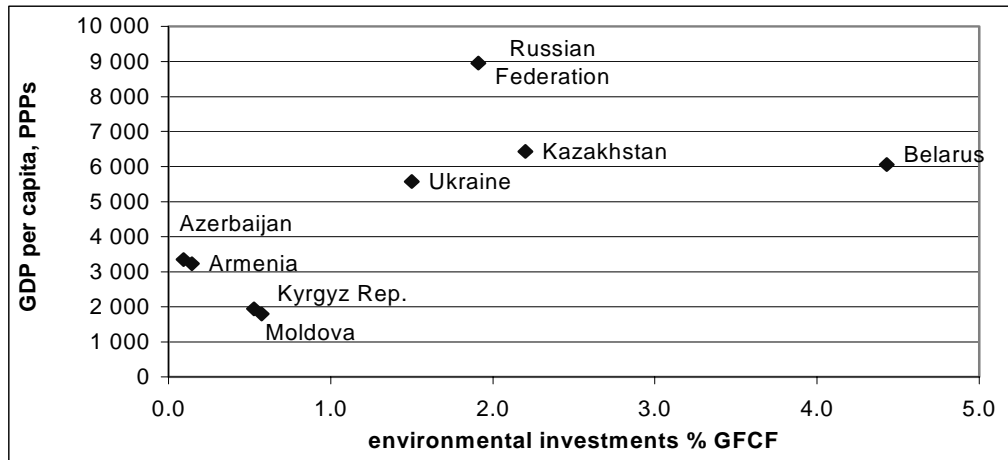
Environmental investment as a share of domestic investments

In this domain, Belarus is a notable outlier: the data reported here indicates that environmental protection represents more than 4% of domestic investment (on average over the 2000-05 period). This figure can be compared with the ratio of Germany, which is slightly above 2%.

Apart from Belarus, three countries allocate some 2% of their GFCF to the environment: Kazakhstan, the Russian Federation, and Ukraine; Kazakhstan and Ukraine have significantly improved their performance over the period, as the share of environment in domestic investment has almost doubled since 2000. However, in Kazakhstan, no progress has been made since 2002. In Russia, the share of environment protection in domestic investment has remained stable over the period.

Environmental investment, as a share of domestic investment, remains marginal and well below 1% in the other EECCA countries, where the ratio is below 0.6% on average over 2000-05. Again, this split reflects the ability to pay for the environment in the economies.

Figure 9. Environmental protection investments as share of Gross Fixed Capital Formation and GDP per capita, average 2000-2005



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

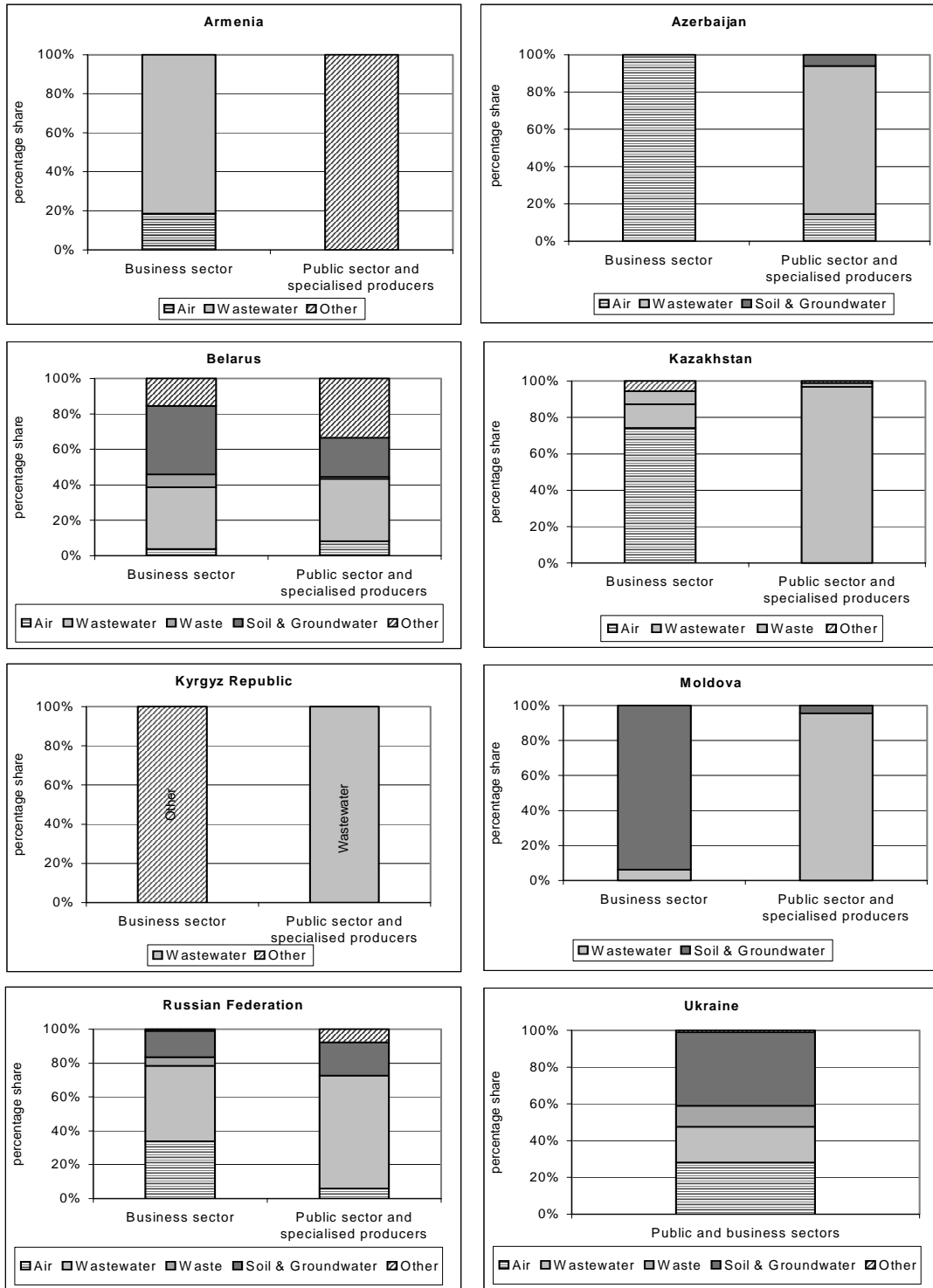
Source: National statistics.

Environmental investment by domain

Figure 10 compares, for each country, the profile of public investment and private investment by environmental domain. It indicates that the public and the private sector do not put their money in the same domain: the public sector allocates most of its investments to wastewater, whereas the private sector invests mainly on air.

In Kazakhstan and particularly in the Russian Federation, the business sector has a more balanced approach. Moldova is an exception which is difficult to analyse (private money may be allocated for water wells and irrigation facilities, as Moldova is predominantly an agricultural country). Belarus is the only country where the allocation of investments by domain is similar in both sectors.

Figure 10. Environmental protection investments, by domain and by sector, per country, 2005



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics.

This sheds additional light on the issue of investment. In some countries, it is possible to split environmental investments data between end-of-pipe investment and process-integrated investments. The former refers to equipment installed to abate the pollution which is produced; the latter to investment in cleaner technologies to avoid pollution.

These data show that process-integrated investment remains marginal. Only Ukraine and Azerbaijan have reported a significant part of such investments, in wastewater and air respectively; prospects for process-integrated investment in the air domain are particularly high in Ukraine, as incentives are strong to improve the energy-efficiency of this economy, the worst in the region. In Kazakhstan, the country which invests most in the air domain, investment is almost exclusively in end-of-pipe equipment; there is room for a move towards more process-integrated technologies, as all the investment in this domain is borne by the business sector. Table 4 tries to capture this information.

Table 4. Types of investment, by domain, by country

	Armenia	Azerbaijan	Kazakhstan	Kyrgyz Republic	Ukraine
<i>Priority 1</i>	<i>air</i>	<i>wastewater</i>	<i>air</i>	<i>wastewater</i>	<i>wastewater</i>
Type of investment	end of pipe	end of pipe	end of pipe	end of pipe	some process integrated
<i>Priority 2</i>		<i>air</i>			
Type of investment		some process integrated			

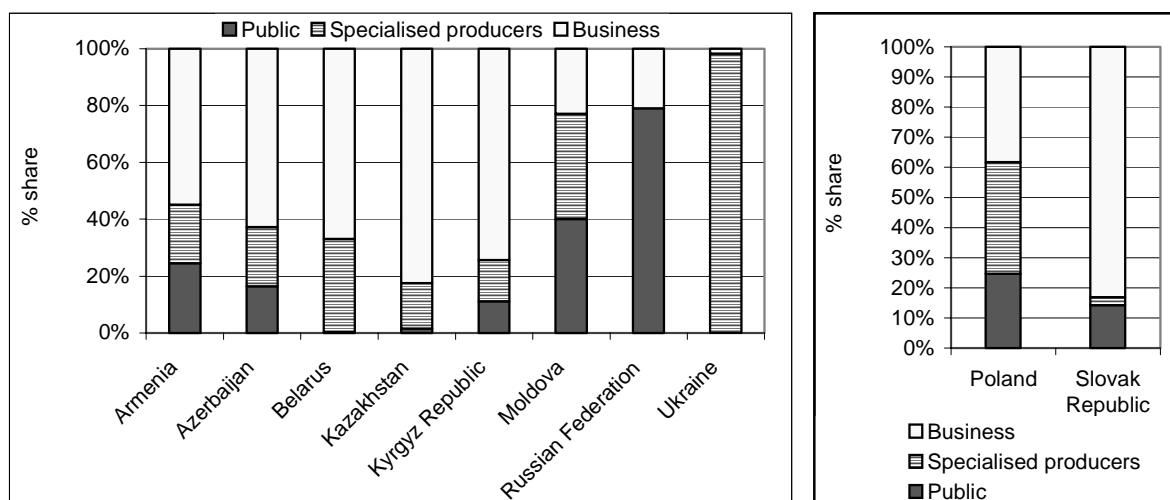
Who pays for what: environmental protection expenditure by sector

In Figure 11, three sectors are identified: the public sector (the central state), the specialised producers of environmental services (be they public or private), and the private sector. Data shows which sector spends the money devoted to environment protection (it does not take into account where the money comes from). International comparisons are particularly difficult in this area, because countries do not monitor and report on the three sectors in a consistent way.

In each country, the share of each sector remains stable over the 2000-05 period, or indicates no firm trend; so it has been possible to aggregate data over the period.

The data sent by countries show contrasting profiles. In Belarus and in Kazakhstan, the public sector does not spend money directly into the environment: expenditures are made by the specialised producers and the business sector only. In Russia, the public sector accounts for 80% of environmental protection expenditure; this is so because expenditure made by specialised service producers (which include a number of municipal utilities) have been reported with those of the public sector.

Figure 11. Environmental protection expenditure by economic sector, average 2000-05



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics.

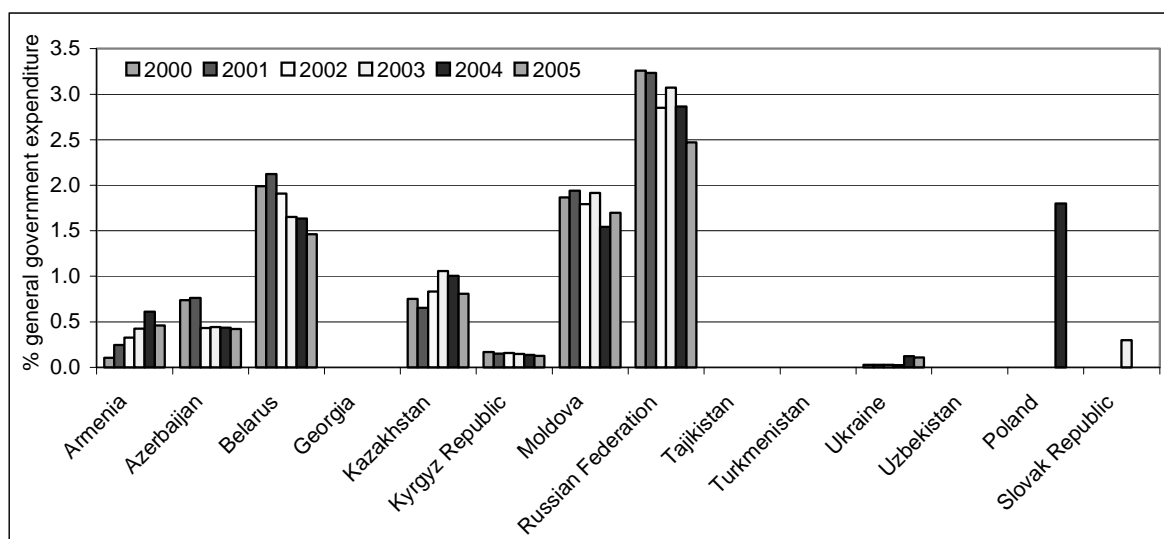
Figure 11 indicates that, with the exception of Russia and, to some degree, Moldova, the public sector is not the major spender in environmental protection. This illustrates contrasting situations. In some countries (e.g. the Kyrgyz Republic), government spending is so low that it can only represent a marginal share of total environmental protection expenditure. In other countries (e.g. Kazakhstan), business firms now spend significant amounts of money to protect the environment.

Environmental protection expenditure in the public sector

Figure 12 measures the share of government expenditure devoted to environmental protection. Data are only available for central governments.

Again, the figure shows contrasting situations among EECCA countries. The ratio is next to zero in Ukraine and in the Kyrgyz Republic. It is around 0.5% in Armenia, Azerbaijan, and Kazakhstan. It reaches 1.5% in Belarus and in Moldova (similar to Poland). In the Russian Federation, the ratio was 2.5% in 2005.

Figure 12. Environmental protection expenditure in the public sector as a share of general government expenditure, 2000-05

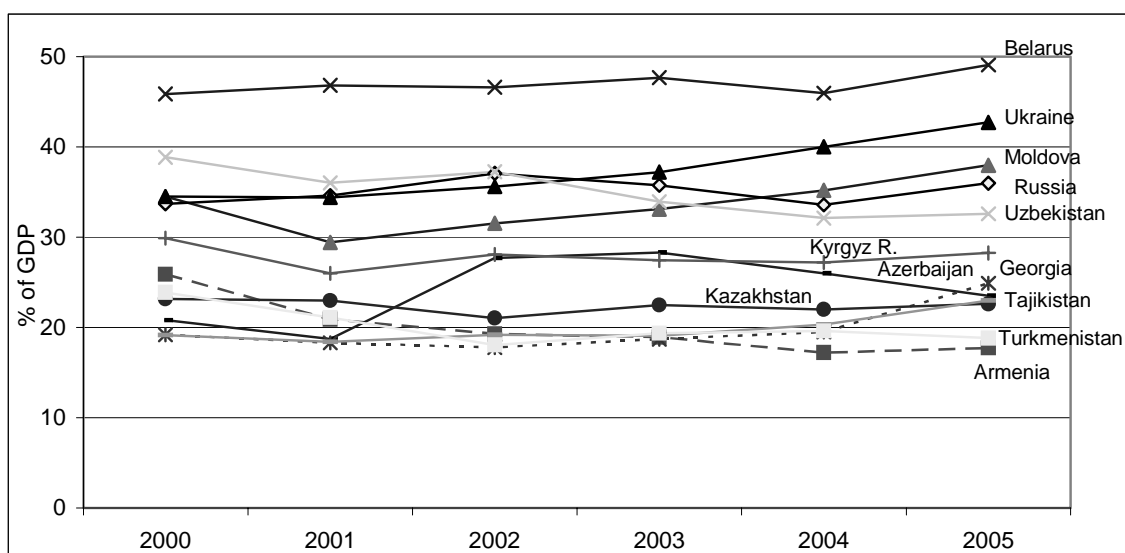


Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics.

The share of environment in public expenditure decreases in the three countries where it is highest. In Belarus and Moldova, this has occurred while the share of public spending in GDP was rising (see Figure 13).

Figure 13. Trends in general government expenditure as a share of GDP, 2000-05



Source: EBRD, Transition Report 2006.

The financier principle

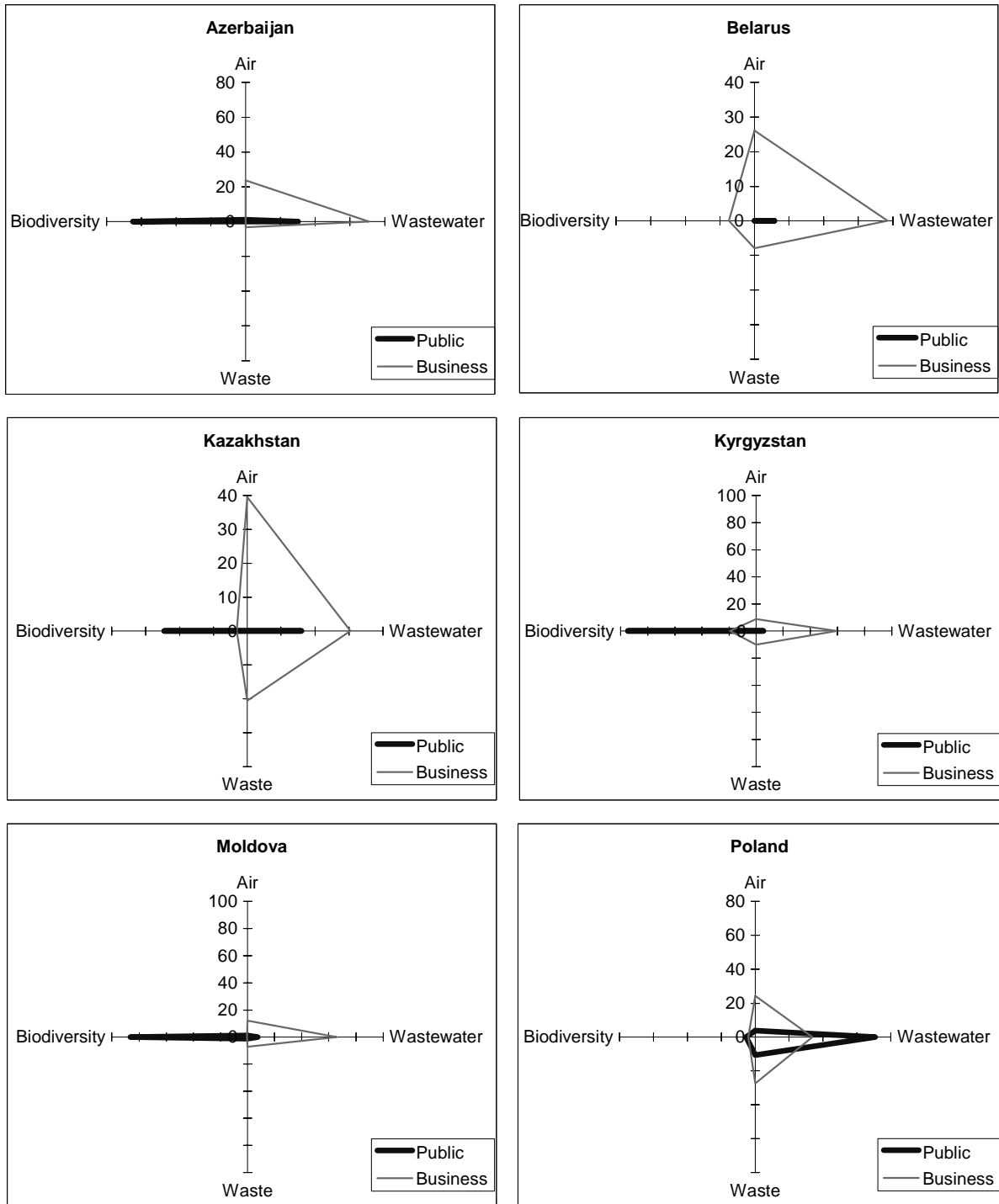
A different approach to analysing environmental expenditure is given by the financier principle, where the measure focuses, not on who spends the money, but on who pays for it in the end. This approach takes into account transfers between sectors and avoids double counting. This approach has been difficult to implement. Only five countries have provided data.

The data indicate that each country has a very specific pattern of environmental finance. Figure 14 shows where each sector puts its own money. For instance, the public sector does not appear in the chart on Belarus, as the government receives more money from the business sector and from specialised producers of environmental services than it actually spends. Similarly, in Kazakhstan, the public sector receives more money on waste than it spends on this domain.

The charts also show the relative contribution of the public and the private sectors to each domain. In the few countries which reported on this indicator, the public sector is the major financier for biodiversity protection; Belarus is an exception, where business firms contribute to that domain.

The picture for other environmental domains is blurred by the fact that data for public expenditure based on the financier approach is not always split by domain. According to the data reported, the private sector is the main (and in a number of cases, the sole) financier for air protection and, to a lesser extent, for waste. The private sector is the major financier for wastewater, although the public sector contributes as well.

Figure 14. Total environmental expenditure by domain and by financier, 2000-05, million 2003 USD



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics

In Azerbaijan, the reported data show only marginal transfers between sectors. Waste is an exception: one third of the expenditure of the business sector for waste in 2005 was transferred, either to the government or to specialised service producers

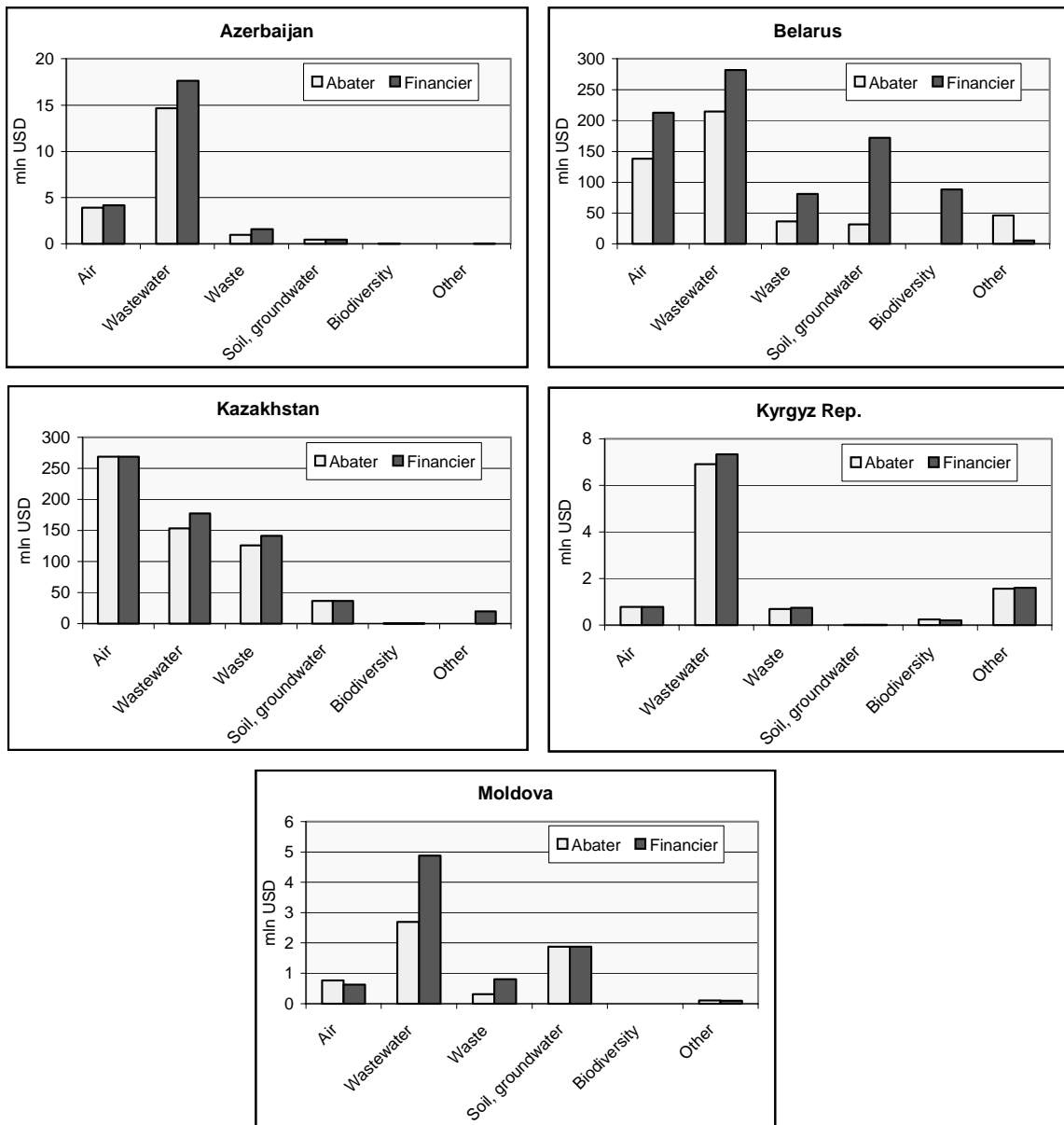
Belarus has a more complex profile. The data collected show that, over the period 2000-05, 40% of the total amount spend by the private sector have been transferred paid to service producers or to the public sector. The situation by domain is contrasted: for air and biodiversity, all transfers went to the public sector; for waste water and soil and ground water, most of these transfers went to the specialised producers (usually public entities); for waste, the public sector received one third of the transfers. The public sector is a net financier in the wastewater sector only. In all other domains, the public sector receives more money (from specialised producers and from the business sector) than it spends.

In Kazakhstan, all expenditure from the private sector for air is financed by the firms' own resources. There are significant transfers from the public sector for wastewater, soil and groundwater, and biodiversity; according to the reported data, these transfers are mainly received by public specialised service producers. For waste, net transfers go from the private sector to the public sector; in 2005, payments to the government represented some 10% of the total expenditure spent on waste by private firms.

In Kyrgyzstan, the public sector only puts some money in biodiversity, where it covers the costs associated with the operation of national parks and reserves; in 2005, two thirds of the resources allocated to that domain were transferred to other sector; however, the reported data does not allow tracing the beneficiaries of these transfers. There are (marginal) transfers from the private to the public sector only in the wastewater and waste domains (some 6% of the total expenditure of the private sector in each domain).

In Moldova, the bulk of public expenditure is in the domain of biodiversity, where there are no transfers to other sectors. Transfers from the private sector are significant for wastewater only.

Figure 15. Environmental expenditure in the business sector by domain, abater and financing principle, 2005, million USD



Notes: Preliminary data. Comparisons amongst countries should be undertaken with care as definitions and sector coverage vary across countries.

Source: National statistics

TRENDS IN INTERNATIONAL ENVIRONMENTAL ASSISTANCE

This section presents trends in international environmental assistance to EECCA countries over the period 2001-05. Environmental assistance data have been compiled from databases at the OECD and supplementary data collected from donor countries. IFI data have been collected directly from those institutions and are based on their own definitions of environmental assistance that do not always match categories used in reporting bilateral assistance. The project team has tried to reconcile OECD sources and data collected from donors and IFIs so that the data set is as consistent as possible, in particular in terms of scope.

Environmental protection expenditure (previous chapter) do not refer to the same environmental activities covered by environmentally related assistance (this chapter), making comparisons unreliable. Generally, the latter is a broader definition than the former.

In addition to direct environmental international assistance and environmental lending, some environmental expenditure is made indirectly by integrating environmental elements into investment projects having non-environmental purposes (e.g. more energy-efficient processes). In domestic expenditure these flows are categorised as “integrated processes” and in IFI lending as “mainstreaming of environment”. International sources usually do not record these expenditures as “environmental”. Over the last couple of years, the focus on these types of environmental improvements and expenditures has increased. For EECCA, the World Bank and the European Bank for Reconstruction (EBRD) have tried to report not only financing for environmental projects but also environmental financing from non-environmental projects. The World Bank has identified the environmental component of non-environmental projects and it is included in the dataset, whereas the other IFIs have not done so; the data reported in the dataset overestimates environmental assistance to non-environmental projects by the IFIs. Similarly, indirect environmental assistance for bilateral donors is not accounted for.

Other issues, such as export credits, international commercial lending, international leasing and trade are not covered even though they have both positive and negative effects on environment.

Review of trends in international environmental assistance

International environmental assistance

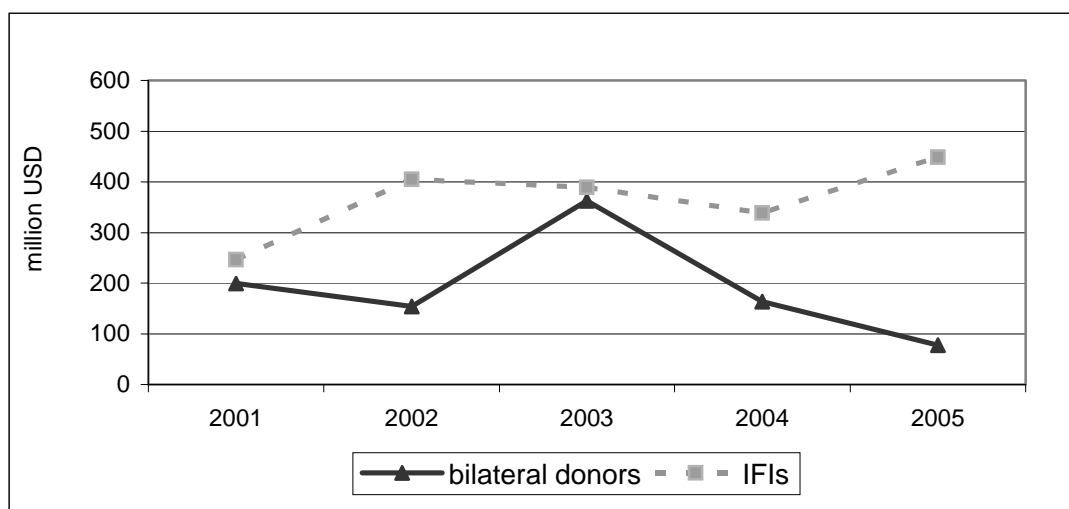
Bilateral environmental assistance to EECCA countries has cumulated to 958 million USD since 2001. Multilateral assistance has reached 1,829 million USD over the same period. It should be noted that each flow is of a different nature: multilateral assistance is made of loans, while bilateral assistance essentially consists in grants; Japan is an exception, as two big loans were awarded to Kazakhstan in 2003 for projects in the water supply and sanitation sector; the grant component of the Japanese assistance reported in the DAC database is 69%.

The period has witnessed a significant change in the structure of environmental assistance to EECCA.

Over the period, multilateral assistance, as it is channelled by IFIs, has multiplied by 1.8. This trend is far from constant: assistance increased from 2001 to 2002; this results from the rapid recovery from the financial crisis in 1998, which had negatively impacted environmental lending from IFIs. IFIs' commitments decreased in 2002-04 and then increased to 2005. EBRD, the World Bank and ADB are the major suppliers of IFI loans in the region. Their respective share is difficult to assess, as the data which were reported use different definitions of "environment". Changes in commitments from each institution over the years are difficult to analyse.

Bilateral assistance in 2005 is below the levels of 2001⁸. There has been a constant and rapid downsizing over the period. 2003 was an exception; this is in part due to data on Japanese assistance being reported for the first time, and to a remarkable increase of assistance by the European Commission that year. The overall downward trend indicates *donor fatigue*, which was expressed by EECCA ministers of Economy/Finance, the Environment and Water and their OECD partners, at the conference held under the auspices of the EAP Task Force in Yerevan (Armenia) in November 2005.

Figure 16. Environmental assistance to the EECCA countries, 2001-05, million USD



Source: OECD, CRS Aid activities database, donors and IFIs reporting.

Fewer than 20 countries have contributed to bilateral environmental assistance in EECCA since 2001. Japan, the European Commission and the United States are the three major bilateral donors in the region over the period: together they account for 56% of bilateral environmental assistance.

Some players which had played a major role in the early stages of the transition have scaled their effort back (US, UK, Denmark, Sweden, Spain), others have emerged or have significantly increased their contribution (Japan, the EC, Switzerland, Germany, Finland); France has been an important contributor, albeit with very uneven commitments over the period.

Despite the significant effort by the donor community, it is noteworthy that the share of environmental assistance in total bilateral assistance to the region has fallen by half between 2001 and 2005.

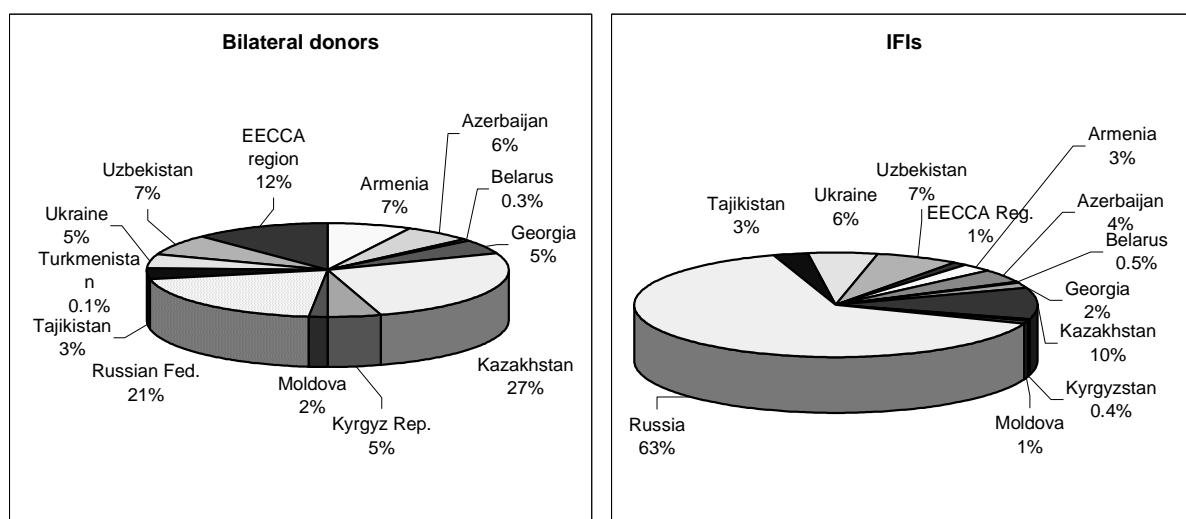
⁸ It should be noted that 2005 is a preliminary figure, as not all countries have reported their contribution at the time the data were analysed.

Recipients of international environmental assistance

The respective contributions of bilateral donors and IFIs do not benefit the same countries in the same way. The major recipients of bilateral environmental assistance are Kazakhstan (251 million USD since 2001) and the Russian Federation (195 million USD), which together received almost 50% of the total flows, over the period 2001-05. Armenia comes third, before Uzbekistan, Azerbaijan, Ukraine, Georgia and the Kyrgyz Republic (these countries received between 40 and 70 million USD over the period 2001-05). At the other end of the spectrum, Belarus and Turkmenistan hardly benefit from any bilateral assistance.

Multilateral environmental assistance is split differently: Russia received 1.2 billion USD over the period, 63% of total flows. Oil and gas producing economies follow (namely Kazakhstan, Uzbekistan, Azerbaijan, which received respectively 177, 119, 71 million USD), together with Ukraine (105 million USD) which became a major recipient in 2004. IFIs devote less resource than bilateral donors to regional, EECCA wide projects.

Figure 17. Donors' and IFIs' environmental assistance to EECCA countries, total 2001-05



Source: OECD, CRS Aid activities database, donors and IFIs reporting.

International environmental assistance as a share of GDP

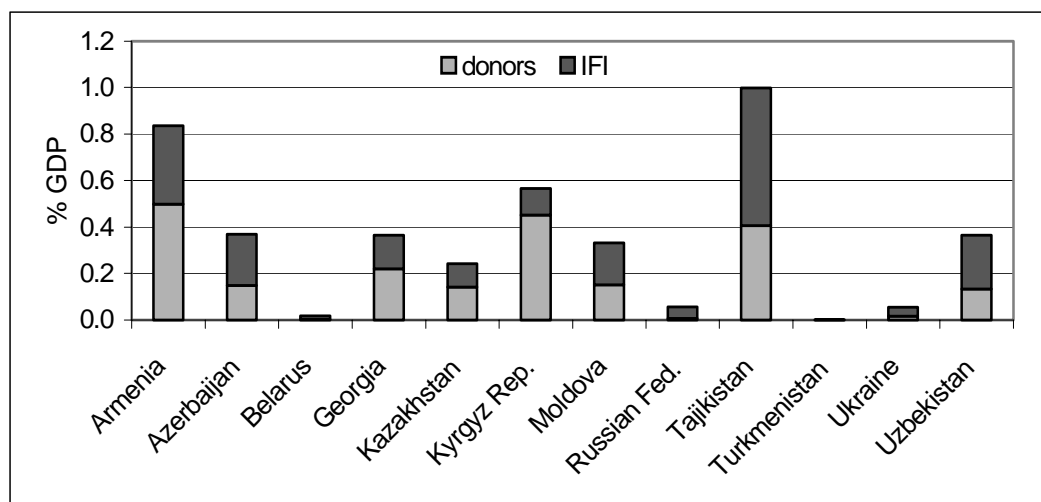
The relative weight of external environmental assistance in each EECCA country varies considerably. In Armenia, environmental assistance accounts to 0.8% of GDP on average, receiving significant sums from both bilateral and multilateral sources. This is not restricted to environmental assistance, as the EBRD estimates that dependence of Armenia on bilateral grant flows and soft finance from donors and IFIs represent a risk in the medium term (EBRD, 2007).

In the Kyrgyz Republic, environmental assistance amounts to 0.6% of GDP. However, most of this is from donors because of constraints on IFI loans due to the very high level of indebtedness of the country.

The performance of Tajikistan is distorted by a relatively small GDP and a significant project on renewable energy production, financed by Switzerland in 2004.

For other countries, environmental assistance represents less than 0.4% of GDP. In Russia, this ratio is negligible due to the size of the GDP.

Figure 18. Bilateral donors and IFIs environmental assistance to EECCA countries, percentage of GDP, average over the period 2001-05



Source: OECD, CRS Aid activities database, donors and IFIs reporting.

It is noteworthy that bilateral environmental assistance represents less than 4 USD per capita and per year, and multilateral environmental assistance is below 3 USD.

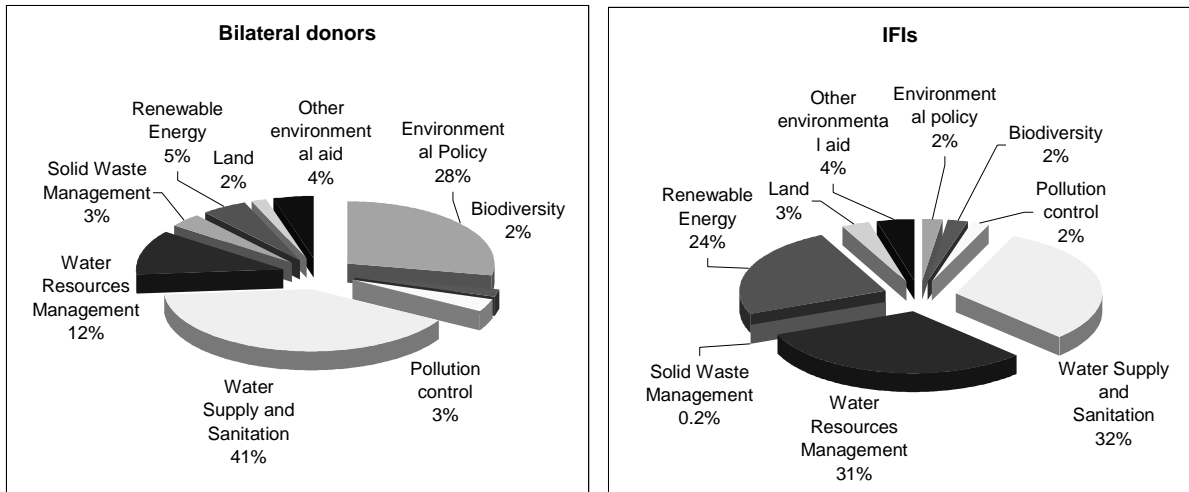
International environmental assistance by domain

The breakdown of environmental assistance by domain shows contrasted profiles between bilateral donors and IFIs.

IFIs support is focused in three domains: water supply and sanitation, water resource management, and renewable energy; these three domains together have received 87% of total support over the period. Two of these domains are not included in the definition of environmental protection expenditure, which confirms that the two series cannot be compared. Support to environmental policy (which includes capacity building) accounts for 2% of the total.

Bilateral donors devote 41% of their assistance to water supply and sanitation. A significant part (28%) supports environmental policy development in EECCA countries, and 12% water resource management.

Figure 19. Donors' and multilateral environmental assistance by domain, total 2001-05



Source: OECD, CRS Aid activities database, donors and IFIs reporting.

ANNEXES

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Annex 1. Environmental Protection Expenditure: Methodological Framework

This annex presents the key methodological aspects of the OECD/Eurostat framework for the collection of environmental protection expenditure and attempts to evaluate prospects for its application in EECCA countries.

Environmental expenditure information systems in EECCA countries are a legacy of the period of central planning. Two main characteristics of these systems differentiate environmental expenditure data collection from that of developed market economies. The enterprises' statistical reporting tradition is detailed, and reporting of enterprises in a given group is widespread (e.g. all domestically owned enterprises, or all industrial enterprises). However, the reliability of these data is traditionally weak. In addition, public expenditure data are still not reported regularly in detail. In developed market economies public expenditure data are more available, while enterprises' data are collected via sample surveys.

The implications of the above differences in environmental expenditure estimates imply difficulty estimating public sector expenditure in EECCA countries, particularly government expenditures and commitments to the private sector. At the same time there might be an overflow of inconsistent company data. In some cases, in identifying financing sources, EECCA data collection provides more detailed information than needed for the OECD framework. In practice, however, the quality of the collected data might undermine its usefulness.

The possibilities for adjusting collected EECCA environmental expenditure data to fit into the OECD framework are described along the following dimensions:

- Definition and scope of environmental expenditures;
- Type of expenditure;
- Two sides of environmental expenditure: financing vs. abater principle;
- Definition of economic sectors;

Definition and scope of environmental protection expenditure

- In the OECD framework, environmental protection is defined as including “all purposeful activities directly aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment resulting from the production process or from the use of goods and services.” The scope of Environmental Protection is defined according to the Classification of Environmental Protection Activities (CEPA), which distinguishes nine environmental domains

1. Protection of ambient air and climate

Prevention of pollution through in-process modifications for the protection of ambient air, and of climate and ozone layer.

Treatment of exhaust gases and ventilation air for the protection of ambient air, and for the protection of climate and ozone layer.

Measurement, control, laboratories and the like and other activities.

2. Wastewater management (includes prevention of emission to surface water)

Prevention of pollution through in-process modifications

Sewerage networks

Waste water treatment

<p>Treatment of cooling water Measurement, control laboratories and the like and other activities.</p> <p><u>3. Waste management (includes treatment of low-level radioactive waste, composting, street cleaning and sweeping, recycling)</u> Prevention of pollution through in-process modifications Collection and transport Treatment & disposal of hazardous waste: thermal treatment, landfill, other Treatment & disposal of non-hazardous waste: incineration, landfill, other Measurement, control, laboratories and the like and other activities</p> <p><u>4. Protection and remediation of soil, groundwater and surface water (includes all cleaning-up activities)</u> Prevention of pollutant infiltration Cleaning up of soil and water bodies Protection of soil from erosion and other physical degradation Prevention and remediation of soil salinity Measurement, control, laboratories and the like and other activities</p> <p><u>5. Noise and vibration abatement (excluding workplace protection)</u> Preventive in-process modifications at the source from: road & rail traffic, air traffic, industrial & other noise Construction of anti noise/vibration facilities for road & rail traffic, air traffic, industrial & other noise Measurement, control, laboratories and the like and other activities</p> <p><u>6. Protection of biodiversity and landscape</u> Protection and rehabilitation of species and habitats Protection of natural and semi-natural landscapes Measurement, control, laboratories and the like and other activities</p> <p><u>7. Protection against radiation (excluding external safety)</u> Protection of ambient media Transport and treatment of high level radioactive waste Measurement, control, laboratories and the like and other activities</p> <p><u>8. Research and Development</u> Includes all research and development with an environmental protection objective both in the public and business sector.</p> <p><u>9. Other environmental protection activities</u> General environmental administration and management including: general administration, regulation and the like, environmental management Education, training and information Activities leading to indivisible expenditure and activities not elsewhere classified</p>

For EECCA there is no unified definition similar to that of the OECD framework. From the list of activities on which enterprises need to report in the environmental expenditure reporting form (18KS, 4OS), it is clear that environmental expenditure is interpreted in broader sense in the EECCA methodology. It includes some countries elements of water management and other natural resource management expenditures.

Type of expenditure:

- **Total Investment Expenditure** includes end-of-pipe investments (treating pollution already generated) and investments in integrated technologies (modifications of production process that reduce the amount of pollution generated).
- **Total Current Expenditure** is the sum of internal current expenditure and fees/purchases for environmental protection services. It is expenditure for execution of environmental protection activities (excluding purchase of capital goods), for example: operation of environmental equipment, measuring and monitoring, environmental management, education and administration.
- **Receipts from by-products** are the monetary value of any by-products generated by environmental protection activities. These could either be sold and generate revenues, or be used internally and lead to reductions in costs. Examples include energy generated or material recovered, as a result of waste treatment.
- **Subsidies/Transfers** include all types of transfers (capital and current) financing environmental protection activities in other sectors, including transfers to or from other countries, subsidies paid by the public sector and subsidies received by other sectors.
- **Revenues** from the sales of environmental services are monies received by public sector and specialised producers from the users (the counterpart to fees/purchases). This is mainly related to waste collection, waste treatment and sewage treatment.

Financing vs. Abater Principle

The environmental expenditure figures are distinguished in the OECD framework from two sides.

- Expenditure according to the abater principle (EXP I) includes all expenditure that a sector has for measures they themselves execute.
- The financing principle (EXP II) measures how much money a particular sector (directly) *contributes* to overall environmental protection activities, wherever they are executed. This means that the part of EXP I that was directly financed by others (through subsidies or revenues received) should be deducted, while the part of EXP I in other sectors that a sector finances directly (through subsidies or fees paid) should be added.

The questionnaire is designed to allow for evaluation of expenditure using both principles for each sector and industry. This distinction makes it possible to aggregate expenditure by different sectors and industries without double counting.

Public sector	Private sector
Investment expenditure	Investment expenditure
+ Current expenditure – Receipts from by-products of PAC activity	+ Current expenditure – Receipts from by-products of PAC activity
= Expenditure I (abater principle) + Subsidies to private sector – Fees/charges from private sector	= Expenditure I (abater principle) – Subsidies from public sector + Fees/charges to public sector
= Expenditure II (financing principle)	= Expenditure II (financing principle)

Financial commitments from the public to the private sector: the term “subsidies” as used in the OECD reporting table covers current and capital unrequited payments for environmentally related purposes. In national accounts terminology, these are subsidies for production, investment grants and other transfers. For the public sector, care must be taken to avoid double counting due to transfers between different levels of government; i.e. intergovernmental commitments should be netted out.

Financial commitments from the private sector to the public sector: fees are paid for environmentally related services, whereas taxes are compulsory, unrequited payments. Only taxes directly used for financing environmentally related expenditure by the public sector should be included.

For EECCA, environmentally related expenditure figures are compiled from the abaters reports. Therefore the abater principle is readily applied in the collected data.

Expenditure figures by the financing principle can be calculated if all abaters report on each financing source used for financing the expenditures. This is applied to a limited extent in some EECCA reporting forms. However, these reported data are unreliable partly due to misunderstanding, partly to the fact that they come close to asking for internal business information.

Definitions of economic sectors

- **Public sector** includes central, regional and local governments, authorities, communities and government agencies (mainly recorded under standardised activity classifications ISIC/NACE 75). Typical activities are regulation, control, research, education and information and other services provided to the community, mainly financed by general government budgets or funds and not directly or partly by the users of these services.
- EECCA countries still use the former classification of economic activities, so identification of the public sector can create problems. The governments (both federal and local) are outside of the classification system, and therefore the statistical system for environmental expenditure reporting. Estimating their expenditure requires analysis of government budgets and/or sample surveys. Identification of public organisations providing environmental services also requires a country specific approach in which the ownership code could be of help.
- **Specialised Producers of Environmental Services** include public and private corporations producing services mainly financed by the users of these services. These are mainly activities within ISIC/NACE 90 such as collection and treatment of sewage; collection and treatment of solid waste; and sanitation, remediation and similar activities.
- In EECCA countries where the ISIC classification system is already applied, ownership codes provide additional information for identification of public organisations providing environmentally related services. Enterprises with state ownership codes in the economic sector, ISIC 41 and 90, constitute the group of public organisations providing environmentally related services.
- **Business sector** includes all environmental protection activities in ISIC/NACE 01-99 intended for own use, excluding public sector (mainly ISIC/NACE 75) and the activities of specialised producers (mainly in ISIC/NACE 90). Total business sector is divided into five sub-categories according to ISIC/NACE classifications for (a) agriculture, hunting, fishing,

forestry; (b) mining and quarrying; (c) total manufacturing (with a more detailed industry breakdown); (d) electricity, gas and water supply; (e) other business activities.

- The definition of private sector consisting of the business and household sectors can be applied readily in EECCA. In most cases, however, households are not covered in the environmentally related expenditure tables. In those cases, private sector collapses to business sector in the OECD environmental expenditure tables
- **Household sector** environmental protection expenditure according to the abater principle should include only purchases of connected and adapted products. For example, purchase of air pollution control devices for motor vehicles, sewage treatment facilities such as septic tanks and goods used in connection with waste management. Household expenditures according to the financing principle include all payments and fees for services purchased from municipalities and public or private specialised producers of environmental protection services. These include mainly, payments for the collection and treatment of waste and for the collection and treatment of wastewater.

In EECCA, including household expenditure in estimates of environmentally related expenditures is probably premature, as these data are almost non-existent. In countries where national household expenditure surveys have been conducted it might be possible to obtain relevant expenditure data. This, however, is likely sufficient for qualitative assessment, but not for filling in OECD tables.