

Environment and Climate Change Policy Brief Eastern Europe and Caucasus Region



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Executive Summary

This environmental and climate change Policy Brief has been written as an input to the Swedish results strategy process and in preparation of a new regional strategy document for Eastern Europe. The regional results strategy is expected to cover the period 2014-2020, and relate to regional as well as bilateral cooperation with Belarus, Georgia, Moldova and Ukraine. Armenia and Azerbaijan may possibly be included in the regional development cooperation.

The *purpose* is to briefly present key environmental and climate change challenges and opportunities in the region and in relation to alignment to the European Union (EU), and assess the needs for institutional reforms. Furthermore, the brief proposes some issues for Sida to consider related to how the environmental challenges can be approached through development cooperation. The analysis was conducted as a desk study in October-November 2012 and is based on selected reports, research papers and statistics.

The *key environmental problems* in the countries included in the study are air pollution, water quality and quantity, land degradation, and loss of biodiversity and ecosystem services. The countries are vulnerable to climate change.

Many of the environmental challenges in the former Soviet republics of Eastern Europe are linked to the historic legacy of a centrally planned economy. The problems are accentuated by inefficient use of resources, including low energy- and water efficiency, deteriorating infrastructure, imperfect legislation and governance, and weak institutional capacity. The rapid transition after the dissolution of the Soviet Union in 1991 further accelerated the environmental degradation. The effects of the environmental mismanagement are grave, on ecosystems as well as on human health with potentially severe effects on the economies.

The Eastern Partnership (EaP) was launched in 2009 with the aim of enhancing the relations between the European Union and its eastern neighbours. The *EU integration process* is an important driving force to improve the environmental performance in EaP partner countries. Although each partner country has an individual relationship with EU, the overarching objectives of the bilateral dimension of the EaP are similar for all countries: (i) Political association and economic integration; (ii) Enhanced mobility of citizens in a secure and well managed environment; and (iii) Strengthened sector cooperation.

There are important aspects of environment and climate change linked to all three cooperation areas. Issues related to governance and human rights and freedoms, such as improved policy and regulatory frameworks combined with control of corruption and improved law enforcement, are important for improving environmental outcomes. All countries but Belarus show improvements in *governance* but are still weak compared to the OECD or EU standards. Key governance aspects relate to improving cross-sectoral coordination and policy coherency, enhanced accountability, including transparency and meaningful participation.

While governance aspects are key factors for improved environmental performance, it needs to be accompanied with political and economic priorities given to environmental management. The levels of environmental expenditures in the EaP countries are low compared to the averages of Central European countries at the peak of their EU-approximation efforts. The low levels of environmental spending is partly linked to the heavy reliance on external (mainly project focused) financial support for tackling the environmental problems.

Although the countries show improvements on at least some of the environmental challenges they face, especially related to environmental health, the lack of improvements in other areas is worrisome. Climate change and water resources remain great challenges to be addressed.

There has been progress in Belarus, Georgia, Moldova and Ukraine in terms of environmental policies and legislation. The key issue is the lack of implementation. The main *obstacles* to improved environmental performance include: silo-thinking, imperfect governance and weak institutional capacity, low priority given to environmental aspects including low resource allocation to environmental management.

There are plenty of *opportunities* for greening the growth in the EaP countries. Three elements of green growth enjoy long-term government priority in many EaP countries: energy efficiency, renewable energy and sustainable agriculture. Furthermore, environmental infrastructure investments, particularly water supply and sanitation but also waste management, are considered to be a crucial element of economic development. It appears that energy efficiency and environmental infrastructure are the main concerns at the local level, and there are large opportunities for improving energy efficiency, particularly related to district heating. Both related to heating and water supply, the tariff levels are below cost recovery, and there is continued need for tariff reforms.

Environmental authorities will continue to be central for *promoting the environmental agenda*, and their role and capacities need to be strengthened. However, in order to fully integrate environmental and climate change aspects into core development priorities, also other key ministries (e.g. finance, economy, planning) are playing a crucial role. Strong evidence in support to benefits of environmental protection and greening the economy will help environmental authorities to get support. In order to generate such evidence, environmental authorities may need to start utilising tools for economic and social analysis of policies and reform processes.

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1. Introduction

This environmental and climate change Policy Brief has been written as an input to the Swedish results strategy process and in preparation of a new regional strategy document for Eastern Europe¹. The regional results strategy is expected to cover the period 2014-2020, and relate to regional as well as bilateral cooperation with Belarus, Georgia, Moldova² and Ukraine. Armenia and Azerbaijan may possibly be included in the regional development cooperation.

The *purpose* of this brief is to briefly present key environmental and climate change challenges and opportunities in the region and in relation to alignment to the European Union (EU), assess the needs for institutional reforms, and provide information on regional organisations/actors. Furthermore, the brief suggests issues for Sida to consider related to how the environmental challenges can be approached through development cooperation (see instructions in Annex 1). The analysis was conducted as a desk study in October-November 2012 and is based on selected reports, research papers and statistics.

The Swedish Government has identified environment and climate change as one of three thematic priorities for development cooperation. This is reinforced in the Swedish policy on environment and climate change in development cooperation concluding that these aspects are a “central point of departure for all development cooperation”³. The Policy further requires that environmental impacts, effects of climate change and associated risks are assessed and integrated in analysis, planning, strategies, implementation and follow-up in Swedish development cooperation.

The Policy Brief is developed before the entry points and areas of cooperation for Swedish development cooperation in Eastern Europe have been identified.

2. Key environmental challenges and priorities

The environmental state of the former Soviet republics of Eastern Europe is still characterised by the conditions that were set by the planned economy with centralised, heavy industrialisation. Environmental effects and local conditions, such as air pollution, waste water treatment, and land degradation, were not given much attention.

Since the dissolution of the Soviet Union in 1991, the countries in Eastern Europe, Caucasus and Central Asia have been through an unprecedented economic transformation. The often chaotic situation that followed the collapse of the Soviet Union created a kind of institutional vacuum, which provided lots of opportunities for rent seeking⁴. The rapid transition further accelerated the environmental degradation. At the time, although the environmental problems were being acknowledged, it became even more pressing for the independent states to handle their urgent financial situations than giving priority to the environmental challenges. Furthermore, the transition period has been associated with increasing inequalities and

¹ This Environmental and Climate Change Policy Brief was written, at the request of Sida (Kristina Salomonsson and Helen Holm), by Gunilla Ölund Wingqvist and Hanna Wolf at Sida's Helpdesk for Environment and Climate Change. The views expressed in this Environmental and Climate Change Policy Brief are those of the authors and do not necessarily represent the views of Sida

² The Republic of Moldova is referred to as 'Moldova' throughout the document

³ Swedish Government Offices, 2009

⁴ In economics, rent-seeking is an attempt to obtain economic rent by manipulating the social or political environment in which economic activities occur, rather than by creating new wealth
(<http://en.wikipedia.org/wiki/Rent-seeking>)

widespread poverty. Especially in Georgia, inequality rates are high, with a Gini index hovering over 40⁵.

2.1 Regional level

As independent states, Belarus, Georgia, Moldova and Ukraine all have extensive environmental problems. The most severe and common environmental problems are air pollution, water quality and land degradation as well as the loss of biodiversity and ecosystem services many of which are transboundary environmental problems and has to be managed regionally and/or globally. The effects of the environmental mismanagement are grave, on ecosystems as well as on human health with potentially severe effects on the economies. The countries are vulnerable to climate change.

Pollution (to air, land and water): The magnitude of industrial pollution has decreased since the Soviet-time, but current and past pollution is a problem. Indoor and outdoor air pollution and low water quality constitute quite serious health risks. As can be seen in Annex 4, between 16% and 20% of the burden of disease is attributed to environmental health risks in the countries, which is high in comparison to other European countries.

During the cold war, the uranium extraction grew big and the enrichment caused enormous amount of radioactive waste that were stored inadequately. The security at the nuclear plants was also beneath contempt and the nuclear accident in Chernobyl in April 1986 made big parts of Ukraine and Belarus uninhabitable for many years. The situation related to hazardous waste (including radioactive) from mining and oil industry is critical. There are significant challenges relating to chemicals, particularly in relation to multilateral environmental agreements (MEA) such as the Stockholm Convention on persistent organic pollutants.

Water provides challenges both related to quality and quantity. Access to water services and sanitation are high, especially in urban areas. However, the infrastructure is deteriorating with declining quality as a result. Only Belarus has uninterrupted water supply 24 hours a day. Per capita water consumption, energy to pump water, unaccounted for water, and staffing are high compared to OECD countries.

The water resources are deteriorating rapidly, with severe consequences for ecological systems, economic development and human health. Although the economic returns for investments in the water sector can be as high as 7 to 1, the water sector receives a declining share of domestic public funding. The cost of policy inaction may be significant.⁶

The region has got a great landscape and **biological diversity** and the **natural resource** abundance has commonly been the main source of national income. Agricultural land forms a major part of the natural resource capital (except in Azerbaijan where sub-soils minerals dominates). The natural resources sector is vulnerable to the risk of rent seeking, which can have grave negative consequences for the socio-economic development in general. Commonly, the resource rents have not been sufficiently transformed into other forms of capital. As the Caucasus is one of the most biologically rich areas on earth it is urgent to halt the degradation of habitats and loss of species in the region and to increase effective management of protected areas as well as to improve databases for biodiversity conservation and sustainable management.⁷ Successful strategies for sustainable ecosystem management require enforcement of rules and regulations, stakeholder participation and reliance on local

⁵ The Gini index is a measure of inequality. A Gini index of zero expresses perfect equality whereas a Gini index of 100 (percentile scale) expresses maximal inequality. As a comparison, the Gini index for South Africa is 63 (2009); Sweden 23 (2005); UK 34 (2005); and USA 45 (2007).

⁶ OECD (2012a)

⁷ NEAP (2012) ; (UNEP (2001); and OECD (2012a)

leadership and investment in local capacity. Co-management may help build resilience in social-ecological systems and, more generally, support ecosystem management⁸.

Climate change is expected to affect all countries in the region with e.g. increase in extreme weather such as floods and droughts. This will demand that disaster risk reduction measures are in place and that adaptation plans are being developed and implemented. Climate change can have implications on for instance agricultural yields and power generation, related to both hydro power and cooling capacity of other power plants, and further increase the countries vulnerabilities for natural disaster. The International Panel on Climate Change (IPCC) has identified the Black Sea coastal zone, semi-arid regions (especially, agricultural lands/croplands and grasslands) and highlands/mountainous areas as particular vulnerable to climate change. The region suffers from a serious adaptation deficit. Moldova is among the most vulnerable. A drought in 2000-2001 is estimated to have cost Georgia 6% of GDP. The Soviet legacy of chronic environmental mismanagement has increased the region's vulnerability.⁹

Energy services: There are in general high connection rates to electricity and heating, although deteriorating infrastructure, wasteful energy consumption and affordability are becoming key issues. Biofuels and waste as an energy source are notable in Ukraine and Belarus and solar power just started in Ukraine and Moldova.

Transboundary environmental problems

Natural resources and pollution do not know political boundaries; neighbouring countries sharing a natural resource contribute to, and share the effects of, environmental problems. One example is the international spread of radioactive substances following the Chernobyl nuclear accident but also less catastrophic but still serious problems such as green-house gas emissions, pollution of air, land and water resources and land degradation and deforestation. Consequently, since environmental problems can span over administrative boundaries it has to be managed through regional and/or global cooperation.

Sharing an ecosystem, such as a river basin or a lake, creates complex interdependencies between different parties. For instance, when a river crosses national boundaries, it places the riparian countries into a state of interdependence. Activities in the upstream country will inevitably affect the quantity and quality of the water available for the downstream country, possibly with environmental, health and economic impacts. Water stress is a growing trend in the region caused by excessive and inefficient use of water and pollution. Climatic variability and change further enhances the water stress. Besides enhanced water stress, these interdependencies can, if not managed properly, cause irritation and conflicts. However, based on these relationships, sharing environmental problems can also provide incentives for cooperation and collective action across political boundaries and ethnic divides. In fact, the management of complex and transboundary environmental problems can even foster cooperation through support dialogues between stakeholders and by identifying mutual benefits of cooperation. A third part can facilitate dialogue and cooperation.¹⁰

A key challenge will be to strengthen regional cooperation and to enhance participation in regional cooperation over e.g. environment initiatives in the Black Sea region and enhance bilateral and multilateral cooperation in the Black Sea region and between the countries. The entire ecosystem of the Black Sea is in the verge of collapse, and the wetlands (including

⁸ Olsson et al. (2004)

⁹ OECD (2012a)

¹⁰ Wittich, A., Maas, A. (2009)

Ramsar sites) are heavily affected.¹¹ As important is also to improve the management and protection of shared water resources such as rivers in the region, i.e. the Nemunas, Daugava, Vistula and Dniepr running through Belarus, or the Kura-Araks River basin in Georgia or the Danube River in Moldova.

A well-managed environment is important for the well-being of all citizens. Regional cooperation also means national implementation. The development in Belarus, Georgia, Moldova and Ukraine show that it has been progress in terms of developing environmental policies, creation of environmental authorities and ratifying international environmental agreements. The countries have somewhat different *environmental challenges and priorities*. The priorities are summarised in Table 1, and more details are provided in sections 2.2 to 2.5.

Table 1. Environmental priorities in Eastern Partnership countries

Country	First environmental priority	Second environmental priority	Third environmental priority
Armenia	Programmes and measures according to the comprehensive programme on the Lake Sevan	Preservation of protected areas (national parks, state reserves, etc.)	Other nature conservation measures
Azerbaijan	Preservation of biodiversity, restoration of natural resources	Measures on combating desertification, mostly on restoration of pastures	Harmonisation of environmental legislation with the EU legislation
Belarus	Protection, rational use, reproduction of natural resources as necessary conditions for providing favourable environment and ecological safety		Other environmental measures
Georgia	Enhancing environmental protection systems	Sustainable use of mineral resources	Enhancing monitoring and forecasting systems
Moldova	Development of policy and management in the field of environmental protection	Improved control of persistent organic pollutants and other chemical substances	Environmental safety and environmental quality control
Ukraine	Implementation of environmental quality standards, approaching those of the EU	Dynamic creation of an environmental network of parks and reserves	Development of regulatory basis for the effective implementation of the Kyoto Protocol

Source: OECD (2012a)

2.2 Belarus

Key environmental challenges and trends, causes, key drivers and impacts

The biggest environmental challenges facing Belarus today, relate to water quality, waste management, nature protection, soil degradation, industrial pollution and radioactive contamination from the Chernobyl accident in 1986. In Belarus the environment is responsible for over 20% of the total burden of disease, which makes preventing disease and injury at the heart of the public health and health systems.

The industrial sector in Belarus is large and of key importance for the national economy, including chemical and petrochemical industries, construction materials, wood and paper

¹¹ Drakenberg (2010); UNECE (2011)

enterprises, but it also contributes to pollution. Waste management, including prevention, collection, treatment, recovery and final disposal of waste, is identified by the ENPI as another difficult challenge. The problems are still huge in regards to the radioactive fallout, especially serious environmental problems caused by radioactive contamination, water pollution and soil degradation and of course critical human health effects.¹²

Further environmental challenges are also being presented by climate change in such areas as agriculture, forestry and water resources and ecosystem management, and it has been recognized that Belarus will need to put forward adaptation measures to protect its social and economic systems for changing climatic conditions.¹³

Production in Belarus remains very energy intensive by international standards, with many inefficient and environmentally unfriendly technologies still in use, despite investment in modernisation of production and structural economic shift towards services.

National environmental priorities

In the National Strategy for Sustainable Development it is stressed that “the primary objective of state policy in the field of ecological security is keeping it at a high level in the context of economic growth”. Belarus argues that prevention of a threat to human life and health as a result of environmental pollution is the priority, then secondly, prevention of degradation of natural resources potential and gene pool, as well as the destruction of natural and cultural monuments. Prevention of accidents at risk sites comes on third place followed by minimisation of socio economic and ecological consequences in case of an emergency situation.¹⁴

Belarus is to a large extent dependent on external natural resources and energy. A priority for Belarus is energy efficiency and to develop the adequate institutional and incentive structures to adjust to a more sustainable path of energy use.

Current environmental policy for the rational use of natural resources and environmental protection is developed through five year national action plans¹⁵. The legislation that addresses environment and health risks is quite comprehensive, but according to WHO it is too general and not action oriented and needs to be accompanied by clearly stated targets and indicators.¹⁶

Brief information on policy framework and governance (including implementation)

Belarus has got a framework law on environmental protection, which was adopted in 1992, last amended in 2002. Sector-specific legislation has been adopted, including on air quality, waste management and nature protection as well as plans and strategies, e.g. on forest management and municipal waste management, have also been developed.¹⁷

The law on environmental protection and the law on state ecological expertise contain provisions for environmental impact assessment but access to information and public participation needs to be improved, including support for civil society. Even though, environment legislation is in place in many areas they need to be further developed, especially with regard to implementing legislation.

As regards global environment issues and climate change in particular, Belarus acceded to the Kyoto Protocol in 2005. A National Programme (NPMCCC) has been prepared in order to

¹² EU (2007)

¹³ Drakenberg (2010)

¹⁴ Government of Belarus (2012)

¹⁵ UNECE (2005)

¹⁶ WHO (2011)

¹⁷ EU (2007)

fulfil the commitments of Belarus under the UNFCCC and Kyoto Protocol. The Programme includes the system of legal, financial, economic and organizational measures, support to national monitoring and assessment, wide implementation of renewable energy sources and energy-saving technologies.¹⁸

The pricing of energy remains inadequate to incentivise efficient use and the non-price barriers to energy efficiency persist. Incentives for improvements in energy efficiency need to be strengthened through appropriate policies, including market pricing of energy and establishment of a clear framework for renewable energy.¹⁹

2.3 Georgia

Key environmental challenges and trends, causes, key drivers and impacts

In Georgia the most important environmental problems relate to air and water quality, waste management, land use, coastal and marine pollution, chemical pollution and nature conservation. Air pollution is growing concern and exposure to the polluted air cause human health related risks and will require measures for reduction of pollutants as well as a more developed air monitoring system. The water supply sector in Georgia is underdeveloped, waterborne diseases still occur; and the UNECE Environmental Performance Review (2010) estimate the sanitation situation to be worse than in 2002. The quality of drinking water often does not comply with human health and safety standards. Of the urban population, only 70 per cent is connected to the sewerage system²⁰. Untreated wastewater and concentration of pollutants also cause river pollution. Mining oil production and food industry are industrial sectors affecting the water quality as well as landfills, illegal dumpsites and agriculture activities²¹. The waste management in Georgia is one other major concern. Most of the official municipal landfills operational today in Georgia were constructed in Soviet and does not meet the current environmental requirements. Orphan radioactive sources is another major problem in Georgia enhanced by the absence of regulatory controls. The national capability to detect and manage adequately orphan radioactive sources has been increasing since 2003 reports.²²

In Georgia, overgrazing, loss of forest cover and unplanned urban sprawl together with frequent agricultural soil contamination caused by the inappropriate use of fertilisers, chemicals, heavy metals and disposal of industrial and municipal waste has led land degradation and the situation is worsening²³. Increasing illegal logging reflects diminishing living standards as a driver of environment and environmental deterioration together with state's decreased control. This has led to an almost 35% degradation of farmlands²⁴.

Due to its specific geographical location and mountainous landscape Georgia is highly vulnerable to natural disasters since they are characterised by high extensiveness, frequency and risk level (see Box 1). Climate change further intensifies disasters with floods and droughts as the major climatological hazards in the country affecting people, agriculture, and infrastructure and hydro-power generation.

National environmental priorities

In Georgia's National Environmental Action Programme for 2012 –2016, the need for sustainable development principles balancing economic growth, environmental protection and

¹⁸ Drakenberg (2010)

¹⁹ Drakenberg (2010)

²⁰ UNECE (2012)

²¹ Government of Georgia (2012)

²² UNECE (2012)

²³ Government of Georgia (2012)

²⁴ Ölund Wingqvist (2009)

social development, is recognised. It further highlights the general need to; Improve environmental legislation; Increase awareness of stakeholders; Improve monitoring, inspection and enforcement systems; and Strengthening the knowledge for adequate policy-making in order to reach the long term goals within the following eleven areas; Water resources, Air protection, Waste and chemicals, the Black Sea, Biodiversity and Protected areas, Forestry, Land resources, Mineral resources and Groundwater, Disasters, Nuclear and Radiation safety and Climate change.²⁵

Box 1. Information on human and material losses caused by disasters in Georgia

During the period of 1967-2009, approximately 70% of the territory of Georgia experienced natural hazards of hydro-meteorological and geological origin. The disaster risk zones encompassed more than 3,000 settlements. More than 400,000 houses and facilities, 1.5 million ha of agricultural lands and 550 kilometres of roads were damaged and/or destroyed. Approximately 60,000 households were resettled to other areas.

Economic losses from the above mentioned calamities exceeded 14 billion USD, with more than 1,000 human casualties, including 600 people since 1987.

Source: NEAP, Govt of Georgia (2012)

Brief information on policy framework and governance (including implementation)

The adoption of the second National Environmental Action Plan for 2012–2016 is still pending and it is assessed that there were no significant developments with regard to Georgia's ratification of, or accession to, environment related conventions and protocols of the UN Economic Commission for Europe²⁶. During 2011 a new water management law have been drafted and a national action plan on persistent organic pollutants has been adopted. Another reported progress is that Georgia's cooperation with the countries from the region including the exchange of best practices with the EU in the field of disaster prevention, preparedness and response through its participation in the EU Programme for Prevention of, Preparedness for, and Response to natural and man-made disasters has been intensified.²⁷

Although, Georgia got the legislative base for addressing disaster risk management, improvements are needed when it comes to implementation. UNECE (2010) points out the inefficient functioning of the national coordination mechanism and scattering of institutional efforts among various Government agencies, and insufficient public awareness. Also, legislation on disaster response and recovery does not comply with international standards and norms. The Government's support is low and risk assessment is not considered a priority although Georgia adopted the Hyogo Framework for Action in 2005.

Even though the UNECE Environmental Performance Review from 2010 state that environmental enforcement have taken place the review also make clear that environmental policy is still not acknowledged as a high priority issue and that the economic value of environmental policy has been ignored. The negative Adjusted Net Saving (-2,2 % of GNP in 2008), indicates that the development is unsustainable.²⁸

Although progress has been achieved in the implementation of Multilateral Environmental Agreements implementation (such as e.g. the Kyoto protocol), a lot still have to be done, one

²⁵ Govt. of Georgia (2012)

²⁶ EU (2012f)

²⁷ EU (2012g)

²⁸ Ölund Wingqvist (2009)

reason is the scattered data between different institutions and the lack of a comprehensive database.²⁹

2.4 Moldova

Key environmental challenges and trends, causes, key drivers and impacts

The main environmental challenges facing Moldova are air quality, water quality, waste management, nature protection. Thereto climate change adds an extra dimension. Natural hazards such as landslides are further increased due to extensive soil erosion from poor farming methods and unsustainable logging, which has also led to loss of biodiversity. Heavy use of agricultural chemicals, including banned pesticides such as DDT, has contaminated soil and groundwater. Concerning water quality, infrastructure for waste water collection and treatment needs to be upgraded and new capacity constructed. A large percentage of households do not have a proper connection to the sewage system. Waste management is a significant challenge, including prevention, collection, treatment, recovery and final disposal.

The economy depends heavily on agriculture (including fruits, vegetables, wine, and tobacco) since Moldova got a favourable climate and good farmlands but no major mineral deposits or energy sources, why Moldova imports almost all of its energy supplies (97 %) and is heavily dependent on Russian energy³⁰.

National environmental priorities

The Government's strategic vision over medium and long term is to reconcile between the need for accelerated economic development and environmental protection in coherence with European standards. A number of strategies and programmes with the aim to integrate environmental considerations e.g. into sector-specific strategies and policy have been developed.³¹

The main goal for the Republic of Moldova is to set an institutional cooperation and support promoting energy efficiency and renewable energy. Moldova is highly dependent on energy imports, about 97% of its energy needs. In absence of national fossil energy resource, promotion of energy efficiency and use of available renewable energy resources is prioritized.³²

In 2011 Moldova further developed legislation and took steps to improve the financial situation in the energy sector. The regulator increased heat, gas and electricity tariffs and adopted a methodology for transmission tariffs.³³

Brief information on policy framework and governance (including implementation)

In many areas environment legislation is in place but inter-ministerial coordination and cooperation constitute a challenge and implementing legislation is not fully developed or applied and face challenges due to limited administrative capacities and financial resources³⁴.

The Republic of Moldova has started to prepare an environment strategy for 2012-2022. A Framework legislation on environmental protection as well as on environmental impact assessment is still pending. A major challenge is to strengthening the administrative capacity at all levels.³⁵

²⁹ UNECE (2012)

³⁰ Govt. of Moldova (2012a)

³¹ Govt. of Moldova (2012b.)

³² Govt. of Moldova (2012b) Annex 4.

³³ EU (2012h)

³⁴ EU (2006)

³⁵ EU (2012h)

The EU – Moldova Action Plan points to the need for action with regard to environmental governance, issues specific activities as well as on international and regional cooperation on environment issues. The role of civil society's involvement in the development of environmental protection is also prioritised³⁶.

2.5 Ukraine

Key environmental challenges and trends, causes, key drivers and impacts

Ukraine's environment remains in a critical state, even though efforts have been made in Ukraine to address the heavy environmental legacy of the past. There is still an urgent need for the integration of environmental considerations and improvement of energy efficiency in industrial, energy and agricultural sectors as well as a need to raise awareness of the environment among consumers. The air quality, water quality, waste management, nature protection and radiation contamination in the north-eastern part of the country are the key environmental challenges in Ukraine today. (ENPI Ukraine 2011) The major environmental challenges can be summarized as, unsustainable use of natural resources which causes huge effects for both the nature and people's health. Climate change will further impact the agriculture, forestry, water and coastal resources. The Black Sea level is rising 1.5 mm per year.³⁷

Ukraine, as the second largest country in Europe, got vast areas of fertile soil and a favorable climate, consequently agriculture have played a crucial role in the economy. Today land degradation has led to problems with increase the productivity and Ukraine has become a net importer of wheat. Overfishing and environmental degradation and pollution, mainly in the Azov Sea but also in the Black Sea, and in the freshwaters have contributed to the landings declined. Deforestation and illegal logging are problematic and nature protection efforts are an area urgent need of improvement.

Ukraine has got an energy-intensive and energy-inefficient economy, which gives high levels of greenhouse gas emissions. But the Kyoto protocols emission reduction target for Ukraine (0 from base year's emissions) implies no incitements for Ukraine to reduce its emissions since Ukraine lies well below its targets due to 1990 being the base year for the estimation of anthropogenic emissions of carbon dioxide and other greenhouse gases. Since 1990 the Ukrainian economy have been facing a deep crisis and forecasts indicate that even the most opportunistic development will not implicate that emissions exceed 1990 levels.³⁸

3. Actors

3.1 Donors, intergovernmental and international actors

Donors

Official Development Assistance (ODA) can play an important role in providing support to the countries to establish enabling conditions for green growth and facilitate green investments. The European Union is of course a key actor in the region. There are also a number of relevant UN bodies active in the region such as the UN Development Program (UNDP), the UN Environmental Program (UNEP) and e.g. the UN Children's Fund (UNICEF). The World Bank also has a strong presence in regards to supporting environmental protection projects and renewable energy and energy efficiency projects. The European Bank for Reconstruction and Development (EBRD) is today the largest financial

³⁶ EU (2006)

³⁷ <http://unfccc.int/resource/docs/dpr/ukr1.pdf>

³⁸ http://unfccc.int/files/ghg_emissions_data/application/pdf/ukr_ghg_profile.pdf

investor in the EECCA region. In particular, the EBRD has a leadership position on climate change and energy efficiency financing.

The US government, IMF, Germany, Netherlands, and UK, are other major donors in the region. Moreover, the International Committee of the Red Cross, ICRC together with The UN Refugee Authority, UNHCR, is active in the region and will be key actors in case of emergency response and relief support.

The major elements included in multilateral aid are energy efficiency and water supply/wastewater treatment, followed by renewable energy (mostly in hydropower, with some in wind and biomass) and sustainable agriculture/land management. Water-related ODA has increased substantially since 2007, and the reliance on external funding in the water sector is high. The multilateral donors give less attention to waste management (apart from Azerbaijan with its large hazardous waste clean-up projects) and improvements in public transportation.

Furthermore, issues related to cross-sectoral green growth aspects, such as environmental fiscal reform, product policies or eco-technologies and innovation, are difficult to identify. It appears that these issues are not explicitly addressed in the development cooperation.

Environment-related support is largely provided through project funding although budgetary and sector support is increasing in some countries (Armenia, Georgia, Moldova, and Ukraine). As from 2010 Georgia and Moldova benefits from sector support related to water and sanitation.

The Regional Environmental Centre (REC)

REC is an international organisation with a mission to assist in addressing environmental issues in a range of different areas (including biodiversity, climate change, water management, health, and governance, etc.). REC is active in Central and Eastern Europe and Western Balkan, and is attempting to enhance its role also in the South Caucasus region. The REC promotes cooperation among governments, non-governmental organisations, businesses and other environmental stakeholders, and supports transparency of information and public participation in environmental decision making.

International Union for Conservation of Nature (IUCN)

IUCN's presence in the Caucasus eco-region started in the 1990s, when national NGOs joined as Members. In 2007 the Programme Office for the Southern Caucasus was established in Tbilisi, Georgia. Membership has significantly increased since then – six new Members joined during the last two years, including Georgia as a State member. The Programme Office for the Southern Caucasus focused on protected areas, biodiversity monitoring, forest governance and environmental awareness. One of the major barriers to achieving IUCN's mission has been the induced competition with its own Members for the same funds, as the donor funds for the region are usually disbursed on a competitive basis.

The Environment and Security Initiative (ENVSEC)

ENVSEC is a partnership of six international organisations – the Organization for Security and Co-operation in Europe (OSCE), Regional Environment Centre for Central and Eastern Europe (REC), UNDP, UNECE, UNEP, and NATO as an associated partner – with specialized, but complementary mandates and expertise, which provides an integrated response to environment and security challenges. The mission of ENVSEC is to contribute to the reduction of environment and security risks through strengthened cooperation among and within countries in four regions: Central Asia, Eastern Europe, Southern Caucasus, and South-Eastern Europe.

3.2 Civil society organisations

In Belarus the situation with human rights, the rule of law and democratic principles are particularly difficult which directly hinder active civil society participation. There is however a number of registered environmental NGO. These environmental NGOs can be utilized to improve the environment but also enhance other governance aspects such as transparency, participation and accountability.

In Georgia, Moldova and Ukraine the inclusion of civil society in decision making is supported by the states but there is a need for capacity building both within state actors and non-state actors in order for the participation to become inclusive and effective.

Civil Society Forum (SCF)

The Eastern Partnership initiative pays special attention to mandatory involvement of civil society (CS) in the ENP implementation which was the reason for establishing the Civil Society Forum (SCF). One of the working groups (WG3) is, “Environment, climate change and energy security”. It was created at the 1st CSF in 2009 in Brussels and is coordinated by two elected coordinators - one from an EU country and another from a partner country.

The annual meeting of the Eastern Partnership Civil Society Forum WG 3 “Environment, climate change and energy security” was held in Kyiv on 23 June 2011. It involved representatives of civil society organisations — members of the Civil Society Forum Working Group 3 (WG3) from the EU and 6 partner countries — Azerbaijan, Armenia, Belarus, Georgia, Moldova and Ukraine — as well as guests and observers. The meeting was organized by MAMA-86 Ukrainian National Environmental NGO. The MAMA – 86 is a local NGO from Ukraine, but with an extended network in the region.

ECNC-European Centre for Nature Conservation

ECNC-European Centre for Nature Conservation is an independent European biodiversity expertise centre for sustainable development, based on a foundation structure. ECNC’s stated mission is a beautiful Europe based on a rich biodiversity, healthy ecosystems and sustainable development. The organization promotes an integrated approach for both land and sea and stimulates interaction between science, society and policy.

Milieukontakt International

Milieukontakt international is an organisation of professionals with a network of individuals, organisations and institutions working for a better environment throughout the world and the organisation is active in Ukraine, Moldova, Georgia, as well as in Belarus.

CEE Bankwatch Network

CEE Bankwatch Network is an international NGO with member organisations from countries across central and eastern Europe (CEE). They monitor the activities of international financial institutions (IFIs), especially the European Bank for Reconstruction and Development (EBRD), which operate in the region and promote environmentally, socially and economically sustainable alternatives to their policies and projects. In the Eastern Europe CEE Bankwatch Network is not engaged in any activities in Belarus.

3.3 Public-Private initiatives

The **Extractive Industry Transparency Initiative (EITI)** is a global standard that promotes revenue transparency. It has a methodology for monitoring and reconciling company payments and government revenues at the country level, i.e. companies publish what they pay and governments publish what they receive. The process is overseen by participants from the government, companies and national civil society. Technical assistance for implementing countries is available through a Multi-Donor trust fund administered by the World Bank.

The benefit for governments is that participation can reduce corruption risks and improve governance and international credibility. EITI levels the playing field for companies as all are required to disclose the same information. For civil society increased transparency makes it easier to hold governments and companies accountable for the revenues generated (EITI, 2010). In 2008 the Swedish government announced its support to the EITI. Ukraine is currently trying to become a candidate country. However, as implementation is very weak overall in the region, full adherence to principles may mean little in reality. This highlights the need for improved *implementation*.

Another interesting example is the **UN Global Compact**, which is both a policy platform and a practical framework for companies that are committed to sustainability and responsible business practices. It seeks to align business operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anticorruption enforcement and to catalyse actions in line with broader UN goals. It is the world's largest voluntary corporate citizenship initiative, with over 6 500 signatories based in more than 130 countries. Members from Ukraine, Moldova, Georgia and Belarus are all participating in the Global Compact. Ukraine has most members in the Global Compact, although the share of business participants is low. In Belarus, on the other hand, 74% of the members are businesses.³⁹

4. Environmental aspects of the EU approximation

4.1 European Neighbourhood Policy⁴⁰

The objective of the European Neighbourhood Policy (ENP), developed in 2004, is to share the benefits of the EU with neighbouring countries⁴¹, thus helping to strengthen prosperity, stability and security. Following a number of events, such as the enactment of the Lisbon Treaty (2009), the outbreak of the 'Arab Spring' in early 2011, and the conflicts in Libya and Syria, the ENP was reviewed in 2011. The review showed that although important initiatives had been supported, particularly related to trade and economics, the results of the support to political reforms in neighbouring countries had been limited. A need was identified for a new approach that is flexible and tailored to the needs, capacities and reform needs in each neighbour country. The revitalised ENP supports a "more for more" approach, where committed reformers in the neighbourhood countries are awarded greater and broader EU support.

The new approach aims to support: (i) the building of "deep democracy", (ii) inclusive economic development, (iii) effective regional partnerships (such as the Eastern Partnership), and (iv) development of the necessary mechanisms and instruments.⁴²

The legal basis for the ENP is the Association Agreements or Partnership and Cooperation Agreements. Negotiations on Association Agreements has been finalised with Ukraine, and launched with Armenia, Azerbaijan, Georgia and Moldova.

³⁹ OECD (2012a)

⁴⁰ If not other references are mentioned, the section builds on information from: EU (2012a,b); EU (2011a); and EU/EC Press release press release 15 May 2012

⁴¹ The European Neighbourhood includes: Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, the Republic of Moldova, Morocco, the Occupied Palestinian Territories, Syria, Tunisia and Ukraine.

⁴² EU (2011a)

Environmental and climate change aspects appear to be a cross-cutting issue as well as a sector cooperation area under *inclusive economic development*, together with energy, trade, transport, and migration and mobility.

Action plans for the neighbourhood countries are at the core of the ENP and reflect the commitments undertaken by the neighbourhood countries. The Action Plans are based on common principles although taking specificities of each neighbour into account⁴³. Progress towards the agreed goals is assessed annually in ENP country reports.

The Action plans continue to be the corner stone of the revitalised ENP but the cooperation focuses more on a limited number of priorities with a clearer sequencing of actions utilising more precise benchmarks. Meanwhile, a new generation of ENP Action Plans are being negotiated with many partners. They will provide an updated policy framework and facilitate an improved coordination of financial and technical assistance between the EU and its member states (MS).⁴⁴

As a part of the “more for more” approach, mutual accountability is promoted, and the policy dialogue is more interactive and frank. From 2012, the country progress reports will become more straightforward, particularly related to deep and sustainable democracy.

4.2 Eastern Partnership⁴⁵

During 2008 Sweden and Poland took a joint initiative to enhance EU’s relations with its eastern neighbours and in 2009 the Eastern Partnership (EaP) was established. The EaP is based on the ENP but goes beyond it, and includes the six countries of Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. The main goal of the EaP is to help promote political and economic reforms and assist the countries of the region to move closer to the EU.

A Roadmap was agreed in 2012 with collaboration priorities regarding both the bilateral and multilateral dimensions of the Eastern Partnership. The “more for more” principle is applied, and progress on reforms will be assessed in the annual ENP country reports.

Although each partner country has an individual relationship with EU, the overarching objectives of the *bilateral dimension* of the Roadmap are similar for all countries:

- a) Political association and economic integration
- b) Enhanced mobility of citizens in a secure and well managed environment
- c) Strengthened sector cooperation

Similarly to the ENP, issues related to environment and climate change are handled both as a cross cutting issue and a sector included under the third objective related to enhanced sector cooperation. There are important aspects of environment and climate change linked to all three cooperation areas, further described below. This is acknowledged in the EaP and the partner countries benefits from five flagship initiatives where one is on environmental governance⁴⁶. The Flagship Initiatives form part of the multilateral dimension of the EaP, aiming to complement the bilateral objectives of the partnership.

⁴³ EU (2004b)

⁴⁴ EU (2011a)

⁴⁵ If no other references are made, the section builds on information from: EU (2012c); EU (2012d); and EU (2012e)

⁴⁶ The other flagship initiatives are: Integrated border management; Small and medium-sized enterprise development; Energy markets and energy efficiency; and Disaster risk reduction.

4.2.1 Political association and economic integration and the environment

Political association and economic integration relate to implementation of *common values and principles* of liberty, democracy, respect for human rights and fundamental freedoms, and the rule of law. The Association Agreements (AAs), including ‘Deep and Comprehensive Free Trade Areas’ (DCFTA), offer the EaP countries possibilities to choose ambition level in the cooperation with the EU. The AAs can be used for regulatory and institutional convergence, including alignment with EU laws, norms and standards.

Although environment and climate change is not an explicit part of the cooperation area, it is increasingly understood that **human rights and governance** aspects have a strong effect on environmental actions and outcomes. Weak governance is correlated with negative environmental outcomes and is closely associated with social ills, such as corruption, social exclusion and the lack of trust in authorities. Good governance, on the other hand, has the potential to regulate and enforce environmentally sound policies and steer individuals and societies into productive outcomes and sustainable use of the environmental resources. Where, for instance, vested interests work against reforms for controlling industrial pollution or deforestation, there are often also weaker constituencies, such as affected communities, unions and environmental organisations, pushing for reform implementation. Accountability mechanisms, such as ensuring the rights to access information, public participation and access to an impartial justice system, are essential for enabling these constituencies to demand environmental improvements.⁴⁷

The Environmental Governance Flagship Initiative supports that improved governance is an underlying condition required to protect the environment. Governance principles need to be strengthened in order to enhance implementation of policies and legislations, as well as to promote sustainable growth.⁴⁸

The main source for wealth creation in the EECCA has been natural resource abundance. Transparency of how revenues from resource extraction are collected and spent is important.

In the review of the ENP it is stated that commitments to human rights and fundamental freedoms are not always matched by action in the neighbourhood countries. The partnership should be underpinned by ratification of relevant international and regional instruments followed by full compliance.⁴⁹ Section 4.3 and Annex 2 provide information on certain governance indicators for Belarus, Georgia, Moldova and Ukraine.

Trade is intrinsically linked to environment and climate change. Firstly, exports in the EaP countries are dominated by natural resources, principally non-renewable, agricultural products, fishery and forestry. These natural resources are, however, not managed in a sustainable way. Marine resources are in a poor state from overfishing and pollution; deforestation and illegal logging is a problem in several places; and fresh water is one of the most vulnerable resources and a key input to the economic activities. Increased demand for natural resources emphasises the urgent need for improved domestic resource management. This is particularly true for transition economies where the imperfect legislation and governance can make it difficult to balance the need for short-term economic growth with long-term sustainable development.

Secondly, there are also more indirect linkages between trade and environment and climate change. Free trade can be viewed as ‘pro-environment’, for instance by increasing resource efficiency, encourage innovation and generate resources that can be used for environmental

⁴⁷ Ölund Wingqvist et al. (2012)

⁴⁸ EaP Flagship Initiatives http://eeas.europa.eu/eastern/initiatives/index_en.htm

⁴⁹ EU (2011a)

protection. However, free trade can also be conceived as ‘anti-environment’, for example from increased transportation needs, movement of highly polluting industries to economies with less stringent environmental legislation, and unsustainable resource utilisation due to the non-pricing of biodiversity and ecosystem services.⁵⁰ Hence, it is important that any trade agreement takes into account aspects of green growth and alignment to multilateral environmental agreements (e.g. related to climate change, biodiversity, hazardous waste, etc.). EU is attempting an integrated approach to climate change mitigation and trade through its Emission Trading Scheme (EU ETS) where it is currently suggesting including emissions from aviation and shipping.⁵¹

The DCFTA covers tariff reductions, but also a high degree of regulatory approximation. The trade integration imposes a need to monitor the evolution and enforcement of policies and regulatory frameworks, including environmental ones. *Thus, for the EaP countries, trade integration is an important driving force for approximation with EU environmental legislation.*⁵²

4.2.2 Enhanced mobility of citizens in a secure and well managed environment

This area of cooperation includes aspects of free movement and mobility such as visa procedures, fight against trafficking, organised crime and corruption, and improved law enforcement. Particularly the latter two areas of anti-corruption and law enforcement are relevant for environmental protection. An impartial bureaucracy, government effectiveness and corruption are important factors for improved environmental outcomes.

High-value natural resources, such as minerals and forests, are prone to corruption and illegal activities. Similarly, environmental permitting or natural resource licensing is vulnerable to corrupt or illegal activities or to mere inaction. Even when there is a good policy and regulatory framework in place, implementation and enforcement of environmental policies and laws is crucial but often inadequate, especially at the sub-national level. Efforts to improve environmental policies must go hand in hand with efforts to reduce corruption if they are to have the intended effects.⁵³

Environmental permitting is a key instrument for regulating industry’s environmental impacts and promoting technological innovation. The interaction between permitting and environmental impact assessment (EIA) is especially important. However, environmental authorities in the EaP countries are typically weak, and are often unable to effectively fulfil their core functions, such as permitting, licencing, compliance monitoring, and issuing of sanctions. Without regular, methodical and accurate compliance monitoring and truthful reporting, neither the government nor the polluters will be able to make informed decisions about achieving compliance.

4.2.3 Strengthened sector cooperation

Strengthened sector cooperation includes cooperation in the areas of energy, transport, regional development, agriculture and rural development, and environment and climate change. The environmental linkages for this cooperation area are quite clear and less ambiguous than the previous two cooperation areas.

Environmental impacts from *energy production and transportation* are many and significant: air pollution, including emission of greenhouse gases (GHG), land and water contamination,

⁵⁰ Leas-Arcas (2012); Ekbom et al. (2008).

⁵¹ Leas-Arcas (2012)

⁵² OECD (2012a)

⁵³ Ölund Wingqvist et al. (2012)

unsustainable extraction of various energy resources, and inadequate waste disposal. A majority of the energy sources are non-renewable, although Georgia has a relatively high share of renewable electricity production (mainly hydro power). The energy efficiency is low; the carbon emission per unit of GDP is among the highest in the world – only Georgia is approaching OECD benchmarks. *There is a huge potential for improving energy efficiency, particularly for district heating.* Belarus has already reduced energy consumption by 50% between 1996 and 2008, as a result of an effectively implemented energy efficiency strategy aimed at reducing import dependency. The International Energy Agency (IEA) notes that *energy efficiency progress will largely be driven by government policies and improved governance*, for instance through introducing regulated market energy prices, metering, collection of tariffs, and targeted incentives. The general energy subsidy should be replaced by support to vulnerable groups.⁵⁴

Agriculture is the top job provider in most EaP countries. It is also the main water-using sector and a main concern is the nexus between food security and water. Unsustainable irrigation is the cause of salinity and soil erosion with negative impacts on agricultural productivity. Over-use of agro-chemicals cause pollution to water and land. A transition towards organic farming and environmentally sustainable agro-food systems is a central green growth sector in some countries (e.g. Moldova and Georgia).

Cooperation related to **environment and climate change** relates first and foremost to alignment to EU environmental legislation. Implementation of EU's timber regulation (entering into force 2013) is, for instance, expected to provide an effective means to sustainable forest practices. Another example is alignment to EU's Integrated Pollution Prevention and Control (IPPC) Directive (96/61/EC). In this case, each country will need to develop a permitting system that suits its own legal and institutional arrangements, and its social, economic and environmental priorities. In Ukraine and Georgia, strengthened stakeholder participation (both vertical, or inter-ministerial and horizontal, with regional permitting authorities and the public) has been identified as an area for improvement related to improved integrated permitting.⁵⁵

4.3 Governance a key aspect to EU approximation

From the previous brief overview it has been clear that there are various environmental elements relevant to the EU approximation. Issues like human rights and freedoms, improved policy and regulatory frameworks combined with control of corruption and improved law enforcement, are important for improving environmental outcomes. Identifying which are the most important governance measures for improved environmental outcomes requires a situation-specific analysis, and the results are highly dependent on the country or local context.

Figure 1 compares a set of governance indicators (Worldwide Governance Indicators, WGI) for Belarus, Moldova, Georgia and Ukraine. The governance indicators are: 'Voice and accountability', 'Political stability and absence of violence and terrorism', 'Government effectiveness', 'Regulatory quality', 'Rule of law', and 'Control of corruption'.⁵⁶

⁵⁴ OECD (2012)

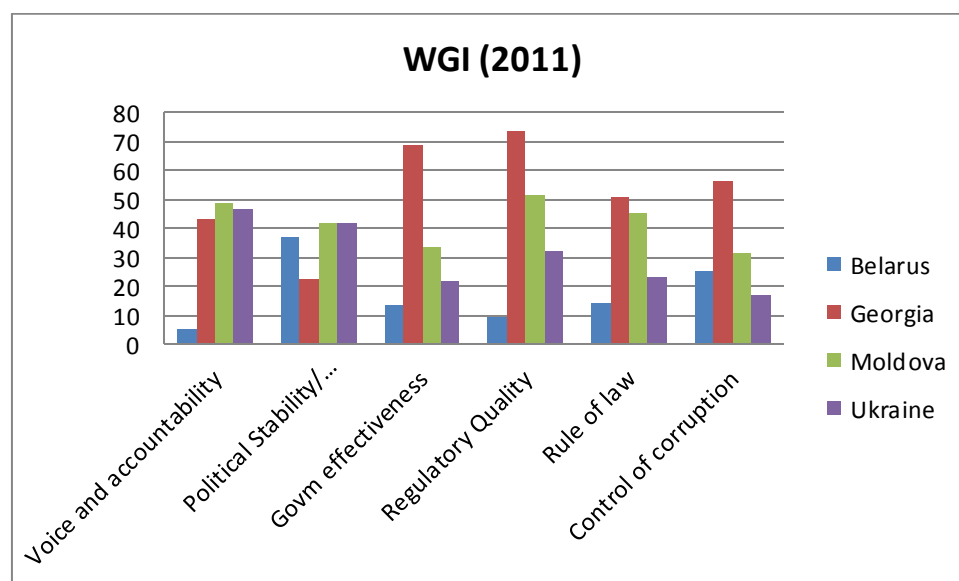
⁵⁵ OECD (2005)

⁵⁶ The WGI is a useful tool for broad cross-country comparison and for evaluating broad trends over time. However, the data is not intended to be used for formulating specific governance reforms in a particular country context. Such reforms need to be informed by much more detailed and country specific information. Furthermore, the data should be treated with care as it involves uncertainties and builds on statistical compilations of responses from a large number of stakeholders.

Overall, governance is improving in some countries in the East Europe/Caucasus region. OECD (2007) informs that firms reported a smaller incidence of corruption in 2005 than in 2002 in some but not all countries of the Eastern Europe, Caucasus and Central Asia (EECCA) region. Most EECCA countries show improvements in economic governance, but are still constrained by regulatory barriers and widespread corruption. Reform has been embraced in several Caucasus and East European countries by new or re-elected leaders who have strengthened their commitment to democracy and markets. However, the countries still face the challenges associated with the Soviet administrative traditions of silo-thinking, non-transparency and low accountability and there are continued challenges to improve the rule of law and judiciary independence. Furthermore, private sector development continues to be constrained by a variety of regulatory barriers and political and regulatory instability.

As can be seen from Figure 1, the four countries show disparity in relation to the different governance indicators. With the exception of Georgia, most governance indicators are quite low, not exceeding the 50th percentile. Georgia scores relatively high on 'government effectiveness' and 'regulatory quality'. Belarus scores very low on most indicators, although 'political stability' had a relatively good score in 2011, similar to the other countries. Ukraine scores low particularly for 'government effectiveness', 'rule of law', and 'control of corruption'.

Figure 1. Comparison of six different governance indicators for Belarus, Georgia, Moldova, and Ukraine (2011) (percentile rank 0-100).



Source: Authors, based on World Governance Indicators by Kaufmann et al., 2010. Data from 2011 collected from the website http://info.worldbank.org/governance/wgi/sc_country.asp

Annex 2 shows a comparison of governance indicators over the last decade for the four countries. Georgia has made strong improvements related to 'government effectiveness', 'regulatory quality', 'rule of law', and 'control of corruption'. Indicators for 'voice and accountability' and 'political stability and absence of violence and terrorism' have been stable; the latter on a quite low score. This is probably related to the internal and external conflicts.

Ukraine has improved on 'voice and accountability', 'political stability and absence of violence and terrorism' since 2000. Also indicators related to 'rule of law' and 'control of corruption' have improved, albeit from a very low point of departure.

Governance indicators for *Moldova* show modest improvements since 2000 on all fronts except ‘Control of corruption’. The governance indicators for *Belarus* are the only ones that are not showing any improvements, but on the contrary, significant worsening. ‘Political stability’ and ‘control of corruption’, although declining, are now on par with the other countries – except Georgia who scores significantly higher than the rest.

4.4 Environmental indicators

Governance aspects are key factors for improved environmental performance. However, improving governance is not the sole solution. It needs to be accompanied with political priorities and budget allocations. The environmental priorities for each EaP country is listed in Table 1 (section 2.1).

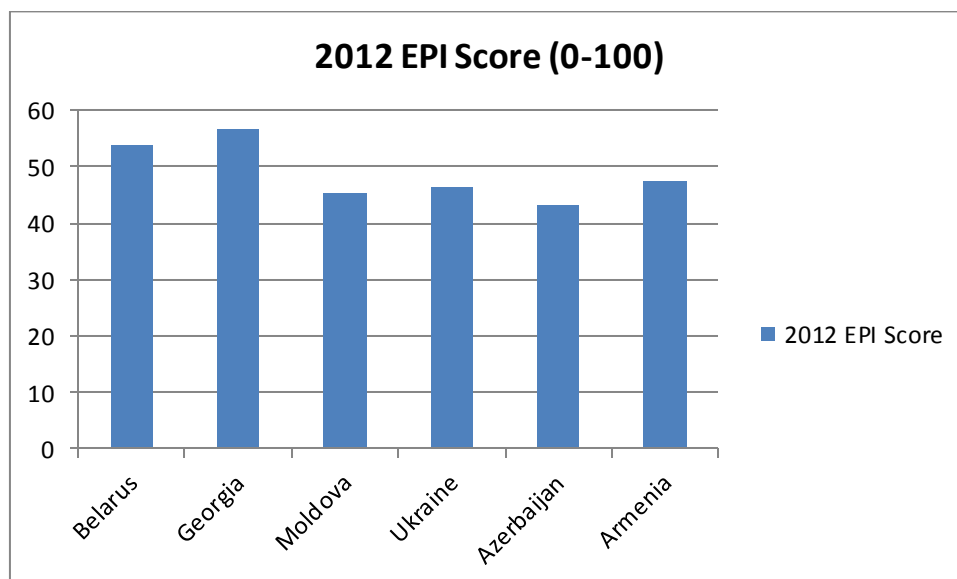
Environmental priorities provide information on what the governments think is important. However, it does not really provide any information on what is actually done. To get a better picture of the environmental performance in each country, Figure 2 shows Environmental Performance Indices for the EaP countries. The Environmental Performance Index (EPI) ranks 132 countries on 22 performance indicators spanning ten policy categories divided in Environmental Health and Ecosystem Vitality.⁵⁷ Besides environmental performance, the EPI also tracks trends (see Annex 3).

As can be viewed in Figure 2, all six countries included are “modest” or “weaker” performers. The countries show little or modest changes over the last decade – with the grand exception of Azerbaijan, who has been one of the top improvers in the world the last decade. This means that the counties show improvements in some environmental areas but set-backs in others. Being a weak performer and a weak improver is worrisome as the 2012 EPI and Trend EPI expose persistent gaps in environmental governance and management over time.

In general, all countries show improvements related to the Environmental Health objective. However, trends linked to Ecosystem Vitality are not as positive (except for Azerbaijan who has improved both related to air pollution and climate change). Particularly ‘water resources (ecosystem effects)’ shows a steep negative trend for all six countries (also for the “top improver” Azerbaijan), despite the fact that water (effects on human health) performance in general is improving.

⁵⁷ Environmental Health: Environmental burden of disease; Water (effects on human health); and Air (effects on human Health) and Ecosystem Vitality: Air Pollution (ecosystem effects); Water resources (ecosystem effects); Biodiversity and Habitat; Forestry; Fisheries; Agriculture; and Climate Change (Yale University and Columbia University, 2012).

Figure 2. Comparison of the 2012 Environmental Performance Index Score (0-100) for the six countries Belarus, Georgia, Moldova, Ukraine, Azerbaijan and Armenia.



Source: Authors, based on Yale and Columbia Universities <http://epi.yale.edu/epi2012/rankings>

The countries are making progress on at least some of the challenges they face. It appears that the highest policy priorities are related to human health and improved access to water and sanitation. The less obvious and more long-term environmental challenges, related to ecosystem vitality, receive in general less attention (except for Azerbaijan). As mentioned above, the state of the water resources is declining alarmingly for all countries. Water resources are also particularly vulnerable to climate change. This means that if the environmental governance, and particularly water governance, is not improving, the state of the water resources and other ecosystems is likely to continue to deteriorate, with consequences on economic growth, public health, resilience, agriculture and energy.

5. Institutional needs for improved environmental management⁵⁸

5.1 Major obstacles for enhancing the environmental agenda

The EaP countries are still struggling with the Soviet legacy of environmental mismanagement, silo-thinking, weak accountability mechanisms, and low levels of regulatory capacity, government effectiveness, and rule of law. Even in the cases when the legislative and policy frameworks are of adequate quality, implementation is lacking. Weak governance and institutional capacity combined with low priority given to environmental and climate change concerns, contribute to the lack of implementation. Incorporating environmental and climate change aspects, green growth concepts, and a mix of economic, administrative, and information policy instruments are needed to put more efforts into implementation.

The EaP countries attempt to move away from narrow sector-focused strategies that have resulted in a fragmented policy framework, unclear priorities and dispersed public budgets. The use of medium-term expenditure frameworks (MTEF) is a way to improve policy coherence and improve the linkages between planning and financing. However, the budget process still often lack clear environmental priorities, indicating a very weak orientation of environmental planning, and the allocation of budgetary resources to environmental ministries

⁵⁸ If nothing else is stated, the section is based on OECD (2012a).

remains modest. The levels of environmental expenditures in the EaP countries are low compared to the averages of Central European countries at the peak of their EU-approximation efforts. For instance the Czech Republic invested on average 2.2% of GDP in environmental projects in the mid-1990s. As a comparison, the reported public environmentally related expenditures in Belarus is 0.53%; in Georgia 0.01%; in Moldova 0.37%; and in Ukraine 0.017% of GDP. The low level of environmental spending is problematic, and currently the EaP countries are relying heavily on external (mainly project focused) financial support for tackling the environmental problems. Multilateral development banks are the predominant source of investments financing.

According to the OECD, the public authorities, particularly the environmental authorities, will continue to be central for promoting the environmental agenda and green growth in the EaP countries. The lack of political clout at the environmental authorities is a continued barrier to enhanced environmental performance.

Although government wide (e.g. investment policies) as well as sectors policies (water, energy, transportation, etc.) could better integrate environment and climate change concerns, green growth issues in development strategies are relatively present. However, a continuous absence and underuse of tools such as policy-level Strategic Environmental Assessment (SEA) maintains the risk of set-backs.⁵⁹

Market based instruments are still ineffective and require a holistic reform. When pollution and natural resource use are not priced there are low incentives to improve resource efficiency or pursue green, clean or low-carbon investments. Furthermore, costs related to environmental health or deteriorating ecosystem services are not adequately considered in the EaP countries, and environmentally related investments are not sufficient. The cost of policy inaction may be substantial.

The barriers to develop low-carbon infrastructure, such as renewable energy, include high upfront capital costs, sometimes low-returns and long investment timelines, and difficulties to access loans. In combination with weak or partial environmental policy that fails to sufficiently price pollution and perverse incentives (such as fossil fuel subsidies), the competitiveness of ‘clean’ infrastructure is distorted and development of polluting infrastructure projects is favoured.⁶⁰

Many environmental authorities face contradictory signals with may not promote environmental improvements or promotion of green growth. One example of this is that the environmental authorities in Azerbaijan, Belarus and Ukraine have combined responsibilities for environmental protection and natural resource extraction, which may contribute to a “development first – clean-up later” mind set.

5.2 Opportunities for greening the growth

There are plenty of opportunities for greening the growth in the EaP countries, and private sector support for green growth is increasing. However, coherent or comprehensive strategies for greening the economies are scarce⁶¹. Despite the lack of nation-wide green-growth strategies, many of the anti-crisis programmes that were developed 2008-2009 include elements related to green growth (Table 2). Three elements of green growth enjoy long-term government priority in many EaP countries: energy efficiency, renewable energy and sustainable agriculture. Environmental infrastructure investments, particularly water supply

⁵⁹ Only Armenia has ratified the Kiev Protocol on Strategic Environmental Assessment (SEA)

⁶⁰ OECD (2012c)

⁶¹ Moldova initiated development of low-carbon strategy in 2010.

and sanitation, are also considered to be a crucial element of economic development. Waste management is mentioned as a priority in Moldova. At the same time, the recovery programmes also include investments with potentially high environmental impacts, such as road infrastructure.

Table 2. Presence of green growth aspects in anti-crisis programmes in EaP countries

Country	Energy efficiency	Renewable energy	Transport Infrastructure	Sustainable agriculture	Water supply & sanitation	Waste management	Cleaner production
Armenia	Yes	Yes	Yes	Not explicit	Yes	--	--
Azerbaijan	--	--	--	Not explicit	--	--	--
Belarus	Yes	--	Yes	Yes	--	--	Yes
Georgia	--	Yes	Yes	Yes	--	--	--
Moldova	Yes	Yes	Yes	Yes	Yes	--	Yes
Ukraine	Yes	Yes	--	Not explicit	--	--	--

Source: OECD (2012a)

There are large opportunities for energy efficiency improvements (except for Azerbaijan where the potential is already exploited due to pricing reforms⁶²), especially related to district heating. Some 40 municipalities in the region, including the capital cities of Georgia, Moldova and Ukraine, are members of the European Covenant of Mayors (a mechanism to support sustainable energy policies at local level). It appears that energy efficiency and environmental infrastructure development are the main concerns at the local level.

Overall, there is an upward trend in energy pricing in the region. The highest tariffs are found in Moldova and Georgia; the latter has a tariff level close to the lowest of the EU member states.

Both related to heating and water supply, the tariffs are below cost recovery. If only fixed tariffs are applied, it does not promote resource efficiency. A tariff reform is needed, where cost recovery and comprehensive affordability (combining all sectors with user charges) are given consideration. Pricing policies are strengthened by metering. Moldova has installed meters in apartment blocks for heating, and is introducing water metering. This has reduced the revenues, putting the utilities in a precarious financial situation.

The polluter-pays principle could be further utilised. Penalties, fines or taxes provide price signals and convey that there are risks of non-compliance. However, the rate of uncollected charges can be high. In Georgia the payment evasion was as much as 97% in 2003. This administrative inefficiency is likely what led to the elimination of pollution taxes in 2005.

Sustainable agriculture is identified as providing opportunities for green job creation. The increasing water scarcity provides a challenge for the sector, and resource efficiency measures (both water and energy) are needed. Some governments in the region consider introducing economic instruments to improve the water resource management in agriculture. Subsidies need to be reviewed, e.g. subsidies for fossil fuels, water use and agricultural production. Organic agriculture is already increasing rapidly in Armenia, Moldova and Ukraine, where it contributes with an increasing share of agriculture-related incomes. Studies show that organic farming provides more jobs per unit of production and sales than conventional farms, because it requires smaller-scale farms and is less reliant on machines. The prospects for green job creation in the forestry sector are more mixed. However, forestry provides steady employments. Afforestation and carbon sequestration will provide additional jobs in the coming decades.

⁶² This may well be the reason for the significant improvements in Azerbaijan related to air pollution and climate change (emission of greenhouse gases).

5.3 Needs for institutional reforms for EU approximation

Enhancing the environmental agenda is easier to accomplish if the environmental and climate change aspects are strongly *linked to top-priority immediate development objectives* in the countries. These could be increased growth, productivity and efficiency, upgrading municipal services, maintain or improving the export potential, diversification of the economic structure, energy security, or job creation. The EU approximation is also a strong driver for change. There need to be sufficient evidence of the short- and long-term benefits of sustainable environmental management. This type of evidence could be generated for instance by utilising tools in support of economic and social analysis of environmental policies. According to the OECD, the most obvious action would be to introduce a government-wide adoption of SEA and extending it to budgetary programmes.

Environmental and climate change aspects are crucial to integrate in development and investment plans. When environmental and climate change aspects are at the core of the development strategies, the *finance and economy ministries should have a leading role*, supported by the environmental ministries. The environmental ministries, on the other hand, need to have a stronger presence in the policy debate and budgetary negotiations in their countries.

Another key reform relates to improving different governance aspects: Policy coherence needs to be improved, and policy inconsistencies identified and avoided. Furthermore, the institutional constraints and budget fragmentation should be addressed. The OECD stresses that, above all, the EaP countries should “avoid engaging in yet another wave of strategic papers development”, but rather focus on *policy implementation*.⁶³

Implementation could be improved when utilising the right mix of policy instruments⁶⁴. For instance economic policy instruments, like correcting *price signals*, are important, to put a price on pollution and resource use, and abolish perverse subsidies such as fossil fuel subsidies. Here, distribution effects will be important to assess. Correcting the price signals will help to reduce pollution and enhance resource efficiency, for instance related to improving water- and energy productivity and reducing material flows through recycling and other waste-minimization measures.

These economic policy instruments should be combined with administrative and information policy instruments to be effective. *Administrative instruments*, such as rules and regulation, and compliance monitoring, are crucial. *Information-based instruments* could also be helpful, particularly in the largest industrialised countries with a wealthier population. For instance, Lviv oblast local environmental authority (Ukraine) is supported by OECD EAP Task Force to collect public registers of corporate environmental reports and conduct and publish environmental ratings of companies. These types of instruments are

Participation of well-informed and empowered stakeholders is another governance mechanism that could enhance implementation. The environmental authorities could enhance the cooperation with environmental civil society organisation (CSO) or other non-governmental organisation (NGO), and use them as their allies to promote environmental mainstreaming as well as utilising their ‘watchdog’ role and agents of change at the local level. The environmental NGO community is sufficiently strong to influence policy development and implementation. Participation should also relate to coordinate and consult with other government agencies, as it is often sector ministries that are responsible for environmental improvements in different sectors.

⁶³ OECD (2012a), p.148

⁶⁴ The optimal choice of the policy instruments will depend on national circumstances.

Transparency is another key governance aspect, for instance related to how resource rents are collected and spent. The resource rents should be transformed into other forms of capital and contribute to long-term sustainable development. Where revenue earmarking through specialised funds exists, most environmental revenue is used to support current expenditure rather than investments. In 2006-2009, of the four countries that had earmarked environmental funds (Belarus, the Kyrgyz Republic, Moldova and Uzbekistan), only Belarus provided more support for investments from their environmental funds than for current expenditure.

6. Conclusions

From this brief review it can be concluded that the EaP countries all suffer from extensive environmental challenges, with grave effects on human health, ecosystem vitality and long-term sustainable development. Especially the water resources (quality and quantity) are deteriorating rapidly. The overarching objectives of the Eastern Partnership are directly and indirectly linked to environmental and climate change performance in the partner countries and the EU integration process is an important driving force to improve the environmental performance in EaP partner countries.

The Eastern Partnership road map clearly states that the overall goal is to support regulatory approximation, strengthen administrative capacities and implementation, and implement multilateral environmental agreements. The countries should strive for higher level of environmental protection including biodiversity and ecosystems, improved environmental governance, resource efficiency and supporting the necessary infrastructure investments. The road map also highlights the need to move towards a low-carbon development and comply with a comprehensive global climate regime as well as to improve resilience to climate change at the national and regional level.⁶⁵

Although the countries show improvements on at least some of the environmental challenges they face, especially related to environmental health, the lack of improvements in other areas is worrisome. Climate change and water resources remain great challenges to be addressed. Infrastructures investments and associated tariff reforms are needed to reduce pollution and increase resource efficiency related to energy and water. These are thus relevant and important measures to tackle some of the environmental challenges.

The quantity of the water resources is a major and growing problem in all countries. Allocation principles (between water-using sectors, geographic areas, and segments of society) should be further developed and incentives for water-use efficiency identified and implemented, using a mix of policy instruments. When water resources are shared, water management strategies and plans ought to be developed jointly by the riparian states, and concepts (such as ‘sustainable and equitable use’) should be discussed and agreed upon. Regional cooperation could also be pursued to share experiences and lessons on different themes (such as demand management).

There has been progress in Belarus, Georgia, Moldova and Ukraine in terms of policies and legislation. The key issue is the lack of implementation. The lack of implementation can partly be traced to weak governance, low priority given to environmental aspects, and institutional weaknesses. Factors related to corruption, impartiality and government effectiveness will be of key focus in all four countries.

⁶⁵ EU (2012c)

Good governance has the potential to regulate and enforce environmentally sound policies and steer individuals and societies into productive outcomes and sustainable use of the environmental resources. Therefore, improving governance and institutional capacities could provide important synergies to the other more targeted infrastructure investment support. It could provide incentives for 'greener' decisions and improve implementation of environmental policies, which would be positive also in terms of the EU approximation process.

All countries but Belarus show improvements in *governance* but are still weak compared to the OECD or EU standards. Key governance aspects relate to improving cross-sectoral coordination and policy coherency, enhanced accountability, including transparency and meaningful participation. For instance, the private sector and civil society could be invited to participate in the design of policies and policy instruments, but also be involved in monitoring of compliance. The 'watch-dog' function of CSO could be promoted in order to help improve accountability. Improving rule of law and control of corruption are important means to enhance implementation and enforcement. These are important instruments that will help weaker constituencies file complaints and demand environmental improvements. However, each country differs and support to specific governance reforms will depend on the country context.

Although important, improving governance is not the sole solution. Environment and climate change also need to be *political and economic priorities* given adequate budget allocations and providing incentives for environmental improvements. Areas of importance include integration of environmental and climate change concerns in development and investment plans, increasing budget allocations to environmental protection, improved capacities for permitting/licencing/ monitoring and promote the green growth agenda are all examples of areas that need to be improved.

Environmental authorities will continue to be central for promoting the environmental agenda, and their role and capacities need to be strengthened. However, in order to fully integrate environmental and climate change aspects into core development priorities, also other key ministries (e.g. finance, economy, planning) are playing a crucial role. Strong evidence in support to benefits of environmental protection and greening the economy will help environmental authorities to get support. In order to generate such evidence, environmental authorities may need to start utilising tools for economic and social analysis of policies and reform processes. One obvious action is to introduce a government-wide adoption of SEA and utilise it as a decision-making tool.

6.1 Issues of Sida to consider

This study is based on assessment reports, progress reports and scientific evidence. Providing realistic and feasible suggestions of possible Sida-financed support would require a stronger sense of the circumstances, opportunities and particularities in the partner countries. Therefore, the ideas presented in this section should be seen as a basis for a discussion with Sida, particularly the field staff, on possible ways that the Swedish support could be designed in order to enhance the environmental agenda.

Water resources (quantity and quality) and climate change (mitigation and adaptation) are identified as two key environmental challenges. Combining infrastructure investment support with institutional support, such as tariff reforms, metering, improving billing and collection, controlling and meeting demand, are important means to reduce pollution to water and air and increase resource efficiency.

- This type of support could be combined with support to integrated water resource management and/or transboundary water resource management, especially targeting water allocation, sustainable and equitable use, and demand management activities (including pricing).

Complementing that type of support would be support to improving the capacities of environmental authorities. This appears to be crucial to improve the environmental performance in the countries. Some examples of capacities that need to be improved include:

- Issuing of permits and licenses, enforcing legislation, monitoring compliance and issue sanctions for non-compliance;
- Improving cross-sectoral coordination and policy coherency, for instance including environmental and climate change concerns into national development and investment plans;
- In collaboration with civil society and the private sector, develop policy instruments (economic, administrative and information) to incentivise green, clean and low-carbon infrastructure and efficient use of resources;
- Related to the previous bullet point; support introduction of elements of Environmental Fiscal Reforms (abolishing perverse subsidies such as fossil fuel subsidies, taxing “environmental bads” and subsidising “environmental goods”), to provide economic incentives for environmental improvements;
- Provide evidence of the importance of environmental and climate change aspects and take part in the national debate and budget negotiations;
- Support government-wide adoption of SEAs for policies and reform processes

Support to transparency, participation and accountability also appear to be crucial aspects of policy implementation. Some examples related to this area include:

- Support to environmental CSOs or NGOs, to improve their watch-dog role and collaborate with environmental authorities to improve monitoring;
- Capacity development of CSOs/NGOs, to increase ability to participate meaningfully in policy development, public debate, understand and act on the information that is provided.
- Support to improved transparency, for instance on how resource rents are collected and used. The Extractive Industries Transparency Initiative (EITI) plays an important role.
- Finding ways of improving corporate social responsibility, for instance through participation in the UN Global Compact could be an alternative way to enhance issues related to human rights, governance, and environmental performance.

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Annex 1: Instructions (in Swedish)

Att t o m 16 november med några avstämningar utarbeta ett skriftligt underlag om följande:

- a) översikt över huvudsakliga miljö- och klimatutmaningar i regionen (kortfattat) och ländernas prioritering av miljö/klimat/naturresurs/energiområdena (trender); (kap 2 & 3)
- b) vilka miljö och klimatdelar som östliga partnerskapet, EU tillnärmningsprocessen, och EUs handelsavtal omfattar och som är av särskild relevans för Sverige; (kap 4)
- c) behov av institutionella reformer för att kunna genomföra Öst-P och EU tillnärmningen- inklusive regelverk och dess genomförande; (kap 5)
- d) ge förslag till Sida om angreppssätt – gärna innovativa – vad gäller hur hantera miljö och klimatproblematiken bäst i öst
- e) regionala samarbetsorganisationer inom miljö och klimat (även om Indevelop i viss utsträckning gör detta). (finns ej med för tillfället)
- f) bedöma vilka synergier/samverkan det finns mellan institutionellt samarbete, miljöinvesteringar och civila samhället (de tre huvudsakliga inriktningsområdena för miljösamarbetet i öst) och om detta bör stärkas och i så fall hur. (kap 6)

Annex 2: Worldwide governance indicators by country

Worldwide Governance Indicators (WGI) project reports aggregate and individual governance indicators for 215 economies over the period 1996-2011, for six dimensions of governance:

- Voice and accountability
- Political stability and absence of violence
- Government effectiveness
- Regulatory quality
- Rule of law
- Control of corruption

Voice and accountability: Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

Political Stability and Absence of Violence/Terrorism: Reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

Government effectiveness: Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

Regulatory quality: Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Rule of law: Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

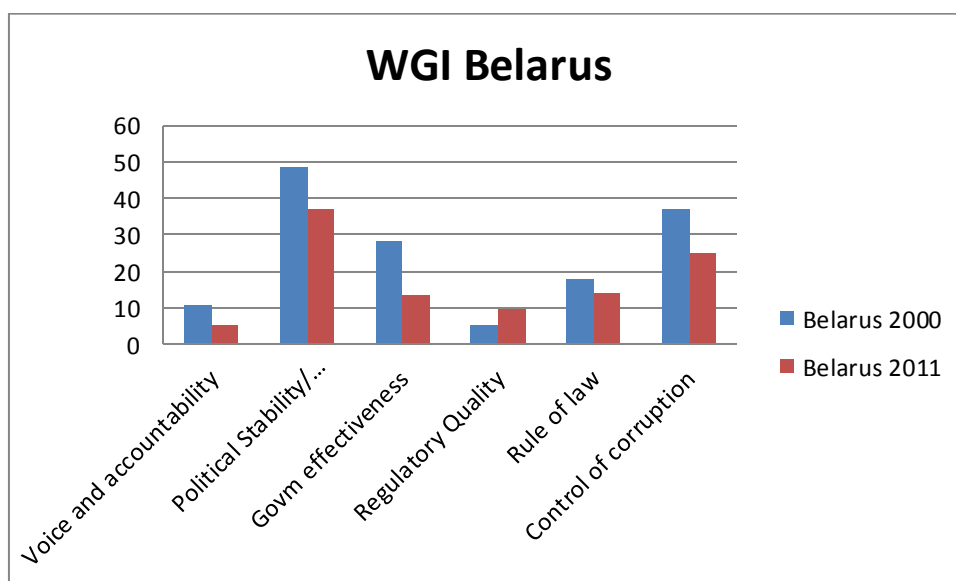
Control of corruption: Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

The indicators build on statistical compilations of responses from a large number of stakeholders, and involve uncertainties why the data should be treated with care. The WGI measures are useful as a tool for a broad cross-country comparison and for evaluating broad trends over time. However, the data is not intended to be used for formulating specific governance reforms in a particular country context. Such reforms need to be informed by much more detailed and country specific information.

Source: Kaufmann D., A. Kraay, and M. Mastruzzi (2010), The Worldwide Governance Indicators: Methodology and Analytical Issues.

More information can be found on: <http://info.worldbank.org/governance/wgi/>

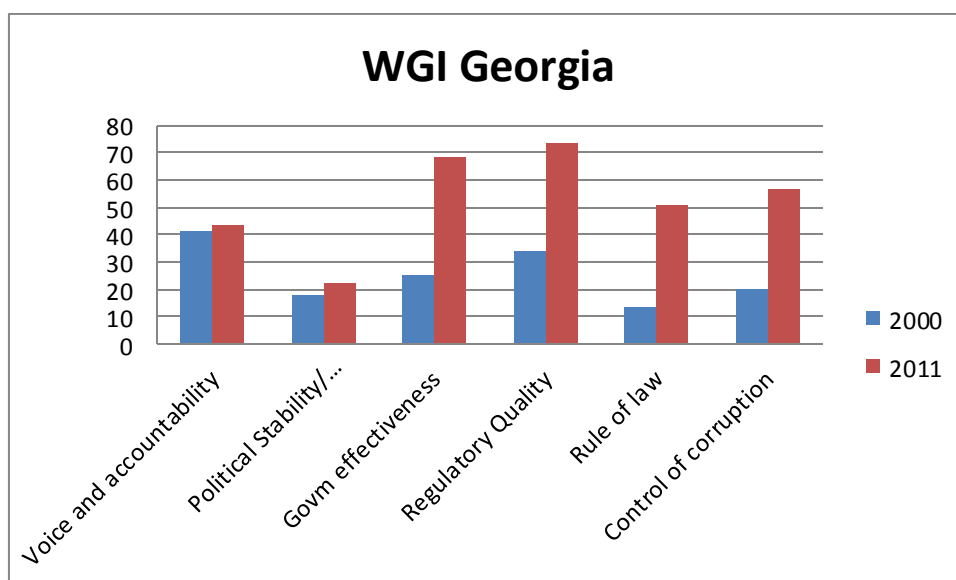
Figure A2-1. Worldwide Governance Indicators for Belarus year 2000 and 2011



Source: Authors, based on Kaufmann et al., 2010. Updated data from 2011 collected at WB WGI website http://info.worldbank.org/governance/wgi/sc_country.asp (accessed 25 October 2012)

The governance indicators for *Belarus* are not showing any improvements, but on the contrary, significant worsening. ‘Political stability’ and ‘control of corruption’, although declining, are now on par with the other countries – except Georgia who scores significantly higher than the rest.

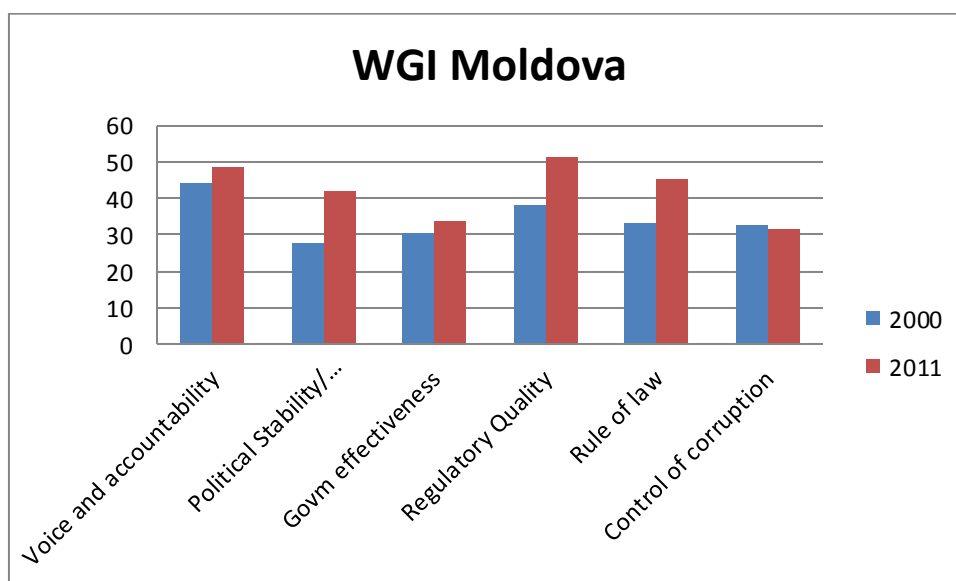
Figure A2-2. Worldwide Governance Indicators for Georgia year 2000 and 2011



Source: Authors, based on Kaufmann et al., 2010. Updated data from 2011 collected at WB WGI website http://info.worldbank.org/governance/wgi/sc_country.asp (accessed 25 October 2012)

Georgia has made strong improvements related to ‘government effectiveness’, ‘regulatory quality’, ‘rule of law’, and ‘control of corruption’. Indicators for ‘voice and accountability’ and ‘political stability and absence of violence and terrorism’ have been stable; the latter on a quite low score. This is probably related to the internal and external conflicts.

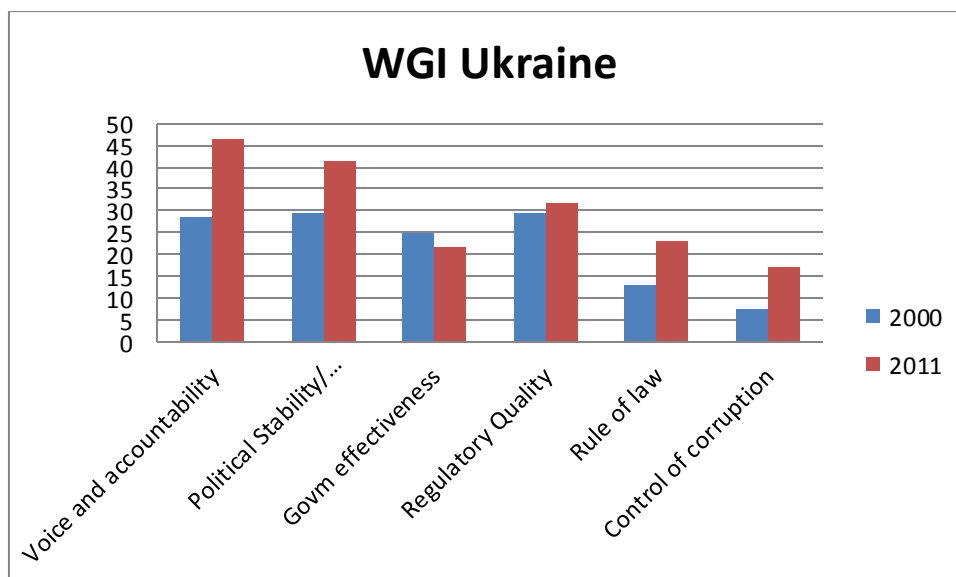
Figure A2-3. Worldwide Governance Indicators for Moldova year 2000 and 2011



Source: Authors, based on Kaufmann et al., 2010. Updated data from 2011 collected at WB WGI website http://info.worldbank.org/governance/wgi/sc_country.asp (accessed 25 October 2012)

Governance indicators for *Moldova* show modest improvements since 2000 on all fronts except 'Control of corruption'.

Figure A2-4. Worldwide Governance Indicators for Ukraine year 2000 and 2011



Source: Authors, based on Kaufmann et al., 2010. Updated data from 2011 collected at WB WGI website http://info.worldbank.org/governance/wgi/sc_country.asp (accessed 25 October 2012)

Ukraine has improved on 'voice and accountability', 'political stability and absence of violence and terrorism' since 2000. Also indicators related to 'rule of law' and 'control of corruption' have improved, albeit from a very low point of departure.

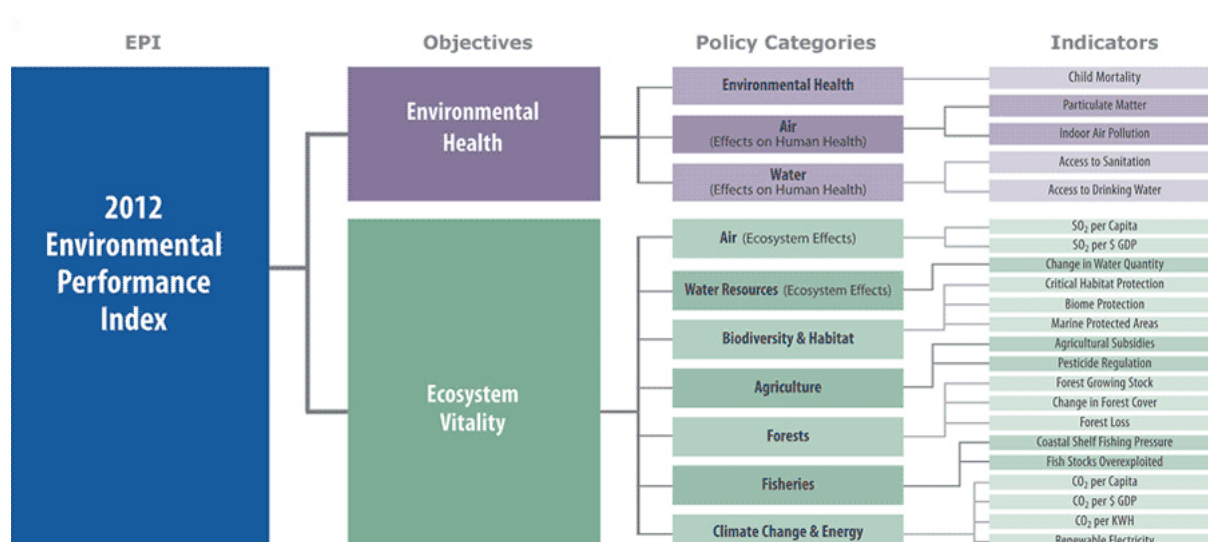
Annex 3: 2012 EPI and Trends EPI

Environmental Performance Index (EPI) is developed by Yale Center for Environmental Law & Policy, and the Center for International Earth Science Information Network (CIESIN), Columbia University, in collaboration with The World Economic Forum and the Joint Research Centre (JRC), European Commission.

EPI ranks countries on performance indicators tracked across policy categories that cover both environmental public health and ecosystem vitality (see Figure A3-1). The website <http://epi.yale.edu/> provides information on country rankings, individual country profiles (Figures A3-2 to A3-6), and peer-group comparisons (Figure A3-7).

The 132 countries assessed are ranked, where 1 is the highest rank (best performer) and 132 is the lowest rank (worst performer). The environmental performance of the countries included in the assessment, is scored (1 to 100), where score 1 indicates the worst environmental score and score 100 is the best).

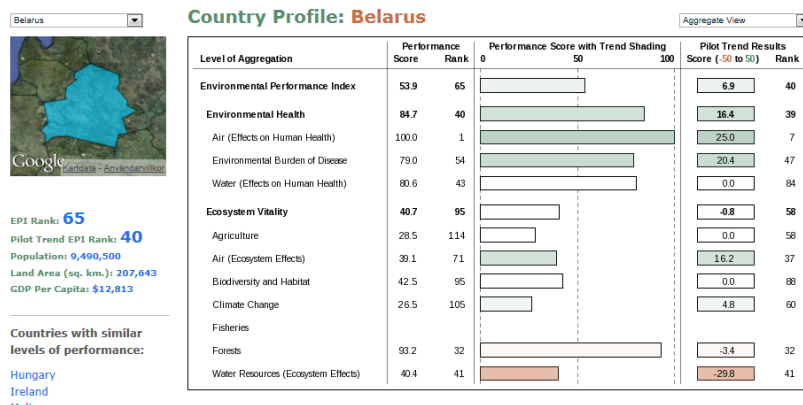
Figure A3-1. 2012 EPI policy objectives, policy categories, and indicators.



Below, the country profiles for Belarus, Georgia, Moldova, Ukraine and Azerbaijan are illustrated and summarised.

Belarus is a modest performer, modest improvements. Improvements on Environmental Health. Air (both health and ecosystem effects) have improved. Belarus has a strong decline in the situation for water resources (ecosystem effects).

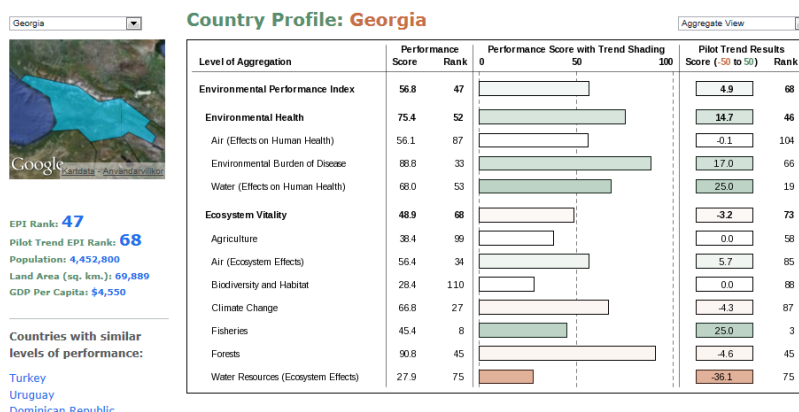
Figure A3-2: Environmental Performance Index, Country Profile Belarus



Source: <http://epi.yale.edu/epi2012/countryprofiles>

Georgia scores as modest performer, Trend: little or no change. There are improvements in Environmental health, especially environmental burden of disease and water (effects on health). Worsened score for Ecosystem Vitality, really bad on water resources (ecosystem effects), negative on forests and CC. Positive for Fisheries.

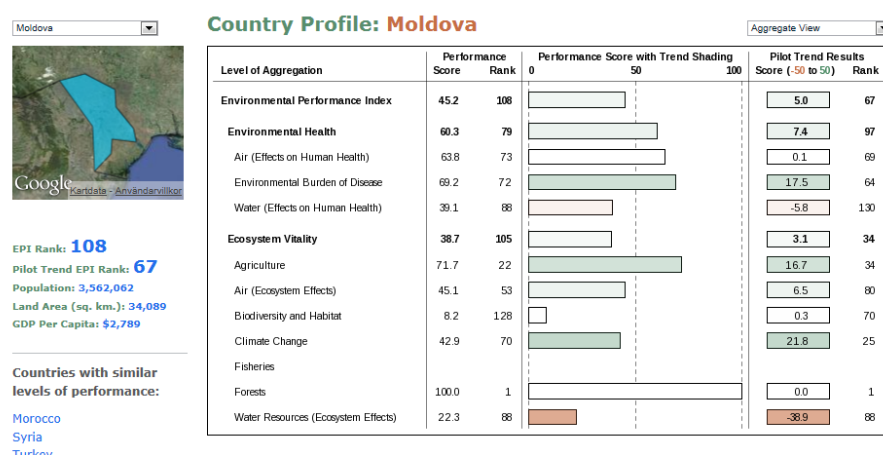
Figure A3-3: Environmental Performance Index, Country Profile Georgia



Source: <http://epi.yale.edu/epi2012/countryprofiles>

Moldova is a 'Weaker performer' with 'little or no change' the last decade. As the other countries, a significant deterioration of the water resources (ecosystem effects). Improvements in Environmental Health, especially environmental burden of disease. Ecosystem vitality: Agriculture and CC improved.

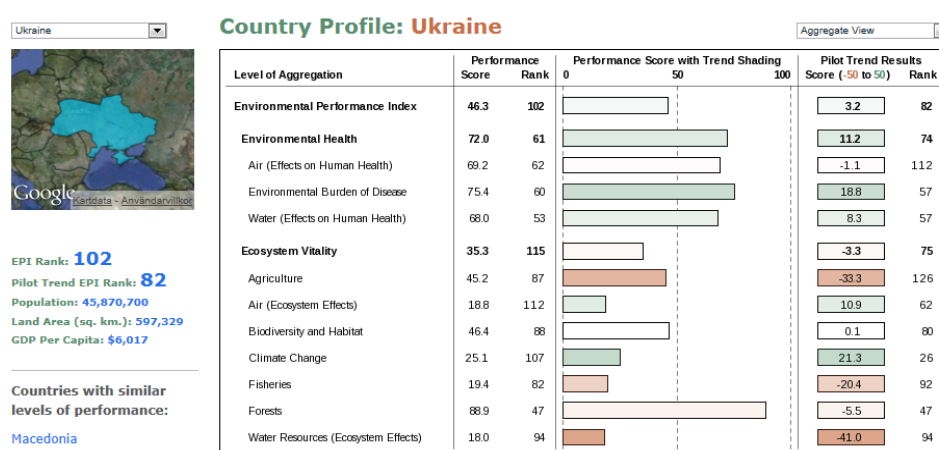
Figure A3-4: Environmental Performance Index, Country Profile Moldova



Source: <http://epi.yale.edu/epi2012/countryprofiles>

Ukraine is a 'weaker performer' with 'little or no change' the last decade. Improved Environmental Health, especially burden of disease and water (human health). In general worsened situation on ecosystem vitality, especially water resources (ecosystem effects), and agriculture.

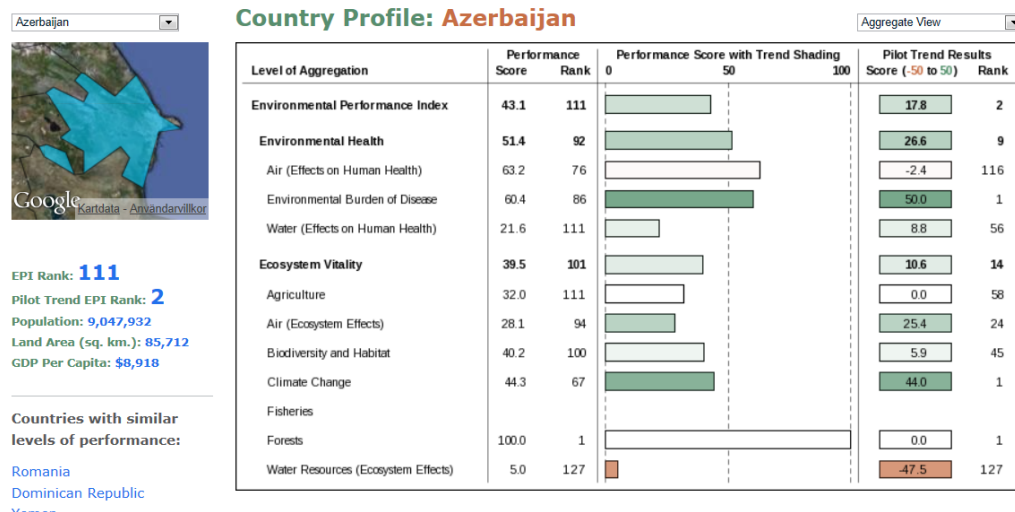
Figure A3-5: Environmental Performance Index, Country Profile Ukraine



Source: <http://epi.yale.edu/epi2012/countryprofiles>

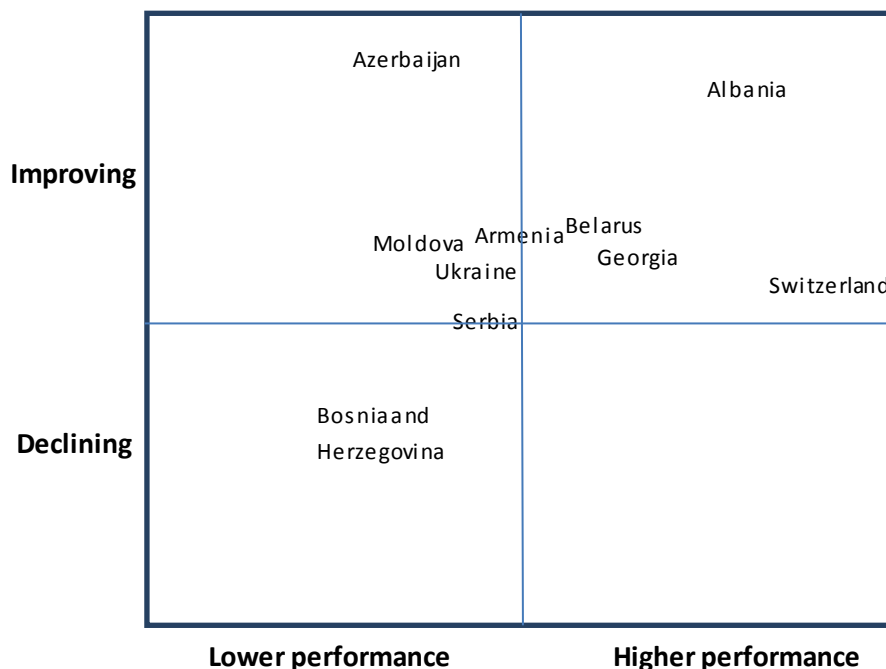
Azerbaijan is a ‘weaker performer’ but a very strong improver (second best in the world after Lithuania). Strong improvements related to environmental burden of disease) and climate change, also improvements related to air emissions (ecosystem effects). Water resources are the only negative trend, although it is a big decline.

Figure A3-6: Environmental Performance Index, Country Profile Azerbaijan



Source: <http://epi.yale.edu/epi2012/countryprofiles>

Figure A3-7: EPI performance, score vs. trend score



Source: <http://epi.yale.edu/epi2012/countryprofiles>

Annex 4: Environmental burden of disease WHO Europe

The table below is an annex to the WHO/Europe press release issued on 13 June 2007, taken from WHO (2007), 'Country profiles of the environmental burden of disease'. The report indicates that well-tested environmental health interventions could reduce total deaths in the countries of the WHO European Region by almost 20%. The range of disability-adjusted years of life lost (DALYs) varies up to fourfold across the WHO European Region. The lowest levels of risk are found in northern and western European countries, while high risk levels are reported for some countries of Eastern Europe. This may be due to a combination of traditional (such as water) and modern (such as air pollution and chemicals) environmental risk factors. Countries are ranked by the size of the portion of death and disability due to the environment.

Subregion	Country	DALYs due to environmental factors/1000 capita	% DALYs (burden of disease) due to environmental factors	Estimated deaths due to environmental factors
EurA	Iceland	13.7	14%	317
EurA	Israel	14.1	13%	5,594
EurA	Switzerland	14.6	13%	9,543
EurA	Sweden	15.1	14%	14,468
EurA	Monaco	15.5	14%	42
EurA	Malta	15.6	14%	490
EurA	Netherlands	15.8	14%	21,830
EurA	Italy	16.0	14%	90,809
EurA	Norway	16.1	14%	7,502
EurA	San Marino	16.3	15%	44
EurA	Austria	16.3	14%	11,424
EurA	Germany	17.1	14%	132,169
EurA	France	17.2	14%	80,107
EurA	Spain	17.3	14%	58,495
EurA	Cyprus	17.5	13%	1,363
EurA	Andorra	17.6	14%	91
EurA	Ireland	17.8	14%	5,286
EurA	Luxembourg	18.0	15%	574
EurA	United Kingdom	18.1	14%	101,335
EurA	Belgium	18.7	14%	17,032
EurA	Denmark	19.1	14%	9,235
EurA	Finland	19.1	15%	8,167
EurA	Portugal	19.7	14%	15,445
EurA	Slovenia	19.8	14%	2,926
EurA	Greece	20.0	16%	19,966
EurA	Czech Republic	21.4	15%	17,606
EurA	Croatia	23.0	14%	8,374
EurB	The FYR of Macedonia	23.7	15%	3,137
EurB	Slovakia	25.1	16%	9,315
EurB	Poland	25.2	17%	66,113
EurB	Bosnia and Herzegovina	25.6	16%	6,172
EurB	Armenia	26.3	16%	4,712
EurB	Serbia-Montenegro	26.8	15%	21,023

EurB	Georgia	27.1	16%	10,874
EurC	Hungary	28.0	16%	21,740
EurB	Bulgaria	28.6	16%	18,469
EurB	Albania	29.9	19%	4,425
EurB	Uzbekistan	30.1	18%	33,479
EurB	Turkey	30.4	19%	86,712
EurB	Romania	30.8	17%	46,928
EurC	Lithuania	33.7	19%	8,332
EurC	Republic of Moldova	34.5	17%	8,952
EurB	Azerbaijan	35.7	19%	12,927
EurC	Latvia	38.3	18%	6,492
EurC	Estonia	38.7	20%	3,732
EurC	Ukraine	43.2	19%	155,230
EurC	Belarus	43.4	20%	29,712
EurB	Kyrgyzstan	46.2	21%	9,706
EurB	Tajikistan	47.5	21%	12,021
EurB	Turkmenistan	48.5	22%	9,108
EurC	Kazakhstan	49.3	20%	39,274
EurC	Russian Federation	53.7	20%	493,116

More details can be found at World Health Organisation (WHO) website, country profiles of environmental burden of disease by WHO regions, WHO European Region (launched in 2007, accessed 26 October 2012):

http://www.who.int/quantifying_ehimpacts/national/countryprofile/regions/en/index.html

Pdf-document on environmental burden of disease at WHO Europe (accessed 26 October 2012):

http://www.who.int/quantifying_ehimpacts/eurocountryprofiles2004.pdf