



Serbia Environmental and Climate Impact Analysis ¹

February 29, 2008

Introduction

This Environmental and Climate Impact Analysis (ECA) has been written as an input to the planned revision of the Swedish cooperation strategy with Serbia. It is based on the thematic priority² Environment and Climate which includes four focus areas; (i) climate change adaptation, (ii) energy, (iii) environment and safety, and (iv) water. The purpose of the ECA is to summarize key environmental problems in Serbia and related challenges for poverty reduction, economic development and EU-accession.

To address these issues, the Environmental and Climate Impact Analysis includes five main questions:

1. *Which are the Key Environmental Problems, Opportunities and their Causes?*,
2. *What are the Effects of the Environmental Problems and Opportunities?*,
3. *What are Key Actors doing to manage the Environmental Problems and Opportunities?*,
4. *How and to what extent are the Responses to Environmental Problems and Opportunities implemented and followed up?*
5. *What are the implications for Swedish Development Cooperation?*

Collaboration on environmental protection and ensuring sustainable management of natural resources play important roles in Swedish development cooperation with Serbia. During the current strategy period 2004-2007 one aim has been to significantly increase cooperation on environmental issues. Swedish environment-related support, among other projects, include:

- Development of a National Strategy for Sustainable Development
- Capacity building project for the Ministry of Environmental Protection.
- Measures to reduce agricultural runoff into the Danube
- Investments for regional sanitary landfills in Serbia
- Development of local environmental action plans for a few municipalities in Serbia.

1. *Which are the Key Environmental Problems, Opportunities and their Causes?*

Many of Serbia's environmental problems are strongly related to its historic legacy of a centrally planned economy. A focus on heavy industrialization in combination with price controls and subsidies created inefficient and wasteful natural resources use. Key causes

¹ This Environmental and Climate Impact Analysis was written as a desk study, at the request of Sida's office in Belgrade (att: Björn Mossberg) by Daniel Slunge, Anders Ekbom and Emelie Dahlberg at the Environmental Economics Unit (EEU), Department of Economics, Göteborg University, as part of Sida-EEU's institutional collaboration on environmental economics and strategic environmental assessment. Comments received on an earlier draft are gratefully acknowledged. Further comments can be sent to anders.ekbom@economics.gu.se. The views expressed in this Environmental and Climate Impact Analysis are those of the authors and do not necessarily represent the views of Sida.

² The Swedish Government has set three thematic priorities for its development cooperation; Democracy and Human rights, Environment and Climate, and Gender equality and the role of women in development.

include low prices on energy and other natural resources and environmental services (waste management). Due to the economic collapse in the 1990s, necessary environmental investments to prevent pollution and build infrastructure for water, sanitation and solid waste, etc were not undertaken. Despite ongoing reform efforts, Serbia still faces with serious environmental problems.

The National Environment Strategy (NES; 2007) identifies the following key environmental problems in Serbia:

Air pollution is a serious problem with ambient concentrations of soot, particulate matter, SO₂ and NO_x exceeding allowed levels³. Facilities for energy generation and industrial plants with deficient air-cleaning technology are key sources of air pollution. Public electricity and heat production emit around 345,000 tons of SO₂ per year, which corresponds to 98% of total SO₂ emissions. NO_x emissions from public electricity and heat production amounts around 45,000 tons per year which also corresponds to nearly all of Serbia's NO_x emissions (UNECE, 2007). Emissions from burning of low quality coal in the power plants continue to cause major problems. Air pollution from transport, manufacturing industries and construction increases; noticeable, leaded petrol and high sulphur diesel continues to be used. The total annual damage caused by air pollution and greenhouse gas emissions is estimated to range between 1.8%-5.5% of GDP.

Water pollution: Untreated industrial and municipal wastewater, agricultural run-off, leachate from dumpsites and contamination from transports on rivers are the key sources of water pollution in Serbia. Even major towns in the country do not have municipal waste water treatment plants. Hence, only 5.3%⁴ of municipal wastewater is treated prior to discharge and nearly 90% of industrial wastewater is discharged untreated. The quality of drinking water is generally unsatisfactory. For instance, in central Serbia, more than 40% of samples were bacteriologically contaminated and did not satisfy the quality criteria. However, significant regional disparities exist: in Voivodina, the main problem is caused by physical and chemical pollution of drinking water. In central Serbia, bacterial contamination is the principal problem. In many areas groundwater can not be used for drinking purposes without previous treatment. The water supply network is old and inadequately maintained, with huge losses in the system. Most drinking water sources are not sufficiently protected from point and non-point source pollution. Hence there are significant health risks such as epidemic outbreaks.

Inadequate waste management and recycling: The general state of waste management, waste recycling and safe waste handling in Serbia is poor, reducing public health and causing environmental hazards. Only about 60% of municipal solid waste is collected in Serbia (around 2.2 million tons per year). The most acute problem regards hazardous waste (e.g. electronic appliances, chemicals), which is not separately collected but dumped without pretreatment on regular waste dumps. The industrial waste has increased from 68,000 tons in 1999 to 176,000 tons in 2006 (UNECE, 2007). There are no treatment plants or disposal sites for hazardous waste. Waste disposal sites do generally not meet the technical requirements of sanitary landfills. There are also hundreds of illegal dumpsites of different size in rural areas. The construction of regional sanitary landfills and the rehabilitation of the existing ones are among the priorities of the Ministry of environment.

³ In for example Obrenovac, Lazarevac, Belgrade, Kostolac, Pančevo, Bor, Smederevo, Novi Sad and Šabac

⁴ Report on Millennium Development Goals in Serbia, 2007

Soil degradation: Soil erosion processes (water and wind) are estimated to affect up to 80% of agricultural soil in Serbia leading to loss of agricultural productivity. Agricultural soil covers 66% of the total territory of the Republic of Serbia. Soil quality is also affected by use of polluted water for irrigation, inadequate use of fertilizers and pesticides and dumping of waste. Large land areas in the vicinity of industrial complexes⁵ are contaminated with various pollutants discharged from industrial facilities. The use of leaded fuel causes soil pollution along the major roads.

Unsustainable forest management: Forests and woodland cover 28 % of the total territory of Serbia. In 2005, around 51% of the forests were owned by the state. Although statistics reveal an increase in forest coverage of 0.4% per year 1990-2005 (World Bank, 2007), this does not imply sustainable management at all forest sites. Due to a relatively low road density in forest areas, accessible areas are frequently over harvested, while other areas are harvested with very low intensity. Forest quality and growth are threatened by many factors, including over-harvesting, illegal logging, forest fires, and pest infestations.

Loss of biodiversity: Due to a large variety of ecosystems, the former Yugoslavia was one of six European centers of biological diversity. Specifically, it hosted 39% of Europe's vascular plant species, 51% of its fish fauna, 74% of its bird fauna, and 68% of the mammals. In 2006, 642 species were reported as threatened in Serbia. 427 (66%) of these are plant species and 215 (34%) fauna (UNECE, 2007). The impacts of uncontrolled tourism, illegal construction activities, transport and forestry on nature protected areas are of particular concern⁶.

Climate change and climate variability: Assessments of projected climate change for the European sub-region, including Serbia, are generally uncertain. However, the mean annual temperatures are likely to increase more than the global mean and range between 2.2-5.1°C at the end of this century. The warming in South East Europe (SEE) region is likely to be largest in summers, annual precipitation is very likely to decrease in most of the region, and the risk of summer drought is likely to increase.

Further projected consequences of climate change in the SEE region include: (i) increased pressures on water resources, (ii) increased risk of flooding, erosion, and wetland loss; (iii) deterioration in soil quality and altered natural ecosystems, with loss of some habitats and potential loss of species; (iv) decreased productivity of commercial forests and increased risk of forest fire, especially in the southern regions; (v) negative effects on agriculture due to increased water stress; (vi) altered fisheries potential; and (vii) increased property damages, changing tourism potentials, human health effects (e.g. excess deaths attributable to heat, particularly among the aged population) (IPCC, 2007; ECE, 2007; UNECE, 2007).

Although *adaptation* is the primary objective for Serbia in relation to the projected effects of climate change and -variability outlined above, *mitigation* of greenhouse gas emissions is also a cause for concern. Serbia's CO₂ emissions per capita amount to 6.2 metric tons per year, which is more than twice than the average in its income group. Although Serbia has reduced its growth in CO₂ emissions during 1990-2003 with 31%⁷, the emissions are associated with

⁵ Bor, Pančevo, Novi Sad, Smederevo, Belgrade and Kragujevac

⁶ Government of the Republic of Serbia, 2006

⁷ It should be noted that this is a substantial achievement in comparison with countries in Serbia's income group, which on average have *increased* their emissions during the same period (World Bank, 2007).

substantial social costs; the damages are calculated to amount to 1.4% of Gross National Income (GNI), which corresponds to 370m.US\$ per year (World Bank, 2007).

General political and institutional causes of the environmental problems presented above include: (i) poor integration of environmental policies with economic and other sectoral policies, (ii) insufficient institutional capacity, (iii) ineffective monitoring and reporting systems, (iv) inefficient environmental enforcement due to legal gaps and inconsistencies, insufficient institutional capacity, poor inspection supervision and long court procedures, (v) insufficient and ineffective environmental financing, (vi) limited use of economic policy instruments, and (vii) low environmental awareness, insufficient environmental education and inadequate public participation in decision making (NES, 2007).

2. What are the Effects of the Environmental Problems and Opportunities?

Poverty and Environment Linkages: The high levels of air-pollution in some areas, poor drinking water quality and other environment related problems in Serbia have large negative health effects. Weak data makes it difficult to estimate the exact magnitude of these effects. The poorest groups in Serbian society tend to be the most affected by environmental problems⁸. The Roma-population, refugees and internally displaced persons who often live in settlements with poor housing standards are especially exposed. The cumulative effect of poor sanitation, lack of access to proper drinking water, proximity to waste dumps and air-pollution create unhygienic and health damaging livelihoods⁹.

The widespread use of leaded gasoline causes important negative health effects. Infants and young children are especially sensitive, even to low concentrations of lead. In April 2004, lead concentration in the ambient air in Belgrade was sometimes more than 5 times higher than the maximum allowed concentration¹⁰.

Land degradation, resulting from overgrazing and deforestation, likely worsens rural poverty, especially in Southern Serbia, since poor people in this region are highly dependent on land and other local natural resources. As a consequence of increasing of energy prices, rural poor are likely to increase their use of wood fuel, thereby increasing deforestation.¹¹ Serbia is moderately exposed to earthquakes and flood risks. The poor are particularly exposed due to poor housing construction and the fact that many settlements are situated on river banks.

Key linkages between environmental problems and poverty are identified in the PRSP from 2003. The national health care strategy recognizes the state of the environment as a specific challenge¹². The first Progress Report on the implementation of the PRS concludes that “investments in water supply facilities, wastewater treatment plants and environmental hotspot clean-up programs have had a direct impact on poverty reduction. Indirectly, such activities have also contributed to the employment of a number of semi qualified, poorer workers”¹³. In the second Progress Report from 2007, this is still a challenge. Poor citizens typically live in inadequate housing conditions with relatively low access to public services

⁸ Report on Millennium Development Goals in Serbia, 2007

⁹ World Bank, 2003 and Aleksić, 2006

¹⁰ Government of the Republic of Serbia, 2006

¹¹ World Bank, 2003

¹² Aleksić, 2006

¹³ Government of the Republic of Serbia, 2005

such as safe drinking water, electricity, heating, connection to the sewage network, waste disposal etc UNECE, 2007.

Economic growth, Environment and Climate Change: The severe environmental problems in Serbia described above are also signs of economic inefficiency. Costs that should be born by producers are via different forms of pollution imposed on other actors in the economy causing losses in welfare. The aggregate cost of environmental degradation is estimated to range between 4-13% of GDP. Three major environmental problems account for the bulk of these costs: air-pollution 53%, water pollution 22% and inadequate waste handling 11%¹⁴.

After the economic collapse in the 1990s, average annual GDP growth has been above 5 % between 2001 and 2006. In order to decouple economic growth from increased energy use and pollution, Serbia will have to implement a number of different environmental policy instruments. These policy instruments need to be sufficiently powerful to change the incentive structures in the economy in a way that favor pollution abatement, energy conservation and sound natural resource use. The ongoing transition of the Serbian economy to a market economy, involving a process of large scale privatization and an increasing number of economic actors, underlines the importance of creating an institutional framework with incentive structures that favors sustainable natural resources management.

An important issue related to the local air pollution problems and CO₂ emissions is the unsustainable and wasteful use of the country's energy resources. The cost of net depletion of Serbia's energy resources is reported to amount to 2.4% of GNI, which corresponds to 630m US\$ per year (World Bank, 2007).

The polluter pays principle (PPP) has been given legal force through the Law on Environmental Protection. The NES and the Environmental Performance Review (UNECE, 2007), respectively, include rather detailed and good descriptions of actual and potential policy instruments that can be used. However, even though many of these policy instruments are likely to improve overall economic efficiency, they also imply difficult political challenges in the short run.

One example from the energy sector can illustrate such challenges. Artificially low energy prices, due to subsidies and distorting price controls, have resulted in Serbia using approximately six times more energy per product unit than average among EU countries¹⁵. Energy efficiency is low in all sectors and electricity consumption of household and industry is well above many other countries in South Eastern Europe.

Despite some progress in phasing out subsidies and price liberalization¹⁶, prices for heating, electricity, coal, gas and oil derivatives continue to be set by the state at levels lower than cost recovery and lower than in the region. Similarly, charges for water, solid waste management, and waste water services are set below cost recovery and at lower levels than neighbouring countries (COWI, 2007). A key challenge related to further price liberalization is therefore their poverty impacts, due to the facts that the poor may suffer relatively more from higher energy prices, and that they tend to have high energy expenditures relative to income¹⁷.

¹⁴ Ilic, 2006

¹⁵ Ibid

¹⁶ Electricity prices in Serbia have increased significantly since 2000.

¹⁷ As noted above as a consequence of higher energy prices, rural poor are likely to increase their use of wood fuel, thereby contributing to deforestation.

Measures for compensating the poor for this effect may be needed in order to make the energy reforms politically feasible. Similarly, energy intensive industrial facilities are likely to face difficulties in adapting to world market energy prices and may oppose further reforms.

The NES proposes a number of incentive based policy instruments¹⁸ as well as different standards and permits¹⁹ that should be implemented in order to improve the environmental situation. If implemented and enforced these instruments would most likely greatly improve the environmental performance of key economic sectors such as industry²⁰, mining, agriculture and transports. In the long run, these reforms are also important preconditions for the integration of Serbia into EU and for making Serbian industry competitive on the world market. However, in the short run, the reform process involves political challenges where difficult trade offs between environmental objectives (clean air, water) and social objectives (employment) will have to be made²¹. It is important to underline that reforms leading to an improved environment can also open up new economic opportunities in different sectors, such as tourism and agriculture.

3. What are Key Actors doing to manage the Environmental Problems and Opportunities?

Several actors are active in efforts to address the key environmental challenges and attain environmentally sustainable development in Serbia.

Key domestic actors and their environmental management work:

The new Serbian government has signaled somewhat strengthened environmental priorities through the creation the new **Ministry for Environmental Protection (MEP)**. Since the creation of MEP in May 2007, most of the responsibilities in the area of environmental management and protection lie with MEP. Key responsibilities include development of strategic documents, plans and programmes in the field of sustainable use of natural resources and renewable energy sources; development of draft legislation for compliance with international agreements and draft laws on ratification of multilateral environmental agreements (MEAs); and the implementation of legislation and policies. Moreover, MEP is also pursues work related to protection of the ozone layer; climate change; transboundary air and water pollution; early warning of accidents; chemicals management; waste management (except nuclear waste); transboundary movement of protected species of flora and fauna; and transboundary movement of hazardous materials.

An increased budget allocation for the new ministry and an improved structure of the ministry²² are other initial indications of increased environmental priorities. However, MEP needs to develop capacity in relation to: (i) support to continued transposition of acquis

¹⁸ For example: differentiated taxes on leaded and unleaded petrol, charges on air emission, charges on water use and water discharge, charges for handling industrial waste and household waste, tax incentives for clean technology and pollution abatement.

¹⁹ For example: ambient-, emission-, and product standards.

²⁰ The processing industry is the main industrial branch representing almost 29% of GDP in 2003.

²¹ For example, in areas with heavy industry where environmental standards are difficult to meet with the existing industrial structure.

²² The Environmental Protection Agency and the Environmental Protection Fund are under the Ministry as well.

through drafting of laws, bylaws or acts (ii) project preparation (iii) development of 16 environmental action plans under the implementation of the NES, and (iv) implementation and enforcement of environmental legislation developed on the basis of *acquis* transposition both at sector level and at the level of local self-governments.

Regarding *climate change*, MEP is the focal point and Serbia is a party (Non-Annex I) to UNFCCC. Serbia ratified the Kyoto Protocol during the fall of 2007. Currently, Serbia is preparing an inventory of greenhouse gas (GHG) emissions in the framework of the GEF project “First National Communication in Response to the Country’s Commitments to UNFCCC”. Serbia also plans to establish an inter-ministerial body responsible for determining and approving Clean Development Mechanism (CDM) projects. The draft Law on Air Protection adopted by the Government (submitted for National Assembly approval) contains provisions related to GHG emissions (monitoring of GHG emissions, emission quotas for certain pollutants, promotion of clean technologies, energy efficiency measures and technologies that prevent and limit GHG emissions) (UNECE, 2007).

The sixth ministerial conference “**Environment for Europe (E4E)**” in Belgrade (10-12 October 2007) decided to enhance sub-regional cooperation in the field of climate change, an area considered to be of increasing priority. The adopted Ministerial Declaration recognizes the need to: (i) develop national Climate Change Framework Action Plans (CCFAPs), (ii) establish a sub-regional virtual climate change centre in Belgrade, and (iii) develop partnerships with regional and international organisations and conventions. The CCFAP would support implementation of UNFCCC. The

The E4E conference also claimed that (i) harmonization of national legislations with EU would demand an overall strengthening of environmental management systems as well as the strengthening of capacity building at all administrative levels, and (ii) that a majority of the south-eastern Europe countries (including Serbia) are faced with insufficient institutional frameworks, human resource capacities and financial resources in order to meet the requirements for appropriate implementation of the UNFCCC when it comes to climate change *adaptation* measures in particular.

Specifically, Serbia intends to: identify CDM projects with priorities; improve the administrative capacity regarding development and implementation of CDM projects; raise public awareness raised regarding CDM projects; develop a strategy for incorporating CDM projects within the agriculture, forestry and waste sector, respectively (ECE, 2007).

Serbia’s **Environmental Protection Agency (SEPA)** is responsible under MEP for tasks related to the development, regulation, harmonization and management of the national information system for environmental protection. SEPA is organized into two main departments, the Department for Monitoring of the State of the Environment, and the Department for National Information System Development. The environmental monitoring department is responsible for the monitoring of air quality, climate, radiation, water, soil, and biodiversity. The information system department handles the set up and running of the register of polluters and the general environmental information system. SEPA has 24 staff of which 18 are environmental specialists. Reportedly, SEPA has no immediate training needs for existing staff. However, due to an increasing work load, the agency considers that some 5-6 additional staff is needed in order for it to undertake all its functions under the *Law on Environmental Protection (LEP)* (COWI, 2007).

In 2003, Serbia established the **National Council for Sustainable Development (NCSD)**. It aims at building consensus between ministries and other stakeholders on issues related to the environment and sustainable development and pursue work to attain the MDGs. In order to do so, NCSD was restructured in 2005 and is now chaired by the deputy prime minister (DPM) and includes inter alia six ministers. It has also endeavoured in the project “Developing Strategy for Sustainable Development of Serbia” scheduled to be adopted by the Serbian Government in 2008. In an independent review, the Strategy is described as “a fairly comprehensive document that includes major elements of SDS as suggested by UN and OECD” (p. 11; Berger, 2008). However, the review also points out that the two main obstacles remain: adoption by the Serbia’s government, and practical implementation. Other issues include developing stronger ownership across ministries, involvement of the private sector and capacity development among lead institutions (e.g. MEP, SEPA).

The **Environmental Protection Fund (EPF)** is a separate legal entity set up under the Law on Environmental Protection. It started its operations in May 2000. The EPF co-finances projects within the fields of environment protection and energy efficiency. The environmental protection measures are confined to those related to waste management and air quality. Apparently, the EPF’s general need to enhance its capacity in project definition, development, appraisal, preparation, supervision, implementation and evaluation is quite considerable. This applies to its current activities but also new areas such as segregated waste collection and recycling (COWI, 2007).

The **Directorate for Water** is the focal point for the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (the Law on ratification was approved by the Government in 2007 and has been submitted to the National Assembly for adoption), the Convention on Cooperation for the Protection and Sustainable Use of the Danube River (Danube River Protection Convention), and the Danube Black Sea Task Force, as well as agreements on the Tisa and Sava rivers.

4. How and to what extent are the Responses to Environmental Problems and Opportunities implemented and followed up?

Progress in developing a policy framework for environmental management: During the last couple of years, Serbia has made significant progress in developing formal policies, action plans and a legal foundations for environmental management. For instance, the Law on Environmental Protection was adopted in 2004²³. In 2006, 10 laws directly related to environment were ready for adoption by Parliament²⁴. The draft National Environment Strategy has recently been submitted to parliament for approval. This represents an important policy development since the NES provides a strategic framework for further environment

²³ Including the Law on Strategic Environmental Assessment, Law on Environmental Impact Assessment and Law on Integrated Prevention and Pollution Control.

²⁴ Law on protection from non-ionizing radiation, Law on waste management, Law on air protection, Law on protection from ionizing radiation and nuclear safety, Law on amendments on the Environmental protection Law and 6 laws on the ratification of multilateral environmental agreements. A few more laws have been drafted: Laws on nature protection, on sustainable use and protection of fish, on protection from noise, on chemicals, on biocides. Currently, National Strategy for sustainable use of natural resources and goods is under preparation in the Ministry of Environmental Protection as well as Strategy of education for SD..

related reforms and investments in Serbia. A detailed National Action Plan to support the implementation of the NES is under preparation.

Although Serbia indeed has taken several important steps in formulating and adopting environmental strategies, action plans and legislation, *implementation on the ground is a major and largely outstanding issue*, particularly in view of the broader regional context and process for EU accession. A major challenge for improved environmental management ahead is therefore to move from policy formulation to implementation in practice (UNECE, 2007; Berger, 2008; COWI, 2007).

Environment plays an important role in the harmonization with EU acquis: These policy developments represent first major steps in the harmonisation of domestic environmental legislation with EU *acquis* which is an important prerequisite for accession to the European Union. However, in order to harmonize with EU environmental legislation, continued reforms are needed. In fact, fulfilling EU environmental laws may prove to be one of the most demanding tasks for the Serbian administration's work with EU harmonization²⁵.

EU harmonization may also assist Serbia in reforming the energy sector, which is likely to be a long term process connected with serious economic, political and social implications. Serbia has signed the Energy Community Treaty and agreed to respect EU environmental legislation and requirements relevant to the energy field. The National Action Plan for the implementation of the Energy Community Treaty is of high priority, but implementation of the Treaty is very demanding and requires understanding of relevant EU legislation and probably also significant technical and financial assistance from donors.

Need to implement climate change adaptation and mitigation measures. Serbia's ratification of the Kyoto protocol in fall 2007 facilitates potential benefits from the Clean Development Mechanism, which provides access to international financing for environmental protection (e.g. for introduction of cleaner technologies into steam power stations and improved energy efficiency). However, there is a need to adopt and implement actual projects and other types of interventions which would enable this. Arguably, projects to reduce electricity consumption may be quite attractive for foreign companies. Serbia is drafting an energy sector CDM strategy with the support of Norway, and will establish a Designated National Authority by the end of 2007. The rather complex licensing procedures for construction of energy production facilities may be an obstacle for new projects under the CDM (UNECE 2007)

Inadequate capacity for implementation, monitoring and enforcement: Nevertheless, environmental ministries are traditionally weak in Serbia (as in many other countries) and in order to increase implementation capacity recruitment of staff and training of specialists are highly needed. There is also a need to sort out institutional gaps and overlaps regarding environmental responsibilities between some of the ministries as well as between the national and local level. There is a big need to strengthen environmental capacity at the local administrative levels.

Weak mechanisms for integrating environment in key sectors: Improved mechanisms for cross sector and inter-ministerial collaboration are clearly needed. A key issue is how to

²⁵ 30 % of the European Partnership recommendations on legal harmonization is estimated to be related to environment, corresponding to approximately 27 000 pages of legislative text.

strengthen the capacity within key ministries to understand and address environmental issues related to their respective domain²⁶. Strategic Environmental Assessments and the development of sector action plans are instruments that should be used for integration of environmental issues in key sectors according to the new legislative framework for environmental protection, but the use of these instruments in practice have been very limited.

Insufficient financing of environmental investments: Financing the implementation of the National Environmental Strategy is a key challenge. According to the estimates in the NES, annual expenditures to reduce negative impacts on the environment will need to increase from on average 0,3% of GDP between 2001 and 2005 to around 2% of GDP during the coming years. This increase would be in line with the levels in other transition countries²⁷. The highest expenditure will be required in the following sectors: energy (29%), waste (24%), water (21%), and transport (12%). An important question is who is going to pay for environmental improvements? According to NES, the costs should be shared by the polluters (industry, population), the municipal budgets, ear-marked environmental funds, the state budget and foreign donors. Total revenues of the Environmental Protection Fund in 2006 were about 12 million Euros. Revenues to the Fund partly come from emission charges (particulate matters, SO₂, NO_x), waste water discharge and waste generation fees. Clearly, stepped up efforts for the practical realization of the polluter/user pays principles will be essential for securing financing of many environmental improvements. The current system is financially unsustainable since tariffs for water withdrawal, sewage services, energy use and waste disposal are very low and do not cover operation and investment costs.

Low environmental awareness: The general awareness and knowledge about environmental issues is low. Apart from improving the integration of environment in curricula in the education system there is also a need for advanced training in subjects such as environmental economics and environmental law and environmental management in general which can increase the capacity to address environmental issues at a strategic level.

Securing political support for environmental management: Finally, but not least important, improved environmental management is fundamentally dependant on political support. Still recovering from the economic collapse during the conflict period, Serbia is facing many different pressing political, social and economic problems. In order for environmental issues to be included in central political discussion a key challenge is to move from pursuing an isolated environmental agenda to discussing the implications of environmental degradation to key development issues such as EU-accession, economic growth, health and poverty reduction. The National Strategy for Sustainable Development (NSDS) represents an initiative in this direction, aiming at discussing environmental issues in the context of broader political and economic reforms. The National Council for Sustainable Development is chaired by the Deputy Prime Minister's Office which facilitates cross sector communication. Serbia presented a Draft NSDS at the Environment for Europe 2007 ministerial conference in October, which Serbia was hosting. Public debate is completed and adoption by government and parliament is foreseen for spring 2008.

²⁶ Including the Ministry of Economy and Regional Development, the Ministry of Health, the Ministry of Finance, the Ministry for infrastructure, and the Ministry of Energy and Mining.

²⁷ A full harmonization with EU environmental legislation may involve even higher costs according to the World Bank (2003).

Development agencies can play an important role in stressing the importance of environmental issues for poverty reduction and sustainable economic development in Serbia. Recently, Sweden, being the lead bilateral donor in the environment sector in Serbia, presented a joint donor statement on the importance of increasing the attention to environmental issues to the new Environment Minister. Further, Sweden plans to continue supporting implementation of NSDS and mobilizing other donors in these and similar activities.

5. *What are the implications for Swedish Development Cooperation?*

Conclusions and issues for Sida to consider

From this brief desk review it is fair to conclude that the severe environmental problems Serbia faces constitute key challenges for both poverty reduction and sustainable economic development. In addition, complying with EU environmental requirements may prove to be one of the most demanding tasks for the Serbian administration work with EU harmonization. While recent reform efforts include the important development of a new legal and policy framework for environmental management, effective implementation leading to measurable improvements remains a key concern.

Issues to consider in Swedish development cooperation with Serbia include:

- how Sweden best can/should consolidate its competencies and capacities in the environment field and work in a more consistent and coherent way;
- how will Sweden address climate change; specifically, is Sweden interested in supporting the implementation of the South-Eastern European Climate Change Framework Action Plan?
- how Sweden can utilize its position as a policy dialogue partner on environmental issues, specifically:
 - o What are the opportunities to engage in a high level policy dialogue on environmental issues with the government? What are the key issues to raise?
 - o What are Sida's capacity needs in terms of training of staff, specialist support, further studies etc in order to fulfill this role?
- How can Sida together with other development agencies support the integration of environment in key national and sector strategies?
 - o The completion and implementation of the national strategy for sustainable development can be an important tool for this purpose.
 - o Support to the government in conducting Strategic Environmental Assessment for key reform processes should be considered in line with the commitments in the Paris Declaration²⁸.
- How can environmental aspects be integrated in other key areas of Swedish support?

Finally, this brief review touches upon a range of highly complex issues. Needless to say there are many aspects that deserve a much more detailed level of analysis. We however hope

²⁸ Strategic Environmental Assessments (SEA) are increasingly being used to integrate environment in sector strategies and other strategic level decision-making. In the Paris Declaration development agencies and partner countries jointly committed to "...develop and apply common approaches for "strategic environmental assessment" at the sector and national levels. OECD DAC has recently published Guidance on how to apply SEA in development cooperation (www.seataskteam.net).

that the Environmental and Climate Impact Analysis fulfils its aim of being a point of departure for a discussion of how environmental and natural resources aspects can be integrated into Swedish development cooperation with Serbia.

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