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Environmentally and Socially Sustainable Development*

*Департамент Европы и Центральной Азии
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Serbia and Montenegro

A Country Environmental Analysis

Сербия и Черногория

Анализ экологической ситуации в стране

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www.worldbank.org/eca/environment

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2. Macroeconomics and Environment in Serbia and Montenegro
3. Environmental Expenditures and Financing
4. Institutions Policies and Laws
5. Energy, Transport and Environment in Serbia and Montenegro
6. Water Supply and Sanitation
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8. Coastal Zone Management in Montenegro
9. Forestry
10. Biodiversity and Protected Area Management
11. Donor Cooperation in the Environment Sector

Abbreviations and Acronyms

CDD	Community-driven development
CEA	Country Environment Analysis
CZM	Coastal zone management
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ESR	Environmental Sector Review
EU	European Union
FRY	Federal Republic of Yugoslavia
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse gas
IDP	Internally displaced person
koe	Kilogram of oil equivalent
lpc/d	Liters per capita/day
MDG	Millennium Development Goals
MEPP	Ministry of Environment and Physical Planning of the Republic of Montenegro
MENR	Ministry for the Protection of Natural Resources and Environment of Serbia (new)
MT	Metric tons
NEAP	National Environmental Action Plan
NGO	Nongovernmental organization
OSCE	Organization for Security and Cooperation in Europe
PRSP	Poverty Reduction Strategy Paper
REC	Regional Environmental Center
SAC	Structural Adjustment Credit
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme

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This report was prepared by a World Bank team composed of Arcadie Capcelea, Lead Environment Specialist and Task Team Leader; Gary Stuggins, Lead Specialist; Rita Klees, Senior Environment Specialist; Stefan Schwager, Senior Environment Specialist; Tijen Arin, Environment Economist; Christian Peter, Forestry Specialist; Rohan Selvaratnam, Operations Analyst; and Peter Whitford, Environment Consultant. Jadranko Simic, Local Environment Consultant, contributed to the report. The final version was prepared under the guidance of Anil Markandya, Lead Economist.

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Executive Summary

- i. Serbia and Montenegro is facing the challenge of restructuring its economy to restore growth and alleviate poverty after a protracted period of economic and political hardship and conflict and in the face of a degraded natural environment. The governments¹ recognize that environmental sustainability plays an important role in achieving their economic and social goals, and they wish to focus their limited financial resources on tackling the highest priority environmental issues. At the same time, they have extremely limited resources and many demands for priority action. Hence there is a critical need to identify the key environmental interventions, the mechanisms for financing them, and the institutional changes that underpin them.
- ii. The primary purpose of this review is to assist the World Bank in contributing to this urgent task by updating its understanding of the environment in Serbia and Montenegro, with a view to guiding the Bank's environment strategy in the context of the current social and economic situation. To this end, the review has assessed and assigned priorities to the environmental problems at the level of the Republics and the Federation (excluding Kosovo and Metohija). In doing so, it has also developed and strengthened the dialogue on environmental issues between the Bank and Serbia and Montenegro, thereby contributing to the preparation of the Poverty Reduction Strategy Paper (PRSP) and Country Assistance Strategy. This report has also been discussed with national stakeholders and donors in consultation workshops in Serbia and Montenegro, and it incorporates their comments.
- iii. The specific objectives of this Country Environmental Analysis (CEA) are to:
 - Review the existing situation in the sector, identify priority areas for policy changes or investments, and consider the role of the government, the private sector, and donors in implementing this agenda
 - Assess macroeconomy-environment linkages and measures that affect long-term sustainability and financial viability within the priority areas
 - Provide a basis for defining the Bank's future involvement in the sector.
- iv. The exercise has also begun a process through which the Bank can discuss with the governments appropriate actions for undertaking key reforms in environmental protection and the sustainable use of natural resources.

Summary of Main Environmental Problems and Their Causes

- v. The following environmental issues have been identified as critical, based on the negative impact of the current environmental conditions on human health, the economy, and natural ecosystems.
- vi. *Deteriorating trends in water, sanitation, and waste management.* Water and wastewater infrastructure was well developed in the former Yugoslavia. Service levels today,

¹ "The government" refers to the totality of federal and republic-level governments.

on average, reflect this legacy, with 86.6 percent of the population receiving drinking water supplies directly to their homes or yards, and 88.3 percent having access to a sewage or septic tank system. These statistics are somewhat misleading, however, as the quality of service leaves a great deal to be desired, and there are considerable differences in service delivery between regions and between urban and rural areas, particularly with respect to drinking water. Water and wastewater infrastructure deteriorated significantly as a result of little maintenance and no new investments during the 1990s. Lack of access, per se, to water and sanitation is a public health issue for some populations, particularly those living in urban slums, which are often located adjacent to poorly managed landfills and largely inhabited by internally displaced persons, Roma, and refugees. The solid waste management infrastructure is underdeveloped. Only about 50 percent of waste is collected in Serbia and Montenegro; no landfills meet standards for sanitary landfills; and municipal, industrial, toxic, and hazardous wastes are disposed of together. Investments and regulatory revisions toward establishing a proper waste management system are urgently needed to mitigate public health and environmental hazards. Reforms aimed at restoring the financial health of municipal utilities so that they can restore and expand services are a high priority.

vii. *Threat of coastal zone deterioration in Montenegro.* This is a crucial issue due to uncontrolled construction activities and the lack of wastewater treatment and a coastal zone management strategy. Evidence of eutrophication and bacterial contamination in tourist areas already exists. The coastal areas also experience shortages of drinking water during the peak summer season. Montenegro's aspirations to develop its tourism sector (it is targeting 22 million tourist nights—four times the current figure—by 2020) mean that these negative trends must be reversed. Developments need to be supported by stricter application of water, sewerage, and wastewater treatment standards, by investment in wastewater treatment, and by land management planning.

viii. *Air pollution hot spots.* These exist in several industrial areas, particularly near lignite-fired power plants (and associated mines), such as the Kolubara-Obrenovac corridor, and in the cities of Bor, Vraje, Kikinda, and Sabac in Serbia and the cities of Plevlja, Podgorica (Aluminum Kombinat), and Niksic (ironworks) in Montenegro. In some cases, nearby settlements of poor people are particularly exposed or affected. A higher-than-average incidence of respiratory problems is observed in these areas, and national air quality standards are exceeded by a large factor for sulfur dioxide and particulate matter. The high sulfur content of heating oil also poses a major problem. The use of environmentally friendlier district heating is limited. As a result, air pollution is especially pronounced during winter months. Another major source of pollution is the use of leaded gasoline and high-sulfur diesel. In the medium term, Serbia and Montenegro needs to phase out the use of leaded gasoline and develop standards to ensure high fuel quality. This would require restructuring its oil refinery and other reforms in the petroleum sector, including liberalizing entry into the selling of gasoline and petrol at the wholesale and retail levels.

ix. *Energy inefficiency.* While the main cause of air pollution is the burning of low-quality, lignite coal in inefficient power plants with poor pollution control technologies, also contributing to the problem is the high demand for energy from households and industry induced by low energy prices. Energy subsidies caused a quasi-fiscal deficit of US\$1.1 billion

in 2000, not only crowding out investments on more urgent social issues but also undermining incentives for users to invest in more-efficient technologies. Restructuring the electricity sector, together with phasing out energy subsidies, should eventually result in more investment for cleaner energy generation and the badly needed upgrading of energy distribution networks, which at the moment suffer high losses. These pose significant financial challenges. The governments have already started this process, and price increases in 2001 reduced energy's quasi-fiscal deficit by 50 percent. This will spur energy efficiency investments by industries and households, reducing demand and emissions while also improving the fiscal condition of the economy. They will be supported by the Serbian Energy Efficiency Agency, which is dedicated to addressing this issue. At the same time, however, the governments also need to introduce and ensure compliance with higher standards for fuels.

x. *Excessive industrial pollution.* This occurs in Serbia and Montenegro in a number of identified hot spots and poses a serious risk to public health and the surrounding ecosystem. In Serbia, the main hot spots are in the cities of Bor, Kragujevac, Pancevo, and Sabac. A U.N. Environment Programme (UNEP)/U.N. Centre for Human Settlements report identified additional environmental hot spots that were created in Serbia as a result of NATO bombing, at Pancevo and Novi Sad. Pollutants in the ambient environment include several substances that are extremely toxic, such as dichlorethane, mercury and other heavy metals, PCB oils and petroleum product wastes, and phenols. Levels of these pollutants are frequently found to exceed national and European Union (EU) standards. In Montenegro, the Aluminum Kombinat near Podgorica is the most serious hot spot, contaminating not only the air but also ground and surface water resources and hence endangering both the health of nearby communities and biodiversity in the Lake Skadar watershed.

xi. *Weak environmental management system, institutionally and legally.* It is claimed that some hot spots have developed as a result of NATO bombing while others are due to improper operations of industrial plants over a number of years. The situation was allowed to develop because of an inadequate and at times perverse incentive system, lack of monitoring and enforcement capacity of government agencies, insufficient access to environmental information by the public, and lack of access to capital for better technology. Monitoring and enforcement of standards and regulations are weakened by fragmented institutions and the inconsistent nature of legal and organizational frameworks, with limited mandates, insufficient staffing, lack of modern inspection equipment, and low fines. The current system of environmental assessment and monitoring of mitigation measures suffers from a lack of scoping and screening to ensure that efforts are focused on genuinely important environmental problems. The economic transition that the country is undergoing provides an opportunity to redefine public and private cooperation on environmental protection in a way that fosters the business environment. Serbia and Montenegro's environmental management system will also need to be strengthened, in combination with general civil service reform and efforts to reduce corruption generally.

xii. Economic instruments that appear to be more directed to revenue generation than to providing incentives for environmentally responsible behavior. The most striking example of this is the 1-percent tax on the total investment amount that is levied at the environmental impact assessment (EIA) stage. Not being related to environmental performance in any way,

this tax serves as a disincentive for businesses to create much-needed investments. Such a fee is only justified if it covers no more than the administrative costs of reviewing the EIA of an investment proposal.

xiii. *Difficulties with the quality and quantity of water resources.* Serbia and Montenegro is classified among the water-poor countries of Europe, given its low per capita water flow and domestically generated water resources. Groundwater plays an important role in drinking water supply, but the quality is such that most of it must be treated before it can be drunk. River water quality is largely poor, notably in central and northern Serbia, as a result of industrial, agricultural, and municipal wastewater pollution, pollution associated with river navigation, pollution from thermal power stations, and pollution originating in upstream countries. In Montenegro, signs of eutrophication and other contamination have become visible in Lake Skadar and in marine waters. Improvement in the capacity to monitor water quality is necessary for enhanced water resources management. Serbia and Montenegro is prone to regular floods. Large-scale physical measures have been put in place in northern Serbia, but more needs to be done in the rest of Serbia and Montenegro, including community-based flood prevention measures.

xiv. *Transboundary water and global environmental issues.* Serbia and Montenegro contributes about 13 percent of the Danube's nutrient pollution and hence is, together with other basin countries, responsible for the deterioration of the downstream Black Sea ecosystem. Policies and incentives to reduce nutrient runoff in the agricultural sector and improved municipal and industrial wastewater treatment in the Danube Basin are needed to alleviate this problem. Serbia and Montenegro also has unique species of flora and fauna that are under various degrees of threat. A biodiversity strategy is required to determine the best course of action for their longer-term preservation.

xv. *Lack of sustainable forest management.* Serbia and Montenegro has significant forest resources that are threatened by overharvesting, illegal logging, forest fires, and pest infestations. Promotion of sustainable management of forests by strengthening forest institutions, increasing wood extraction fees to cover costs, and harmonizing standards and regulations within the country and internationally is needed. Excessive cutting of trees in mountainous parts of Montenegro and Serbia is in part responsible for increased erosion and flood occurrence.

Main Recommendations

xvi. The review's main recommendations for action are given in Table ES1. For each action, the table provides the main reason why it is seen as critical, notes related issues that also need to be addressed, and reports on supporting activity by other donors. The selection of actions is based on the following criteria:

- *Impact on human health*—priority is given to those problems, primarily related to air and water pollution, that have a demonstrable negative impact on health, such as illness and premature death.

- *Impact on the economy*—some problems can be ranked according to their economic impact, including pollution and natural resource management issues.
- *Impact on natural ecosystems*—since the destruction of habitat and extinction of species are not reversible, these impacts do not have easily quantifiable economic use values for humans associated with them but could nevertheless be critical for the proper functioning of economic systems.

In addition to these, the priorities for action in Table ES1 also take account of ongoing support from other donors, as well as the likely costs of the interventions, the potential benefits, and the prospects for mobilizing financial resources for them.

xvii. The list of recommendations does not include **two key policy measures** that the governments are already committed to that, if successfully implemented, will make a major contribution to the environment. The first is **the phaseout of energy subsidies**. Under its macro and sectoral reform programs, Serbia and Montenegro reduced such subsidies in 2001 and 2002. In addition to the benefits this brought to the budget (the quasi-fiscal deficit due to subsidies has fallen by 50 percent, or around US\$550 million during this period), the phaseout also reduced the inefficient use of energy and brought down emissions of local and global pollutants. The extension of the program to raise Serbia and Montenegro's energy prices to world levels will bring further benefits in these areas and should be continued, as the governments of both republics intend. At the same time, attention needs to be paid to the impact of the price rises on the poorest segments of the population, especially those in rural areas who might make increased use of wood fuel. Experience elsewhere in the region has shown that these shifts in energy use can increase deforestation and cause health damages through higher levels of indoor air pollution. Measures to address these impacts can be taken without compromising the subsidy phaseout program.

xviii. The second key policy measure relates to **the pricing of water and waste services by municipalities**. Currently the charges are so low that the service is poor and the infrastructure is deteriorating fast. As with energy, the governments have started action to raise prices in some municipalities, but so far only a handful of utilities have taken steps in this direction. The benefits of increasing charges are clear: they will allow better services to be provided, thereby improving the environmental health of the population served, and they will reduce the budgetary deficit, releasing resources for other high-priority investments, including those on the environment. This program should be expanded as much as possible, with targeted support for vulnerable users being included as part of the reform program.

xix. The recommendations in Table ES1 emphasize, above all, **the need for continued policy and institutional reforms** that will have major implications for the environment and that will also, in many cases, benefit the economy. These are **complemented by investments** where these are critical for addressing environmental issues. In some cases the policy and institutional reforms need some further preparatory work. This is the case for actions relating to coastal zones and biodiversity protection, and, for these, the preparation of a strategy document is recommended as a first step. The study team considers that a full National Environmental Action Plan, starting from scratch in identifying and developing environmental priorities, is not necessary at this stage, given the work that has already been done on these issues. The

governments, with donor assistance, may wish to organize stakeholder consultation seminars focused on prioritization of actions recommended in their environmental sector analyses and on identification of financial resources to carry them out.

xx. Areas where policy/institutional reforms should be initiated are: strengthening institutional capacity in environmental management and addressing environmental liability and privatization. Finally, areas where some investments need to be made in the short term; these include improvements in solid waste disposal facilities, improvements in rural and urban water services, and consideration of serious pollution problems in selected hot spots. In all cases the focus should be on localities where the present situation poses a serious health threat. In addition, the governments should consider investments that augment regional/global public goods—such as those that reduce greenhouse gases through improvements in energy efficiency, that tackle Danube eutrophication, that promote integrated ecosystem management for Lake Skadar, or that otherwise improve biodiversity conservation. The justification for these is that Serbia and Montenegro has international obligations that have to be fulfilled and that funds for these programs will come partially from international earmarked sources, such as the Global Environment Facility (GEF). The selection of the projects, however, should be based on the net global benefits plus the local benefits generated.

The Contribution of Other Donors

xxi. Following the democratic changes in Serbia and Montenegro in late 2000, several multilateral and bilateral donors have initiated substantial programs that relate to the environment. Donor support for the environment in Serbia and Montenegro initially focused on urgent problems, primarily in the municipal sector, but has since moved to support for broader institutional reform, including legal and technical areas, technical assistance, and infrastructure investment. The **European Agency for Reconstruction of the EU**, which is responsible for the management of the main EU assistance programs in Yugoslavia, is the largest donor, investing mostly at the municipal level, covering maintenance and repair of local public facilities. For sewerage and wastewater, the EU intends to fund preparatory studies for larger projects, which will then be funded mainly from other sources, including the European Investment Bank. The **U.S. Agency for International Development** also has a large assistance portfolio in Serbia and Montenegro, focusing as well at the municipal level—for small-scale urgent infrastructure development and maintenance—and in support of civil society development. Larger investment programs are being prepared by the **European Bank for Reconstruction and Development**, which is currently negotiating investments in the larger cities for district heating systems and for water supply and sewage systems. The **Governments of Germany and France** are also undertaking smaller-scale efforts that support wastewater and water projects.

xxii. Bilateral donors are also supporting a number of infrastructure projects, and some have contributed to cleaning up activities in several environmental “hot spots,” in particular where NATO bombing damage occurred. UNEP has identified 27 cleanup projects to address the post-conflict environmental and humanitarian problems, with an estimated cost of US\$37 million. **Switzerland, Austria, Norway, Russia, Denmark, and others** have provided US\$11 million, and about 15 projects have been implemented. **Germany** intends to provide Euro 2.5

million to Montenegro for environmental protection and is in the process of determining the specific area of investment.

xxiii. A number of donors and international agencies are also providing or planning to provide technical assistance to Serbia and Montenegro in environment-related programs. Among the more active in this area are U.N. institutions and the EU. Currently the **U.N. Development Programme** is working to develop a strategy for energy conservation and efficiency and for the promotion of sector reform. It is taking a lead position implementing GEF projects in the area of preparing national strategies on climate change and on biodiversity conservation. The **U.N. Economic Commission for Europe (UNECE)** is preparing an Environmental Performance Review for the country. **UNEP**, together with **UNECE**, has organized several capacity building workshops. The **EU** plans to provide substantial assistance in the areas of environmental legislation, support to civil society networks, and the strengthening of municipal institutions responsible for solid waste and wastewater management. It will also support improved monitoring of pollution and work on hot spots where the current situation poses a serious environmental risk.

xxiv. The **Regional Environmental Center in Central and Eastern Europe (REC)** is co-implementing several regional projects in Yugoslavia: providing support for ratification and implementation of multilateral environmental agreements; strengthening the national environmental protection agencies; developing national information systems and environmental legal advocacy and advisory centers. Among bilateral donors, the **Government of Finland** is providing special support in the area of harmonization and improvement of environmental legislation. And other donors (**Switzerland and Norway**) have supported, through the **Organization for Security and Cooperation in Europe**, the draft framework Environmental Protection Law for Serbia or are supporting the Serbian or Montenegrin Governments in some particular areas. (For example, the **Government of Japan** has supported preparation of Serbia's waste management strategy.)

The Role of the Bank

xxi. The donor review suggests that there is considerable interest in the environment from external agencies and that the Bank has to think carefully about where it can make the most useful contribution. The main programs that the Bank could most usefully support are listed in Table ES2. They target areas not being adequately addressed by other donors where action is needed according to the priorities listed in Table ES1.

- **Develop a hazardous waste facility for Serbia.** The Serbian Ministry for the Protection of Natural Resources and Environment (MENR) intends to develop a National Solid Waste Management Strategy based in part on the Strategic Framework for Waste Management prepared with Japanese aid. The Bank is already involved through the International Finance Corporation in a possible private-sector solid waste management project for Belgrade. In Montenegro it provided a special investment grant for a coastal zone waste disposal facility last year, and it expects to add to that this year. The Bank will provide an additional International Development Association credit of US\$5 million for the same sector and region and thus solve the waste problem for a most sensitive

tourist area of the country. This places the Bank in the lead on assistance in solid waste in Serbia and Montenegro. The investment would make a major contribution to resolving one of the most serious environmental problems in the country. It is priority action 1 in Table ES1.

- **Prepare and implement an Integrated Ecosystem Management Program for Lake Skadar, the largest freshwater lake in Serbia and Montenegro, which is shared with Albania.** This activity falls under priority action 10 in Table ES1, and although it preempts the biodiversity strategy to some extent, the action is justified for several reasons. First, the lake is clearly an important resource, so any biodiversity strategy is bound to recommend priority action in this region. Second, time is of the essence as increasing water pollution threatens fisheries and as deforestation and illegal hunting endanger globally significant ecosystems. The Bank is well placed to undertake this project because of its experience in similar integrated ecosystem management projects, including the ongoing Lake Ohrid Project between Macedonia and Albania. It could also lead to the development of community-driven development projects that address agricultural and rural infrastructure issues (for example, rural water supply).
- **Design and implement a Danube nutrient reduction investment project.** This is priority action 8 in Table ES1. The Bank would play a pivotal role in the Black Sea/Danube cleanup program, and Serbia and Montenegro urgently needs to make a contribution to the nutrient reduction targets as part of its obligation under the Convention on Co-operation for the Protection and Sustainable Use of the Danube River. Serbia and Montenegro contributes about 13 percent of the Danube River's nutrient pollution, which has had negative impacts for fisheries, tourism, and public health in the Danube and Black Sea regions. GEF funding is available for this.
- **Prepare an energy efficiency and renewable energy project for Serbia.** Priority action 7 in Table ES1 is included because there are a number of areas where energy efficiency is very low and where investment in more-efficient technology would be justified, especially with the higher energy prices that are being planned, and because the project would benefit the local environment and economy, with part of the costs being covered from its contribution to the global public good (that is, reduction in greenhouse gas emissions). The Bank, possibly through the GEF or the Prototype Carbon Fund, would be the most effective agency to implement such a project. Another possibility for this activity would be a debt-for-nature swap.
- **Assist the Ministry of Environment in legal revisions to the privatization law to take account of environmental liability.** This is priority action 6 on Table ES1. Although a number of donors are willing to support this activity, the Serbian MENR and the Privatization Agency would benefit from Bank experience in this area, which is extensive. It could be incorporated into the broader privatization agenda via a Second Private and Financial Sector Adjustment Credit and via a technical assistance (TA) project to support case-by-case privatization where there are serious environmental liability issues. Perhaps a Bank TA grant with support from one or more bilateral donors would be the best arrangement.

- **Support the PRSP process.** By drawing out the key environment poverty linkages and contributing to the PRSP document in this area, the Bank can help ensure that environmental issues are properly addressed in the national development strategy. This is partly in support of priority action 4 in Table ES1, which includes the need for a better understanding of the impact of environmental changes on poor sections of society and of how actions need to be designed to minimize such impacts in the future and possibly reverse those that have already happened. The Bank has considerable experience with environment and poverty issues and is well placed to offer assistance in this area.

Table ES1: Main Recommendations

Action	Reason for Inclusion	Related Issues	Support
1. Improve waste management, particularly hazardous waste.	<i>Impact on human health</i> —current practice poses serious public health risk through accidents during transportation and to urban poor, especially Roma, who scavenge waste dumps Governments have indicated this is a high priority	In addition to hazardous waste, Regional landfills should be promoted for waste from small and medium settlements.	EBRD and WB Group have initiated investment programs
2. Increase provision of basic water and sanitation services to urban and rural poor	<i>Impact on human health</i> —present situation poses significant health risk and a burden to the poor population who incur high costs of obtaining clean water	Sustainable operation of the schemes has to be ensured, from local charges or from subsidies.	EU and bilateral donors, especially France
3. Address environmental hot spots	<i>Impact on human health</i> —present air pollution and groundwater pollution poses significant public health hazard; a number of hot spots have been addressed, but many remain	Could be tied to actions under 1,2,5, 7 and 8.	Several donors could support such actions
4. Strengthen institutional capacity for environmental management	<i>Fulfills all criteria</i> , providing outcomes lead to reductions in environmental and natural resource degradation, economy decline, and health damage; important issues to be addressed are monitoring and decentralization	Focus needs to be on monitoring of key pollutants, clarification of responsibilities	Possibly EU, Government of Finland, REC, OSCE; included as components of WB lending operations
5. Prepare a coastal zone strategy	<i>Impact on economy</i> —development of tourism will depend critically on proper control of land use and on adequate investment in infrastructure <i>Impact on natural ecosystems</i> —development has to protect key resources	Risk of failure is high; strategy will require political commitment from many parties and increased resources for local government.	No donor funding yet; private sector contribution to implementing program will be essential
6. Include EA related to liability in context of privatization	<i>Impact on economy</i> —successful privatization of “dirty” industries requires this issue to be addressed <i>Impact on natural ecosystems/health</i> —if EA uncovers a serious problem, addressing it during privatization has positive environmental impacts	Possible funding for environmental cleanup in hot spots can be tied to this program	WB SAC project is addressing some of these issues but more is needed; EU, Government of Finland support possible
7. Introduce measures to enhance energy efficiency and use of renewable energy sources	<i>Impact on economy</i> —prospects of enhanced affordability of energy sources <i>Impact on natural ecosystems</i> —reduced greenhouse gas emissions		Possible GEF funding; debt-for-nature swap could also be explored
8. Institute measures to reduce nutrient run-off to the Danube	<i>Impact on natural ecosystems</i> —as part of Serbia and Montenegro’s commitment under Danube Protection Program	Includes investment projects	To be assessed, but financed from GEF
9. Prepare a biodiversity strategy; identify threatened species and prepare an action plan	<i>Impact on natural ecosystems</i> —as part of Serbia and Montenegro’s commitment under the biodiversity and related conventions	Specific key investments may be implemented immediately	From GEF and possible support from EU
10. Prepare management plan for Lake Skadar and introduce environmentally friendly natural resource use practices	<i>Impact on economy</i> —current situation is threatening fishery and tourism potential of lake, which is among the poorest in Montenegro <i>Impact on natural ecosystems</i> —degradation of water quality, deforestation, and illegal hunting is threatening the lake’s globally significant biodiversity		GEF support plus local and donor co-financing

Table ES2: Proposed Activities for the Bank

Activity	Type	Time frame	Proposed Funding
Serbia Hazardous Waste Management Project. Supports recommendation 1.	Investment	Project start FY 05	TBD
Montenegro/Albania Lake Skadar Integrated Ecosystem Management. Supports recommendations 9 and 10 with possible follow-up of CDD and rural infrastructure projects.	Investment	Project start FY 04	GEF preparation grant and GEF grant (app. US\$5m) and donor and local co-funding
Serbia Danube Basin Nutrient Reduction Project. Supports recommendation 8.	Investment	Project start FY 05	GEF preparation grant and GEF grant (app. US\$ 5m) and donor and local co-funding
Serbia legal revisions to integrate environmental due diligence into privatization process. Supports recommendation 6.	Capacity building	FY 03	IDF grant or TA from Privatization Loan
Serbia Energy Efficiency and Renewable Energy Project. Supports recommendation 7.	Investment	FY 04	GEF preparation grant and GEF grant (app. US\$5 m) and donor and local co-funding . Debt for Nature Swap?
Serbia and Montenegro PRSP Support Exercise on Environment and Poverty Linkages (two stakeholder workshops in each republic and support to analytical work in intermittent period). Supports recommendation 4.	Capacity building	FY 03 (Oct. 02—Mar. 03)	ECSSD BB funds (already secured from PREM)

РЕФЕРАТ

i. Перед Сербией и Черногорией стоит задача реструктуризации экономики с целью восстановления темпов роста и борьбы с бедностью после продолжительного периода экономических и политических трудностей и конфликтов на фоне резкого ухудшения состояния природной среды. Правительства обеих республик признают¹, что устойчивое состояние природной среды играет важную роль в достижении поставленных политических и экономических целей, поэтому они стремятся сосредоточить свои ограниченные финансовые ресурсы на решении неотложных экологических задач. Одновременно они располагают крайне скудными материально-техническими ресурсами при большом количестве требований о проведения приоритетных мероприятий. Этим обуславливается важнейшая задача определения приоритетных направлений вмешательства правительств в сферу охраны окружающей среды, формирования механизмов финансирования этих мероприятий, а реформы соответствующих государственных институтов.

ii. Главная цель этого анализа - помочь Всемирному банку внести посильный вклад в решение этой неотложной задачи за счет более глубокого понимания особенностей экологической ситуации в Сербии и Черногории и реализации стратегии деятельности Всемирного банка в контексте текущей социально-экономической ситуации. Для этого анализ оценил и классифицировал экологические проблемы на уровне республик и Федерации (исключая Косово и Метогию) и присвоил им соответствующие приоритеты. Авторы документа также установили и расширили диалог по экологическим вопросам между Всемирным банком, с одной стороны, и Сербией и Черногорией, с другой, и тем самым внесли свой вклад в подготовку Документа с изложением стратегии борьбы с бедностью и Стратегии помощи стране. Этот Отчет также был обсужден с представителями стран и организаций-доноров в процессе консультационных семинаров в Сербии и Черногории, поэтому в нем нашли отражение замечания этих представителей.

iii. Конкретные задачи настоящего Анализа экологической ситуации в стране включают:

- Исследование существующего положения в секторе, определение приоритетных направлений изменений политики или инвестиций, а также рассмотрение роли правительства, частного сектора и организаций-доноров в реализации этих задач
- Оценка макроэкономических и экологических связей и отношений и мер, влияющих на долгосрочную устойчивость и финансовую обоснованность деятельности по приоритетным направлениям
- Обеспечение базовых условий для определения участия Банка в этом секторе в будущем.

Наша работа также положила начало процессу, с помощью которого Всемирный банк может обсуждать необходимые действия с правительствами в интересах

¹ Термин "правительство" относится ко всей совокупности федеральных и республиканских органов исполнительной власти.

ключевых реформ в сфере защиты окружающей среды и обеспечения рационального использования природных ресурсов.

Круг основных экологических проблем и их причины

iv. Были определены следующие критические экологические проблемы с учетом их отрицательного воздействия на здоровье населения, экономику и природные экосистемы.

v. *Тенденции к ухудшению состояния водного хозяйства, очистки воды и удаления отходов.* Бывшая Югославия имела хорошо развитую инфраструктуру водоснабжения и канализации. В настоящее время уровень обслуживания в целом отражает это "наследство": 86.6% населения получает питьевую воду непосредственно в квартиры или дома, 88.3 % населения имеет доступ к канализации или системе септических танков. Однако эта статистика может создавать несколько искаженную картину, так как качество услуг оставляет желать много лучшего и существуют значительные различия в предоставлении коммунальных услуг между регионами, между городом и сельской местностью, особенно в плане снабжения населения питьевой водой. Инфраструктура водоснабжения и канализации существенно ухудшилась вследствие практического отсутствия технического обслуживания, текущего ремонта или новых инвестиций в 90-х годах. Отсутствие доступа жителей некоторых населенных пунктов к питьевой воде и канализации само по себе угрожает здоровью людей, особенно обитателей городских трущоб, которые часто соседствуют со стихийными свалками и основной контингент обитателей которых составляют перемещенные лица, цыгане и беженцы. Инфраструктура удаления твердых отходов развита неудовлетворительно. В Сербии и Черногории удаляют лишь примерно 50% отходов; мусорные свалки не удовлетворяют санитарным нормам; муниципальные, промышленные и ядовитые отходы вывозят вместе. Для уменьшения угрозы здоровью людей и благополучию природной среды срочно нужны инвестиции и пересмотр существующего законодательства с целью создания надлежащей системы управления отходами. Приоритетной задачей является проведение реформ, направленных на укрепление финансового состояния муниципальных предприятий коммунальных услуг, чтобы они могли восстановить и расширить уровень и качество услуг населению.

vi. *Угроза ухудшения состояния прибрежной зоны в Черногории.* Это весьма серьезная проблема, учитывая неконтролируемую строительную активность и отсутствие стратегии очистки сточных вод и управления прибрежной зоной. Уже имеются свидетельства эвтрофикации и бактериального заражения туристических зон. Кроме того, в разгар летнего сезона прибрежные районы испытывают дефицит питьевой воды. Без устранения этих отрицательных тенденций надежды, которые связывает Черногория с развитием сектора туризма (к 2020 году страна планирует увеличить приток туристов в четыре раза - до 22 млн. туристов/ночь), останутся тщетными. Развитие необходимо подкрепить более строгим соблюдением стандартов качества питьевой воды, отвода и очистки сточных вод, а также капиталовложениями в очистку сточных вод и землеустройство.

vii. *Очаги загрязнения воздуха.* Они существуют в нескольких промышленных районах, особенно вблизи тепловых электростанций со сжиганием бурого угля (и

обслуживающих их шахт), например, в коридоре Колубара-Обреновач, а также городах Бор, Врае, Кикинда и Сабач в Сербии, и городах Плевля, Подгорица (алюминиевый комбинат) и Никшич (металлургический завод) в Черногории. В некоторых случаях от загрязнения воздуха больше всего страдают жители близлежащих поселков. В этих районах наблюдается повышенное распространение среди населения заболеваний дыхательных путей, и здесь общенациональные нормы качества воздуха многократно превышены по содержанию сернистого ангидрида и твердых частиц. Серьезной проблемой также является высокое содержание серы в печном топливе. Централизованное теплоснабжение, представляющее меньшую угрозу для окружающей среды, используется в ограниченных масштабах. Как следствие, загрязнение воздуха особенно заметно в зимний период. Другим мощным источником загрязнения является использование этилированного бензина. В среднесрочной перспективе Сербии и Черногории необходимо постепенно отказаться от использования этилированного бензина и разработать стандарты качества топлива. Это потребует реструктуризации нефтеперерабатывающей промышленности, включая обеспечение свободы доступа субъектов экономической деятельности к оптовому и розничному рынку бензина и других видов моторного топлива.

viii. *Эффективность использования энергии.* Несмотря на то, что главной причиной загрязнения воздуха является сжигание бурного угля низкого качества на тепловых электростанциях с низким КПД с неудовлетворительными технологиями контроля загрязнения воздушного бассейна, мощным фактором, усугубляющим эту проблему, является высокий спрос населения и промышленных предприятий на энергию, поощряемый низкими ценами на энергоносители. Субсидии на потребление энергии вызвали квазифискальный дефицит в 2000 году в размере 1 млрд. долларов США, не только воспрепятствовав инвестициям, которые могли бы способствовать решению более актуальных социальных вопросов, но и лишив пользователей стимула к капиталовложениям в более энергоэффективные технологии. Реструктуризация сектора электроэнергетики в комплексе с постепенной отменой субсидий на энергопотребление будет, в конечном счете, приводить к увеличению инвестиций в производство электроэнергии экологически чистым способом и позволит осуществить давно назревшую реконструкцию сетей электроснабжения, которые сейчас страдают от больших потерь электроэнергии. В этой связи возникают крупные задачи финансирования отрасли. Правительства уже начали этот процесс, и повышение цен на энергию в 2001 году привело к сокращению квазифискального энергетического дефицита на 50%. Это послужит дополнительным стимулом для инвестиций предприятий и населения в повышение эффективности использования энергии, приведет к сокращению спроса и выбросов загрязняющих веществ в атмосферу, а также улучшит финансовое состояние экономики страны. Эта деятельность будет пользоваться поддержкой Сербского Агентства по вопросам эффективности использования энергии, которое создано специально для решения этого вопроса. В то же время, однако, правительствам необходимо принять более строгие стандарты качества топлива и добиться соблюдения их требований.

ix. *Избыточное промышленное загрязнение.* Подобные явления, выявленные в ряде очагов на территории Сербии и Черногории, являются серьезным фактором риска для здоровья населения и окружающих экосистем. В Сербии основные очаги загрязнения находятся в городах Бор, Крагуевац, Панчево и Сабач. В Отчете

Центра по человеческим поселениям Экологической Программы ООН (ЮНЕП)/ООН определены дополнительные очаги экологического неблагополучия, возникшие в Сербии в результате бомбардировок ВВС НАТО, в частности, в Панчево и Нови Сад. Загрязняющие вещества, присутствующие в окружающей среде, включают несколько чрезвычайно токсичных соединений, таких как дихлорэтан, ртуть, другие тяжелые металлы, масла ПХД и отходы нефтепродуктов, а также фенолы. Обнаружено, что уровни содержания этих загрязнителей часто превышают допустимые национальные нормы и нормы ЕС. В Черногории алюминиевый комбинат близ Подгорицы является наиболее серьезным источником загрязнения не только воздуха, но и почвы, поверхностных вод, и по этой причине ставит под угрозу здоровье жителей прилегающих поселков, а также биологическое разнообразие в системе водосбора озера Скадар.

х. *Слабая в институциональном и правовом отношении система экологического управления.* Утверждают, что одни очаги экологического неблагополучия возникли вследствие бомбардировок НАТО, а другие - в результате ненадлежащей эксплуатации промышленных предприятий в течение ряда лет. Никаких мер для исправления этой ситуации не предпринималось, учитывая такие факторы, как: наличие неадекватной и временами искаженной системы льгот; ограниченные возможности правительственных органов в сфере мониторинга и контроля исполнения требований экологических законов и правил; ограниченный доступ общественности к экологической информации и отсутствие возможности использования источников капиталовложений в новые технологии. Эффективность мониторинга и исполнения требований стандартов и нормативно-правовых актов ослаблена вследствие разрозненности учреждений и непоследовательной природы правовых и организационных систем, которые имеют ограниченные полномочия, недоукомплектованы кадрами, а также отсутствия современного оборудования для экологических проверок, и низких штрафов. Существующая система экологической экспертизы и текущего контроля мер по снижению уровней загрязнения страдает от отсутствия мер скоупинга (предварительной оценки масштабов проекта) и скрининга (предварительного отбора), которые могли бы обеспечить сосредоточение усилий на решении истинно важных экологических проблем. Переходной период в экономике, который сейчас переживает страна, дает ей возможность заново определить направления сотрудничества государства и частного сектора в сфере защиты окружающей среды таким способом, который бы благоприятствовал развитию частной инициативы. Система управления охраной окружающей среды Сербии и Черногории также нуждается в укреплении в сочетании с общей реформой системы государственного управления и усилиями по уменьшению общего уровня коррупции.

xi. *Экономические инструменты, которые, на наш взгляд, в большей степени направлены на получение финансовых поступлений, а не на создание стимулов для экологически более ответственного поведения.* Наиболее поразительным примером этого является налог на общую сумму инвестиций в размере 1%, который взимается на этапе экологической экспертизы. Этот налог ни в коей мере не связан с экологической эффективностью и не побуждает частные предприятия делать столь необходимые инвестиции. Подобный сбор мог бы быть обоснован в том случае, когда бы он покрывал лишь административные затраты на изучение данных экологической экспертизы по конкретному инвестиционному предложению.

xiii. *Проблемы качества и количества водных ресурсов.* Сербию и Черногорию относят к числу стран Европы, наименее обеспеченных водными ресурсами, учитывая расход воды на душу населения и собственные запасы воды. Подпочвенные воды играют большую роль в снабжении питьевой водой, но ее качество таково, что большая ее часть нуждается в очистке перед употреблением. Речная вода в основном низкого качества, особенно в центральной и восточной части Сербии, что является результатом загрязнения промышленными, сельскохозяйственными и коммунальными стоками, загрязнения в результате речного судоходства, загрязнения стоками тепловых электростанций и загрязнения, источником которого являются страны, расположенные выше по течению рек. В черногорском озере Скадар и морских водах выявлены признаки эвтрофикации и других видов загрязнения. Для повышения эффективности управления водными ресурсами необходимо повышение потенциала мониторинга качества воды. Сербия и Черногория страдают от частых наводнений. В северной Сербии осуществлены крупномасштабные меры физической защиты, но предстоит проделать дополнительную работу на остальной территории Сербии и Черногории, включая меры противопаводковой защиты силами местных общин.

xiii. *Трансграничные проблемы обеспечения водными ресурсами и глобальные экологические вопросы.* Вклад Сербии и Черногории в биогенное загрязнение Дуная составляет примерно 13%, и вместе с другими странами бассейна Дуная Сербия и Черногория несут ответственность за ухудшение состояния расположенных вниз по течению экосистем Черного моря. Для снижения остроты этой проблемы необходимы стратегии и стимулы для снижения стока биогенных загрязняющих веществ в секторе сельского хозяйства в комплексе с повышением эффективности очистки промышленных и коммунальных стоков в странах бассейна Дуная. Сербия и Черногория имеют также уникальные виды флоры и фауны, которые находятся под разной степенью угрозы. Необходима стратегия сохранения биологического разнообразия, обеспечивающая проведение оптимальных мероприятий с целью сохранения этих видов.

xiv. *Отсутствие устойчивого режима лесопользования.* Сербия и Черногория имеют достаточные лесные ресурсы, но им угрожают чрезмерная вырубка, незаконные лесозаготовки, лесные пожары и заражение вредителями. Необходимо содействие устойчивому лесопользованию за счет укрепления институтов лесного хозяйства, повышения платы за рубку леса для компенсации затрат и приведения национальных правил и стандартов в соответствие с международными нормами. Чрезмерная рубка деревьев в горных районах Черногории и Сербии является одной из причин усиления эрозии почв и повышения частоты паводков.

Основные рекомендации

xv. Основные практические рекомендации из данного Анализа приведены в Таблице ES1. Эта Таблица предлагает краткое обоснование важности каждого практического мероприятия, отмечает родственные проблемы, которые нуждаются в решении, а также содержит сведения о вспомогательной деятельности других организаций-доноров. Выбор практических мероприятий продиктован следующими критериями:

- *Влияние на здоровье населения* — приоритетное значение придается решению тех проблем, которые непосредственно связаны с загрязнением воздуха и воды, оказывают доказанное отрицательное влияние на здоровье человека, в частности приводят к болезни или преждевременной смерти
- *Влияние на экономику* — некоторые проблемы можно "ранжировать" в соответствии с их влиянием на экономику, включая загрязнение и некоторые вопросы управления использованием природных ресурсов
- *Влияние на природные экосистемы* — поскольку разрушение естественной среды обитания и исчезновение видов не носит необратимый характер, эти влияния не имеют легко параметризуемых значений экономической пользы для тех, кто ими может воспользоваться, но их изучение может, тем не менее, играть важную роль в обеспечении эффективного функционирования экономических систем.

xvi. Наряду с указанными направлениями, приоритетные мероприятия, показанные в Таблице ES1, также учитывают текущую поддержку организаций-доноров и вероятные затраты на вмешательство правительства, потенциальные выгоды и перспективы мобилизации необходимых финансовых ресурсов.

xvii. В список рекомендаций не включены **два стратегически важных мероприятия**, приверженность реализации которых подтвердили оба правительства. В случае успешной реализации они внесут крупный вклад в улучшение экологической ситуации. Первое мероприятие - это **постепенный отказ от энергетических субсидий**. В соответствии с программами макроэкономических реформ и реформ сектора Сербия и Черногория уже сокращали эти субсидии в 2001 и 2002 году. Наряду с выгодами, которые эти меры принесли бюджету (в этот период квазифискальный дефицит, вызванный субсидиями, сократился на 50% , или на 550 млн. долларов США), постепенный отказ от субсидий также привел к сокращению неэффективного использования энергии и уменьшению количества атмосферных выбросов из местных и глобальных источников загрязнения. Дальнейшее повышение цен на энергию в Сербии и Черногории до уровня мировых в рамках программы обещает дополнительные выгоды для этих районов, и правительства обеих республик подтвердили свое намерение продолжать выполнение программы. В то же время необходимо учитывать влияние повышения цен на жизненный уровень беднейших слоев населения, особенно в сельских районах, которые могут перейти к более интенсивному использованию древесного топлива. Опыт других районов региона показал, что эти сдвиги в использовании источников энергии могут усиливать вырубку лесов и наносить вред здоровью населения через повышенные уровни загрязнения воздуха в жилых помещениях. Меры, направленные на нейтрализацию этих влияний, можно реализовывать без ущерба для программы постепенного отказа от субсидий.

xviii. Второе ключевое стратегическое направление относится к **ценообразованию на услуги водоснабжения и канализации, предоставляемые муниципалитетами**. В настоящее время плата за эти услуги очень мала, не обеспечивает качества услуг и поддержания инфраструктуры в нормальном техническом состоянии. Как и в случае с потреблением энергии, правительства начали поднимать цены в некоторых муниципалитетах, но до сих пор лишь считанные единицы предприятий коммунальных услуг предприняли шаги в этом направлении. Выгоды от повышения платежей очевидны: эти поступления

обеспечат повышение качества услуг, что в свою очередь приведет к повышению экологического благосостояния обслуживаемого населения, сокращению бюджетного дефицита, высвобождению части ресурсов для других приоритетных инвестиций, включая инвестиции в охрану окружающей среды. Программу следует всемерно расширять, рассматривая предоставление адресной поддержки социально незащищенным группам потребителей как ее неотъемлемую часть.

хix. Рекомендации, приведенные в Таблице ES1, ставят во главу угла **необходимость продолжение этой политики и проведения институциональных реформ**, которые окажут положительное влияние на состояние экологии, что в свою очередь будет во многих случаях положительно влиять на экономику. Этот подход **дополняется теми инвестициями**, которые важны для решения экологических вопросов. В некоторых случаях политика и институциональные реформы требуют проведения дополнительных подготовительных мероприятий. Так обстоит дело с практическими мероприятиями, относящимися к прибрежным зонам и защите биологического разнообразия, и подготовка стратегического документа по ним является первым рекомендуемым шагом. Группа экспертов считает, что полный Общенациональный план экологических действий, с "нуля" идентифицирующий и формирующий экологические приоритеты, на данном этапе пока не нужен, учитывая ту работу, которая уже проделана по этим направлениям. С помощью доноров правительства могут организовать консультационные семинары для всех заинтересованных сторон с упором на определение приоритетных действий из числа рекомендованных в экологической оценке сектора и на поиск финансовых ресурсов для выполнения этих действий.

хх. Направления реформы политики/ институциональной основы, которые необходимо инициировать, включают: укрепление институциональной базы экологического управления, выполнение экологических обязательств и приватизацию. Наконец, направления некоторых инвестиций, необходимых в краткосрочной перспективе: это - улучшение систем удаления твердых отходов; повышение качества услуг водоснабжения в городах и сельской местности; а также анализ серьезных проблем загрязнения в отдельных "очагах". Во всех случаях следует держать в поле зрения все населенные пункты, в которых существующая экологическая ситуация представляет угрозу для здоровья населения. Кроме того, правительствам необходимо подумать об инвестициях, которые увеличивают региональные, глобальные общественные блага - в частности капиталовложения, снижающие выбросы парниковых газов за счет повышения эффективности использования энергии, уменьшающие эутрофикацию Дуная, способствующие комплексному управлению экосистемами озера Скадар, или другим образом повышающие защиту биологического разнообразия. Обоснованием этого является то, что Сербия и Черногория имеет международные обязательства, которые необходимо выполнить, и то, что средства для финансирования этих программ поступят частично из международных "защищенных" источников, например, Глобального экологического фонда (ГЭФ). Вместе с тем отбор этих проектов должен основываться на соображениях чистой глобальной выгоды и выгод, создаваемых на местах.

Вклад других доноров

xxi. После демократических изменений в Сербии и Черногории в конце 2000 года несколько многосторонних и двусторонних организаций-доноров инициировали важные экологические программы. Первоначально поддержка донорами экологической ситуации в Сербии и Черногории концентрировалась на проблемах, требующих неотложного решения, главным образом в муниципальном секторе, но после этого она распространилась и на более широкие институциональные реформы, включая правовые и технические аспекты, техническую помощь и инвестиции в инфраструктуру. **Европейское Агентство реконструкции ЕС**, ответственное за управление реализацией ключевых программ помощи ЕС в Югославии, является крупнейшим донором, вкладывающим финансовые средства главным образом в муниципальные объекты, в том числе в техническое обслуживание и ремонт местных предприятий коммунальных услуг. Что касается канализации и очистки сточных вод, ЕС намерен финансировать подготовительные исследования по более крупным проектам, которые будут впоследствии финансироваться в основном из других источников, включая Европейский инвестиционный банк. **Агентство международного развития правительства США** также имеет обширный перечень проектов технической помощи Сербии и Черногории как на муниципальном уровне (развитие и техническое обслуживание в ограниченных масштабах критически важных объектов инфраструктуры), так и направленных на поддержку становления гражданского общества. В настоящее время **Европейский банк реконструкции и развития** разрабатывает более крупные инвестиционные программы и проводит переговоры в крупных городах по вопросу капиталовложений в системы централизованного теплоснабжения, а также системы водоснабжения и канализации. **Правительства Германии и Франции** также предпринимают усилия меньшего масштаба с целью поддержки проектов в сфере очистки сточных вод и водоснабжения.

xxii. Двусторонние организации-доноры также поддерживают ряд инфраструктурных проектов и некоторые из них внесли свой вклад в мероприятия по очистке нескольких "очагов" загрязнения, в частности тех мест, где был нанесен ущерб бомбардировками НАТО. ЮНЕП определила 27 проектов очистки на общую сумму примерно 37 млн. долларов США с целью решения экологических и гуманитарных проблем, созданных в результате конфликта. **Швейцария, Австрия, Норвегия, Россия, Дания и другие страны** внесли 11 млн. долларов США, что позволило реализовать около 15 проектов. **Германия** намерена предоставить Черногории 2,5 млн. евро на цели охраны окружающей среды и сейчас занимается определением конкретных направлений инвестирования.

xxiii. Ряд доноров и международных организаций также предоставляют или планируют предоставить техническую помощь Сербии и Черногории в осуществлении программ, связанных с охраной окружающей среды. Наиболее активную роль в этой сфере играют организации ООН и ЕС. В настоящее время **Программа развития ООН** работает над стратегией сбережения энергии, обеспечением эффективности использования энергии, а также продвижением реформ в данном секторе. Данная Программа берет на себя ведущую роль в реализации проектов ГЕФ в сфере формирования национальных стратегий по изменению климата и сохранения биологического разнообразия. **Экономическая**

Комиссия ООН по Европе занимается подготовкой Анализом состояния охраны окружающей среды для страны. **Экологическая Программа ООН** совместно с **Экономической Комиссией ООН по Европе** провела ряд семинаров, посвященных вопросам создания потенциала. ЕС планирует предоставление значительной помощи в сфере экологического законодательства, поддержку сетей структур гражданского общества, а также укрепления муниципальных учреждений, ответственных за управление удалением твердых отходов и очисткой сточных вод. ЕС будет также поддерживать реализацию мероприятий по улучшению мониторинга загрязнения и работу в очагах экологического неблагополучия, где существующая ситуация представляет серьезный экологический риск.

xxiv. **Региональный экологический Центр в Центральной и Восточной Европе (РЭЦ)** является соисполнителем нескольких региональных проектов в Югославии: обеспечения поддержки ратификации и реализации многосторонних экологических соглашений; укрепления национальных агентств по охране окружающей среды; создания национальных информационных систем, правовой поддержки по экологическим вопросам и деятельности консалтинговых центров. В числе двусторонних доноров **правительство Финляндии** оказывает специальную поддержку в сфере гармонизации и совершенствования экологического законодательства. Другие доноры (**Швейцария и Норвегия**) через **Организацию по безопасности и сотрудничеству в Европе** поддержали проект рамочного Закона об охране окружающей среды для Сербии или поддерживают деятельность правительств Сербии и Черногории по некоторым направлениям. (Например, **правительство Японии** поддержало подготовку стратегии правительства Сербии в области управления размещением отходов).

Роль Банка

xxv. Анализ, проведенный донорами, показывает, что международные организации проявляют большой интерес к вопросам защиты окружающей среды и что Банку необходимо глубоко изучить вопрос о том, где он может сделать наиболее значительный вклад. Основные программы, полезную поддержку которым может оказать Банк, перечислены в Таблице ES2. Они направлены на решение таких проблем, которым до сих пор не уделялась достаточного внимания другими донорами и соответствуют приоритетным задачам, перечисленным в Таблице ES1.

- **Создание мощностей для переработки опасных отходов в Сербии.** Министерство защиты природных ресурсов и окружающей среды Сербии намеревается разработать Национальную стратегию размещения твердых отходов, основанную частично на положениях Стратегической концепции удаления твердых отходов, которая была подготовлена при помощи правительства Японии. Банк уже участвует в этой работе через Международную финансовую корпорацию (МФК), которая, возможно, будет реализовывать Проект частного сектора по управлению удалением твердых отходов для Белграда. В прошлом году МФК предоставил Черногории специальный инвестиционный грант на создание мощностей для удаления отходов в прибрежной зоне и предполагает выделить дополнительные средства по этому гранту в текущем году. Банк обеспечит предоставление кредита Международной Ассоциации развития (МАР) в

размере 5 млн. долларов США для этого же сектора и региона, чтобы таким образом решить проблему загрязнения одной из наиболее уязвимых зон туризма в стране. Благодаря этому Банк играет ведущую роль в предоставлении помощи Сербии и Черногории в сфере удаления твердых отходов. Инвестиции сделают серьезный вклад в решение одной из серьезнейших экологических проблем страны. Эта деятельность отнесена к разряду действия 1 в Таблице ES1.

- **Подготовка и реализация Комплексной Программы управления экосистемами для озера Скадар - крупнейшего резервуара питьевой воды в Сербии и Черногории, используемого совместно с Албанией.** Эта деятельность отнесена к приоритетной задаче №10 в Таблице ES1, и хотя она в определенной степени основывается на положениях стратегии сохранения биологического разнообразия, ее можно обосновать несколькими причинами. Во-первых, озеро - это несомненный и важный ресурс, поэтому любая стратегия сохранения биологического разнообразия должна по необходимости содержать рекомендуемые приоритетные действия в этом регионе. Во-вторых, фактор времени играет существенную роль, так как усиление загрязнения воды угрожает рыбному хозяйству, а вырубка лесов и незаконная охота ставят под угрозу глобально значимые экосистемы. Банк имеет необходимые возможности предпринять реализацию данного проекта с учетом накопленного им опыта осуществления подобных комплексных проектов сохранения экосистем, включая текущий Проект реабилитации озера Охрид, который реализуется совместно Македонией и Албанией. Этот Проект мог бы также лечь в основу разработки местными властями проектов развития, направленных на решение проблем инфраструктуры сельского хозяйства и сельских населенных пунктов (например, водоснабжения в сельской местности).
- **Разработка и реализация инвестиционного Проекта снижения биогенного загрязнения Дуная.** Это приоритетное мероприятие под номером 8 в Таблице ES1. Банк имеет желание сыграть ключевую роль в Программе очистки Черного моря/ Дуная, и Сербии и Черногории срочно необходимо внести свой вклад в объекты снижения биогенного загрязнения в рамках обязательств по Конвенции о сотрудничестве в целях охраны и устойчивого использования ресурсов р. Дунай. Вклад Сербии и Черногории в биогенное загрязнение Дуная, которое отрицательно влияет на состояние рыболовства, туризма и здоровья населения в регионах Дуная и Черного моря, составляет 13%. На эти цели предусмотрено финансирование за счет средств ГЭФ.
- **Подготовка Проекта эффективности использования энергии и энергоснабжения за счет возобновляемых источников энергии для Сербии.** Приоритетное мероприятие 7 включено в Таблицу ES1, потому что есть ряд сфер низкой эффективности использования энергии, где будут обоснованными инвестиции в более энергоэффективные технологии, особенно с более высокими ценами на энергоносители, а также потому, что реализация проектов принесет выгоды местной экономике и окружающей среде; при этом часть затрат будет компенсироваться за счет вклада проектов в общее увеличение общественного блага (т.е. сокращение

выбросов парниковых газов). Банк, действуя, вероятно, через ГЭФ или Модельный фонд контроля выбросов парниковых газов, может выступать в роли наиболее эффективного исполнителя подобного проекта. Другой возможностью для реализации этого мероприятия может быть своп "долг - на природные ресурсы".

- **Содействие Министерству экологии в правовой экспертизе закона о приватизации в части экологических обязательств.** Это приоритетное действие 6 в Таблице ES1. Несмотря на то, что ряд доноров выражают стремление поддержать эту деятельность, Министерство экологии и природных ресурсов Сербии и Агентство по приватизации Сербии могут с выгодой для себя воспользоваться обширным опытом Банка в этой области. Этот опыт можно "вписать" в более широкий план приватизации с помощью Второго кредита на реструктуризацию частного и финансового секторов и Проекта технической помощи для поддержки приватизации по индивидуальным схемам, особенно для случаев серьезных экологических обязательств. Вероятно, грант Банка на техническую помощь при поддержке одного или нескольких двусторонних доноров будет наилучшим вариантом.
- **Поддержка процесса подготовки Документа с изложением стратегии борьбы с бедностью.** Вычленив ключевые зависимости между экологией и бедностью и внося свой вклад в разработку Документа с изложением стратегии борьбы с бедностью в этой области, Банк может оказать содействие правительству в том, чтобы обеспечить надлежащее отражение экологических вопросов в общенациональной стратегии развития. Это явится частичной поддержкой мероприятия 4 в Таблице ES1, которое, в частности, предполагает необходимость более глубокого понимания влияния экологических изменений на малоимущие слои населения, изучения способов планирования мероприятий, минимизирующих такие экологические влияния в будущем, а также, вероятно, придающих обратный ход тем экологическим влияниям, которые уже наступили. Банк располагает значительным опытом в решении вопросов экологии и бедности и имеет все возможности оказания стране помощи в этой области.

Таблица ES1: Основные рекомендации

Действия	Причина включения в Таблицу	Связанные вопросы	Поддержка
1. Улучшение управления удалением отходов, особенно отходов опасных	<i>Влияние на здоровье населения</i> — существующая практика серьезно угрожает здоровью населения, что проявляется через аварии во время транспортировки отходов, а также оказывает вредное воздействие на здоровье бедных жителей городских районов, особенно цыган, которые роются на мусорных свалках в поисках съестного Правительства союзных республик поставили эту задачу в ряд наиболее приоритетных	Наряду с опасными отходами, следует шире применять региональные свалки для удаления отходов из малых и средних населенных пунктов	ЕБРР и группа учреждений Всемирного банка инициировали инвестиционные программы
2. Улучшение предоставления базовых услуг водоснабжения и канализации малоимущим слоям населения в городах и сельской местности	<i>Влияние на здоровье населения</i> — существующая ситуация серьезно угрожает бедным слоям населения и ложится на них тяжелым бременем, так как они вынуждены нести большие затраты на получение чистой воды	Необходимо обеспечить устойчивую работу этих схем - за счет местных платежей или субсидий	ЕС и двусторонние доноры, в первую очередь Франция
3. Реабилитация "очагов" экологического неблагополучия	<i>Влияние на здоровье населения</i> — существующее загрязнение воздуха и приповерхностных вод представляет серьезную угрозу для здоровья населения; несмотря на ликвидацию ряда очагов экологического неблагополучия, многие районы остаются без внимания	Можно увязать с действиями в соответствии с пунктами 1,2,5, 7 и 8	Несколько доноров могли бы поддержать подобные мероприятия
4. Укрепление институциональной базы экологического управления	<i>Выполняет все критерии</i> , обеспечивая получение конечных результатов, приводящих к снижению деградации экологических и природных ресурсов, сокращению падения темпов экономического роста, и уменьшению ущерба для здоровья населения; важными вопросами, которые необходимо решить, являются мониторинг и децентрализация	Необходимо сосредоточить внимание на мониторинге главных загрязнителей, уточнении обязанностей	Вероятно, ЕС, правительство Финляндии, Региональный экологический центр, ОБСЕ; включено в качестве компонента кредитных операций Всемирного банка
5. Подготовка стратегии охраны прибрежной зоны	<i>Влияние на экономику</i> — развитие туризма будет в значительной степени зависеть от надлежащего контроля землепользования и достаточных инвестиций в инфраструктуру <i>Влияние на природные экосистемы</i> — развитие должно обеспечивать охрану ключевых ресурсов	Риск неудачи велик; реализация стратегии потребует политической воли многих участников и увеличения объема ресурсов, выделяемых местным органам власти	Пока не привлечено донорское финансирование; вклад частного сектора в осуществление программы будет играть важную роль
6. Экологическая экспертиза в части экологических обязательств в контексте приватизации	<i>Влияние на экономику</i> — успешная приватизация "грязных" отраслей промышленности требует решения этого вопроса <i>Влияние на состояние природных экосистем/здоровье населения</i> — если экологическая	Возможное финансирование экологической очистки в очагах неблагополучия можно увязать с	Проект Кредита на структурную реформу Всемирного банка направлен на решение части из

	экспертиза определит наличие серьезной проблемы, то ее решение в процессе приватизации окажет положительный экологический эффект	этой Программой	этих вопросов, но необходимо привлечь дополнительные средства; возможна поддержка ЕС и Правительства Финляндии
7. Принять меры, усиливающие эффективность использования энергии и использование возобновляемых источников энергии	<i>Влияние на экономику</i> — перспективы повышения доступности энергоносителей <i>Влияние на природные экосистемы</i> — снижение выбросов парниковых газов		Возможно финансирование за счет средств ГЭФ; следует также изучить возможность осуществления свопа "долг - на природные
8. Принять меры по снижению стока биогенных загрязнителей в р. Дунай	<i>Влияние на природные экосистемы</i> — как часть обязательств Сербии и Черногории в соответствии с Программой охраны Дуная	Включая инвестиционные проекты	Подлежит оценке, но финансируется за счет средств ГЭФ
9. Подготовить стратегию сохранения биологического разнообразия; определить виды, которым грозит исчезновение, и подготовить план действий	<i>Влияние на природные экосистемы</i> — как часть обязательств Сербии и Черногории согласно Конвенции о защите биологического разнообразия и другим родственным конвенциям	Конкретные ключевые инвестиции можно осуществить немедленно	Финансирование за счет ГЭФ при возможной поддержке ЕС
10. Подготовить план использования ресурсов озера Скадар и принять практические подходы к использованию природных ресурсов экологически щадящим образом.	<i>Влияние на экономику</i> — текущая ситуация угрожает потенциалу рыболовства и туризма озера, район которого относится к числу беднейших в Черногории <i>Влияние на природные экосистемы</i> — ухудшение качества воды, сведение лесов незаконная охота угрожают глобально значимому биологическому разнообразию озера		Поддержка ГЭФ плюс совместное финансирование за счет местных бюджетов и доноров

Таблица ES2: Предлагаемые направления деятельности Банка

Мероприятие	Тип мероприятия	Срок исполнения	Предлагаемое финансирование
Создание мощностей для переработки опасных отходов в Сербии. Поддерживает рекомендацию 1.	Инвестиции	Начало проекта - 2005 финансовый год	Подлежит определению
Комплексная Программа совместного управления Черногорией и Албанией комплексным использованием экосистемам озера Скадар. Поддерживает рекомендации 9 и 10 с возможными последующими действиями в рамках развития, определяемого местными общинами, и на базе проектов развития инфраструктуры сельского хозяйства.	Инвестиции	Начало проекта - 2004 финансовый год	Грант ГЭФ на подготовку проекта и грант ГЭФ (в сумме около 5 млн. долларов США), совместное финансирование доноров и местных органов власти
Проект снижения биогенного загрязнения сербского бассейна Дуная Поддерживает рекомендацию 8.	Инвестиции	Начало проекта - 2005 финансовый год	Грант ГЭФ на подготовку проекта и грант ГЭФ (в сумме около 5 млн. долларов США), совместное финансирование доноров и местных органов власти
Содействие Министерству экологии в правовой экспертизе закона о приватизации в части экологических обязательств. Поддерживает рекомендацию 6.	Создание потенциала	2003 финансовый год	Грант на развитие институциональной базы или техническая помощь в рамках Займа на приватизацию
Проект повышения эффективности использования энергии и энергоснабжения за счет возобновляемых источников энергии для Сербии Поддерживает рекомендацию 7.	Инвестиции	2004 финансовый год	Грант ГЭФ на подготовку проекта и грант ГЭФ (в сумме около 5 млн. долларов США), совместное финансирование доноров и местных органов власти. Своп "долг - природные ресурсы?"
Поддержка процесса разработки Документа с изложением стратегии борьбы с бедностью в части определения связи между бедностью и состоянием экологии (два семинара для участников в каждой республике и поддержка аналитической работы в период между ними). Поддерживает рекомендацию 4.	Создание потенциала	2003 финансовый год (октябрь 2002 - март 2003)	Финансовые средства ECSSD BB (Отдела экологически и социально устойчивого развития, уже зарезервированные за счет статьи снижения бедности и экономического управления)

1. Introduction

1.1 Background and Objectives

1. Serbia and Montenegro is facing the challenge of restructuring its economy to restore growth and alleviate poverty after a protracted period of economic and political hardship and conflict and in the face of a degraded natural environment. The governments² recognize that environmental sustainability plays an important role in achieving their economic and social goals, and they wish to focus their limited financial resources on tackling the highest priority environmental issues. At the same time, they have extremely limited resources and many demands for priority action. Hence there is a critical need to identify the key environmental interventions, the mechanisms for financing them, and the institutional changes that underpin them.

2. The primary purpose of this review is to assist the World Bank in contributing to this urgent task by updating its understanding of the environment in Serbia and Montenegro, with a view to guiding the Bank's environment strategy in the context of the current social and economic situation. To this end, the review has assessed and assigned priorities to the environmental problems in the two republics and in the Federation (excluding Kosovo and Metohija). In doing so, it has also developed and strengthened the dialogue on environmental issues between the Bank and Serbia and Montenegro, thereby contributing to the preparation of the Poverty Reduction Strategy Paper (PRSP) and Country Assistance Strategy.

3. The specific objectives of this Country Environmental Analysis (CEA) are to:

- Review the existing situation in the sector, identify priority areas for policy changes or investments, and consider the role of the government, the private sector and donors in implementing this agenda
- Assess macroeconomy-environment linkages and measures that affect long-term sustainability and financial viability within the priority areas
- Provide a basis for defining the Bank's future involvement in the sector.

The exercise has also begun a process through which the Bank can discuss with the governments appropriate actions for undertaking key reforms in environmental protection and sustainable use of natural resources.

4. The CEA has been designed to provide a framework for improved collaboration with development partners in carrying out country-level diagnostic analysis. The World Bank Team and the United Nations Economic Commission for Europe (UNECE) Team that has produced an Environmental Performance Review of the Federal Republic of Yugoslavia cooperated closely and exchanged information in the analysis of sub-sectoral trends and policies. The draft version of the CEA was discussed with stakeholders in both republics in workshops organized in October and December 2002. Comments received in these workshops have been integrated in the final report. The findings and recommendations of the CEA also inform the development of the Serbia

² "The government" refers to the totality of federal and republic-level governments.

and Montenegro PRSP and the Country Assistance Strategy, both of which are scheduled for the third quarter of 2003.

1.2 Main Trends in the Quality of the Environment and Natural Resources

5. The following environmental issues have been identified as critical, based on the negative impact of current environmental conditions on human health, the economy, and natural ecosystems.

6. *Deteriorating trends in water, sanitation, and waste management.* Water and wastewater infrastructure was well developed in the former Yugoslavia. Service levels today, on average, reflect this legacy, with 86.6 percent of the population receiving drinking water supplies directly to their homes or yards. These figures can be misleading, however, for a number of reasons: First, a large percentage of the drinking water provided is of low quality. Second, the water distribution system is outdated and inadequate, leading to large losses. Third, there are significant differences in service delivery among different regions and between urban and rural populations, particularly in terms of drinking water supplies (urban coverage is 97 percent, compared with 68 percent rural coverage). In rural areas, wells are often used, and contamination of groundwater poses a public health problem, especially in Vojvodina, where the groundwater table is high. A similar observation holds for sanitation. Although according to official statistics 88.3 percent of the population has access to the sewage system or a septic tank, service to the majority of rural populations is limited to absorption tanks, which are not insulated from leakages. Only 8 percent of all household wastewater is treated. Ten years of little maintenance and no new investments in the wastewater sector has resulted not only in the deterioration of the infrastructure and basic service delivery, but also in the decline of ambient and drinking water quality. Lack of access, per se, to water and sanitation is a public health issue for some populations, particularly those living in urban slums, which are often located adjacent to poorly managed landfills and are largely inhabited by internally displaced persons (IDPs), Roma, and refugees.

7. *Only about 50 percent waste collection.* No landfills meet standards for sanitary landfills. In the absence of a secure landfill site for hazardous waste and proper management practices, medical, chemical, and animal wastes are disposed of together with regular household waste, exposing the population to significant public health risks. There is no systematic solution for recycling of waste, which is presently informally undertaken by Roma. Reforms aimed at restoring the financial health of municipal utilities so that they can restore and expand services are a high priority.

8. *Threat of coastal zone deterioration in Montenegro.* This is a crucial issue due to uncontrolled construction activities and the lack of wastewater treatment and a coastal zone management strategy. Evidence of eutrophication and bacterial contamination in tourist areas already exists. The coastal areas also experience shortages of drinking water during the peak summer season. Montenegro's aspirations to develop its tourism sector (it is targeting 22 million tourist nights—four times the current figure—by 2020) mean that these negative trends must be reversed. Developments need to be supported by stricter application of water, sewerage, and wastewater treatment standards, by investment in wastewater treatment, and by land management planning.

9. *Air pollution hot spots.* These exist in several industrial areas, particularly near lignite-fired power plants (and associated mines), such as the Kolubara-Obrenovac corridor, and in the cities of Bor, Pancevo and Sabac in Serbia and the cities of Plevlija, Podgorica (Aluminum Kombinat), and Niksic (ironworks) in Montenegro. In some cases, nearby settlements of poor people are particularly exposed or affected. A higher-than-average incidence of respiratory problems is observed in these areas, and national air quality standards are exceeded by a large factor for sulfur dioxide (SO₂) and particulate matter. The high sulfur content of heating oil also poses a major problem. Environmentally friendlier district heating is limited to large cities. As a result, air pollution is especially pronounced during winter months. Another significant source of pollution is the use of leaded gasoline and high-sulfur diesel and mazut (8–9 percent sulfur content). In the medium term, Serbia and Montenegro needs to phase out the use of leaded gasoline and develop standards to ensure high fuel quality. This would require restructuring its oil refinery and other reforms in the petroleum sector, including liberalizing the entry into the selling of gasoline and petrol at the wholesale and retail levels.

10. *Energy inefficiency.* High demand for energy from households and industry induced by low energy prices contributes to air pollution. Energy subsidies caused a quasi-fiscal deficit of US\$1.1 billion in 2000, not only crowding out investments on more urgent social issues but also undermining incentives for users to invest in more-efficient technologies. Restructuring the electricity sector, together with phasing out energy subsidies, should eventually result in more investment for cleaner energy generation and the badly needed upgrading of energy distribution networks which at the moment suffer high losses. The governments have already started this process, and price increases in 2001 reduced energy's quasi-fiscal deficit by 50 percent. This will spur energy efficiency investments by industries and households, reducing demand and emissions while also improving the fiscal condition of the economy. At the same time, however, the governments also need to introduce and ensure compliance with higher standards for fuels.

11. *Excessive industrial pollution.* This occurs in Serbia and Montenegro in a number of identified hot spots, which poses a serious risk to public health and the surrounding ecosystem. In Serbia, the main hot spots are in the cities of Bor, Kragujevac, Pancevo, and Sabac. A U.N. Environment Programme (UNEP)/U.N. Centre for Human Settlements report identified additional environmental hot spots that were created in Serbia as a result of NATO bombing, at Pancevo and Novi Sad. Twenty-seven sites were identified, with a remediation cost of around US\$30 million. So far, however, UNEP has only received US\$11 million in grants for this work. Pollutants in the ambient environment include several extremely toxic substances, such as dichlorethane, mercury and other heavy metals, PCB oils and petroleum product wastes, and phenols. Levels of these pollutants are frequently found to exceed national and European Union (EU) standards. In Montenegro, the Aluminum Combinat near Podgorica is the most serious hot spot, contaminating not only the air but also ground and surface water resources and hence endangering both the health of nearby communities and biodiversity in the Lake Skadar watershed.

12. *Weak environmental management system, institutionally and legally.* Some hot spots have developed as a result of NATO bombing while others are due to improper operations of industrial plants over a number of years. The situation was allowed to develop because of an inadequate and at times perverse incentive system, lack of monitoring and enforcement capacity of government agencies, insufficient access to environmental information by the public, and lack of access to capital for better technology. Monitoring and enforcement of standards and

regulations are weakened by fragmented institutions and the inconsistent nature of legal and organizational frameworks, with limited mandates, insufficient staffing, lack of modern inspection equipment, and low fines. The current system of environmental assessment and monitoring of mitigation measures suffers from a lack of scoping and screening to ensure that efforts are focused on genuinely important environmental problems. The economic transition that the country is undergoing provides an opportunity to redefine public and private cooperation on environmental protection in a way that fosters the business environment. Serbia and Montenegro's environmental management system will also need to be strengthened, in combination with general civil service reform and efforts to reduce corruption generally.

13. *Economic instruments that appear to be more directed to revenue generation than providing incentives for environmentally responsible behavior.* The most striking example of this is the 1-percent tax on the total investment amount that is levied at the environmental impact assessment (EIA) stage. Not being related to environmental performance in any way, this tax serves as a disincentive for businesses to create much needed investments. Such a fee is only justified if it covers no more than the administrative costs of reviewing the EIA of an investment proposal.

14. *Difficulties with the quality and quantity of water resources.* Serbia and Montenegro is categorized among the water-poor countries in Europe, given its low per capita water flow and domestically generated water resources. Groundwater plays an important role in drinking water supply, but most groundwater must be treated before it can be drunk. River water quality is largely poor, notably in central and northern Serbia, as a result of industrial, agricultural, and municipal wastewater pollution, pollution associated with river navigation, pollution from thermal power stations, and pollution originating in upstream countries. In Montenegro, signs of eutrophication and other contamination have become visible in Lake Skadar and in marine waters. Improvement in the capacity to monitor water quality is necessary for enhanced water resources management. Serbia and Montenegro is prone to regular floods. Large-scale physical measures have been put in place in northern Serbia, but more needs to be done in the rest of Serbia and Montenegro, including community-based flood prevention measures.

15. *Transboundary water and global environmental issues.* Serbia and Montenegro contributes about 13 percent of the Danube's nutrient pollution and hence is, together with other basin countries, responsible for the deterioration of the downstream Black Sea ecosystem. Policies and incentives to reduce nutrient run-off in the agricultural sector and improved municipal and industrial wastewater treatment in the Danube Basin are needed to alleviate this problem. Serbia and Montenegro also has unique species of flora and fauna that are under various degrees of threat. The Government of the Federal Republic of Yugoslavia prepared a priority action plan to address pollution hot spots in the Danube and to monitor endangered areas. Feasibility studies have been prepared for wastewater treatment plants in 21 towns, but funding for the program remains a problem. Furthermore, these are mostly short-term measures. A biodiversity strategy is required to determine the best course of action for the longer-term preservation.

16. *Lack of sustainable forest management.* Serbia and Montenegro has significant forest resources that are threatened by overharvesting, illegal logging, forest fires, and pest infestations. Promotion of sustainable management of forests by strengthening forest institutions, increasing wood extraction fees to cover costs, and harmonizing standards and regulations within the

country and internationally is needed and is being addressed in the new law. Excessive cutting of trees in mountainous parts of Montenegro and Serbia is in part responsible for increased erosion and flood occurrence.

1.3 Millennium Development Goals and the Environment

17. Ensuring environmental sustainability is one of the eight U.N. Millennium Development Goals (MDGs) that were adopted at the Millennium Summit in September 2000. Analysis of MDG indicators in Serbia and Montenegro suggests that there is room for improvement in all MDG areas. (See Table 1.)

18. *Proportion of population with sustainable access to an improved water source.* While statistics indicate a large part of the Serbia and Montenegro population had access to safe drinking water in 2000, there are unsatisfactory trends both in quality and in coverage and service, especially to rural areas and urban slums (see Section 7 for details). Similarly, although 99.6 percent of the Serbia and Montenegro population is reported to live in a household with sanitation services of some kind, most rural households have septic tanks, many of which have been found to be improperly designed and situated.

19. *Proportion of population with access to improved sanitation and proportion of population with access to secure tenure.* People in urban slums, mainly refugees, Roma, and IDPs, do not have access to safe sanitation facilities. Problems of access to safe drinking water and sanitation threaten to reverse the positive trend in decreasing child mortality rates since the 1990s.

Table 1: Serbia and Montenegro and Millennium Development Goals

Indicator	1990	1995	1999	2000
Reduce child mortality				
Under-five mortality rate (deaths/1000 live births)	26.0	19.0	16.0	NA
Infant mortality rate (deaths/1000 live births)	23.0	13.1	13.6	12.8
Ensure environmental sustainability				
Forest area (million ha)	2.995*	2.934*	NA	2.887* *
National protected area (percent of total land area)	NA	3.24	NA	3.23** *
GDP per unit of energy use (US\$ / koe)	1.85	1.28	1.28	
CO ₂ emissions (MT per capita)	3.6 ^{^1}	2.9		4.6***

Notes: ¹ 1991.

Sources:

^^ Chapter 12, "Breaking with the Past: The Path to Stability and Growth," 2001

* Statistical Yearbooks of Yugoslavia; Federal Statistical Office, "Bulletins Forestry"

** FAO Global Resources Assessment, 2001

*** The Little Green Data Book, 2001

20. *Environmental sustainability.* The gross domestic product (GDP) per unit of energy used declined from US\$1.85/koe in 1990 to US\$1.28/koe in 1999, showing an increase in energy intensity of 13 percent. This compares poorly with the Europe and Central Asia (ECA) average of US\$2.4/koe and underlines the need for improved energy efficiency and reduced demand through the elimination of energy price subsidies. Serbia and Montenegro's carbon dioxide emissions of 4.6 metric tons per capita were less than the ECA average in 2000. However, these emissions appear to have increased since the early 1990s, and low-cost options for their reduction are plentiful. Hence there is room for improvement.

21. *Forests.* Forests cover 28 percent of Serbia and Montenegro's land area. This percentage is lower than the ECA region average of 40 percent, and there has been a decline in forest coverage of 0.4 percent annually during the past 10 years, mainly due to fires, pest infestation, illegal logging, reduced afforestation, and overharvesting. While the annual reduction is not very dramatic, it ignores the decline in forest quality that has accompanied the illegal logging and the lack of proper forest management. Overall, there is a need to move to better and more sustainable use of forest resources.

22. *Biodiversity.* About 3.3 percent of Serbia and Montenegro's total land area is protected for conservation purposes, which is the same as the ECA average.³ In Montenegro, this proportion is 7.1 percent, while in Serbia it is 2.7 percent. Serbia has plans to increase the share of its land under protection, as discussed later. There is still, however, a need for better management of Serbia and Montenegro's globally significant biodiversity. (See Section 10.)

1.4 Poverty and Environment Linkages

23. The environmental MDGs are important in their own right but also because meeting some of them contributes to a reduction in poverty, which is probably the most important MDG of all. The environment-poverty linkage is especially strong when the poverty is defined in the broader sense to include not only income and consumption but also health and vulnerability. As for most transition countries, a number of important poverty-environment linkages exist in Serbia and Montenegro. These are summarized in this section under the headings environmental health and poverty, vulnerable social groups and environmental degradation, poverty and natural resource degradation, and poverty and vulnerability to natural disasters. Boxes 1 and 2 provide summary information on the state of poverty in Serbia and Montenegro, as reported in the Interim PRSP draft documents. It is interesting to note that these documents focus on the income measure of poverty and pay less attention to the dimensions that are most susceptible to a deteriorating environment.

³ Protected area is defined as IUCN Categories I–IV.

Box 1: Poverty in Serbia

Poverty in Serbia has increased dramatically in the last 10 years. The middle class has disappeared, the number of poor has increased two-and-a-half times, and an increasing number of people live just above the poverty line. Available statistics for 2000 indicate that 2.8 million people, about one-third of the population, live in poverty, defined according to national criteria as having an income of less than US\$30 per month. About 1.8 million people, 18 percent, live in absolute poverty, with a monthly income of less than US\$20.⁴ Additionally, a considerable group lives close to the poverty line and can easily fall below it in the absence of well-targeted measures.

The urban population has suffered more from the fall in living standards and the spread of poverty than the rural population. There is a considerable difference in poverty incidence between these two categories of population (39.7 percent in urban areas versus 29.4 percent).

Serbia's three regions—Vojvodina, Central Serbia, and Southern Serbia—differ in terms of level of development. Vojvodina is the wealthiest region; fewer than 10 percent of its municipalities are classified as underdeveloped according to the U.N. Human Development Index (HDI). In the central region, GDP/capita is slightly lower than in the Vojvodina, and there is a higher proportion (21 percent) of municipalities classified as underdeveloped by the HDI. But severe rural poverty is not widely observed. Southern Serbia is the largest region and also the poorest, least developed one. According to the HDI, 58 percent of municipalities there are underdeveloped. A substantial proportion (19 percent) of all municipalities are classified as severely underdeveloped. Widespread rural poverty has been a major determinant of the net outmigration recorded for Central Serbia and Southern Serbia during the period 1995–99.

The results of empirical research show that the main survival strategies of households in Serbia in the year 2000 were the reduction of needs, subsistence living, a decrease in savings or sale of property, and an increase in gray economy activities.⁵

Source: I-PRSP.

Box 2: Poverty in Montenegro

Poverty has increased in Montenegro during the past decade. A survey carried out in 2000 indicated that, depending on where the poverty line is set, 20–30 percent of the Montenegrin population can be considered poor. The unemployment rate stands at 86 percent, taking into account all types of employment (formal, informal, and multiple). It should be noted, however, that those engaged in informal activities may not hold full-time positions. Regional differences are also very strong. Northern inhabitants have a higher probability of living below the poverty line.

The negative socioeconomic trends experienced during the past decade in Montenegro have been, to a greater or lesser extent, offset by a number of coping mechanisms. Family support and income from informal activities (the gray economy) played an important role in preventing an even larger share of the population from falling below the poverty line.

Source: UNDP, "Employment, Labor Market and Standard of Living in Montenegro."

⁴ B. Bogicevic, G. Krstic, and B. Mijatovic, "Poverty in Serbia and Reform of Governmental Support for the Poor," Center for Liberal-Democratic Studies, 2002. The study is based on pre-reform data from the first half of 2000 and does not take into consideration the approximately 600,000 refugees and internally displaced persons currently accommodated in Serbia.

⁵ According to a survey in 2000, at least 30 percent of the economically active population was involved in activities of the gray economy, with monthly incomes that were higher than the ones in the regular economy.

Environmental health and poverty

24. *Water and sanitation.* Health status data indicate that water-related diseases have not been a significant contributor to the burden of chronic or acute disease in Serbia and Montenegro (WHO, 2000; UNICEF, 2001); indeed, there has actually been an improvement in some key indicators. Mortality among infants and children under five, a common indicator of water supply and sanitation conditions, has declined by nearly half during the 1990s and is associated with improved household sanitation and improved treatment for diarrhea and acute respiratory disease. The under-five mortality rate for diarrhea disease declined by 38.2 percent during the 1990–97 period (UNICEF, 2001). There are signs, however, that the picture is changing. The deteriorating quality of drinking water may well reverse the positive trend in the under-five mortality rate. Some recent epidemiological studies on health and environment have found a negative effect on health of living conditions and drinking water quality (Mihajlovic-Vukmirovic et al., 2001). The situation is particularly acute for urban slums populated by refugees, Roma, and IDPs (see “vulnerable populations” discussion that follows).⁶ The impact of inadequate water supply on the poor is particularly high as they lack the resources to purchase bottled water.

25. The Serbia and Montenegro public health sector uses a risk-factor-and-exposure approach to environmental health. Based on this, and given the information on water quality in terms of specific contaminants whose health impact is well known (such as arsenic, nitrates, carcinogens, and pathogens), experts draw conclusions regarding impacts of water on health. These conclusions are plausible and indicative of some serious health issues, but more underlying work is needed in this area to confirm these preliminary findings.

26. *Air pollution.* High ambient concentrations of certain pollutants, particularly small particles, have been associated in many international epidemiological studies with various negative health impacts. Concentrations of such particles, of soot, and of SO₂ in industrial settlements in several Serbian cities are within the critical range that has been associated with negative health impacts. (See Annex 1.) Air pollution is not only a problem for the poor but, as in other parts of the world, it is most likely that the vulnerable and the poor are least able to protect themselves from exposure by living in cleaner and safer areas and therefore suffer the most from such exposure.

27. *Waste management.* Lack of proper waste management creates public health hazards for the poor in a number of ways. First, as described earlier, hazardous waste is not sorted but is instead dumped without any prior processing on regular, mostly illegal, waste dumps. Urban poor people, notably Roma, who make a living by scavenging on waste dumps without any kind of protection or training in the handling of waste are exposed to risks of injury and infection from sharp materials. Second, as no leachate collection and treatment systems exist at any landfills, leakage from waste dumps can contaminate groundwater, which is the drinking water source for poor communities living nearby and relying on wells. Third, inadequate incineration or incineration of unsuitable materials can result in the release of pollutants in the air and constitute a health hazard to nearby Roma, refugee, or IDP communities.

⁶ The poor, particularly women and children, are generally most affected by environmental health problems, and traditional environmental hazards—lack of safe water and sanitation, indoor air pollution, and exposure to disease vectors—play by far the largest role. Indeed, poor people are acutely aware of how poor environmental health affects their ability to move out of poverty (World Bank, 2002).

Vulnerable social groups and environment degradation

28. Roma, refugees, and IDPs residing in special camps or near waste dumps in urban areas are among the most vulnerable social groups in Serbia and Montenegro. The rural poor in resource-poor Southern Serbia also deserve attention.

29. In Serbia, there are an estimated 600,000 refugees and displaced persons who are among the most vulnerable, with inadequate housing and a much higher unemployment rate than the local population. Around 20,000 refugees and 11,500 IDPs accommodated in collective centers clearly represent the most vulnerable part of this group.⁷ An estimated 25 percent of them are below the World Food Programme poverty line. Among this extremely poor section of the population, living in unhygienic and unsanitary conditions, are the worst economic and social cases—the unemployed, the elderly, single parents, orphans, and those who are unable to care for themselves.

30. The Roma minority is a key poor-risk group in Serbia and Montenegro. There are thought to be 400,000–500,000 Roma in Serbia and Montenegro, concentrated mainly in southern Serbia, around Belgrade, Vojvodina, and Montenegro. Within Roma settlements, access to utility and public services is often very limited or nonexistent; the most serious problems are lack of access to electricity, water, sewage, and garbage collection. The prevalence of communicable disease associated with poor living conditions, such as hepatitis and trachoma, was confirmed in discussions with public health officials in both Serbia and Montenegro. Oxfam conducted a study on the health status and living conditions of Roma settlements in Belgrade and Kragujevac in 2001 (Oxfam 2001). The results clearly point to inadequate basic services and the consequent health impacts:

- 19,000 Roma people live in 64 “unhygienic” settlements (meaning no piped water in the house or yard), usually in shacks, in Belgrade
- Health was identified by the Romas as one of their major problems
- Life expectancies are short (only 1.4 percent were older than 60), and living conditions are one of the contributors to early mortality
- 63.6 percent of households get their water from public fountains
- More than half have outdoor latrines and a third have no latrines at all; in the majority of settlements there are no sewage system connections or septic tanks
- 30 percent of Roma children below 6 had diarrhea during the two weeks immediately prior to the survey, a figure three times higher than in the general population
- 45 percent of Roma children are malnourished
- More than 50 percent of children between the ages of 7 and 19 do not attend school

Poverty and natural resource degradation

31. While poverty is less widespread in rural areas than in urban areas, thanks mainly to the resilience of agricultural production, there are significant regional differences in Serbia and Montenegro (see Boxes 1 and 2). The rural poor in Southern Serbia and those living in mountainous parts of Montenegro are highly dependent on the quality of natural resources. Land

⁷ UNHCR and ICRC data, 2001.

degradation as a result of overgrazing and deforestation is likely to be a significant cause of increased poverty in such regions, and although this is generally recognized as a link between poverty and the environment, the detailed impacts in Serbia and Montenegro need to be established and estimated. Based on these, the governments may consider promoting income-generating activities that are environmentally friendly and use natural resources in a sustainable manner. Examples of such activities include ecotourism; growing high-value crops, fruits, and vegetables; and manure management. Successful regional experiences in achieving sustainable resource management while reducing rural poverty, such as in Turkey, may be considered for replication. (See Annex Box A5.)

32. In addition to being affected by environmental degradation, the poor also cause it, in certain circumstances. One mechanism by which this can happen is increased reliance of the rural poor on fuelwood for heating when electricity prices rise. As they are not serviced by district heating or natural gas networks and cannot afford to use electricity, they resort to increased uncontrolled wood cutting, exacerbating land degradation. Fisheries is another area where poverty can exacerbate resource degradation through overfishing, leading to a spiral of lower yields and increasing poverty. As discussed in Section 10, there is evidence of overfishing and resulting decreases in fish stock in the Lake Skadar area, one of the poorest regions of Montenegro. (See Annex Box A11.)

Poverty and vulnerability to natural disasters

33. Serbia and Montenegro are highly exposed to earthquakes and flood risks. The most severe earthquake in the country was in Montenegro in 1979, when 131 persons were killed, 1,000 persons were injured, and 100,000 homes were destroyed. Its damage was estimated at US\$2.7 billion. During the 1990s, more than 200,000 hectares were affected by floods, which resulted in significant economic, social, and environmental losses. The poor are particularly exposed to flood and earthquake risks, notably due to settlements on riverbanks and poor quality housing constructions. The Government of Montenegro indicated that this is particularly pronounced in the Tara and Lim basins in the northern part of Montenegro, which is also among the poorest parts of the country. The country lacks a comprehensive preparedness, mitigation, recovery, and reconstruction strategy to deal with this problem.

1.5 Recommendations

34. It is recommended that the Governments of Serbia and of Montenegro:

- *Conduct studies on linkages between rural poverty and environmental degradation, with particular attention to vulnerability to degradation of natural resources, such as water and land; vulnerability to natural disasters; and the threat of increased fuelwood cuts as a result of electricity price increases.*⁸
- *Prepare a comprehensive national disaster management strategy, including preparedness, mitigation, recovery, and reconstruction.*

⁸ As an aid to this, it would be important to include natural resource use in regularly implemented household surveys on poverty.

2. Macroeconomics and Environment Linkages

2.1 Main Issues

35. As with most countries in the region, under central planning the economic structure in Serbia and Montenegro was characterized by heavy industrialization, price controls, and major inefficiencies in the way resources were used. Energy, in particular, was underpriced relative to its world value, but so were mineral resources, timber, and water. As Serbia and Montenegro moves to a market-based system and as prices start to reflect the scarcity value of the inputs and outputs, there will be major changes in the structure of the economy. Taking the experience of other transition economies in the region as a guide, the recovery of heavy industry is expected to be modest. Agriculture faces significant structural problems, including low productivity, low quality, and continued heavy state intervention in prices and quantities traded, making export-oriented growth an unlikely prospect for the short to medium term. The services sector will likely continue to grow significantly in the near to medium term. The Government of Montenegro also intends to significantly increase the share of tourism services in its economy, for which it has an excellent basis in natural resources and cultural heritage.

36. The environmental impacts of past use of natural resources were significant but somewhat different from those in market-based economies. Cheap energy resulted in high levels of waste, with consequent high levels of pollution intensity (that is, emissions per unit of output) in industry. Similarly, in an attempt to increase agricultural output, fertilizers and pesticides were heavily subsidized, leading to excessive use. Agricultural non-point source pollution of groundwater and surface waters was substantial. Large, intensive livestock farms, lacking proper wastewater treatment facilities, constituted significant point sources of pollution. At the same time, the environmental burdens of a typical market economy were not so great: there were lower levels of municipal household waste and vehicle pollution, congestion was less of an issue, and unplanned land use in urban and coastal areas was less evident.

37. As the economy shifts to a market-based system, it faces new environmental problems. The immediate difficulties lie in the lack of funds to monitor and ensure compliance with environmental regulations and the willingness of regulators to overlook noncompliance when there is a strong imperative of continued production and employment. Low pay and morale in the regulatory agency also mean developers can get away with ignoring land use regulations. These issues are discussed further in Section 3, where the financing of environmental expenditures and the use of market-based instruments are discussed, and in Section 4, where changes to the institutional framework, including greater transparency and decentralization, are discussed. Other major challenges include the need to ensure that the transformation to a market economy is as efficient and effective as possible and that the appropriate regulatory structure for the environment is in place. The key issues in this regard are reforms in the pricing of natural resources and the treatment of environmental liability in the privatization process. These are discussed in the next sections.

2.2 The Impacts of the Pricing of Energy and Water

38. The economy of Serbia and Montenegro relied heavily on subsidized energy and raw materials to achieve its goals of import substitution and domestic food security. The system was supported by a myriad of price distortions that underpriced natural resources, promoted polluting industries, and led to highly inefficient energy and raw material use. A lack of investment capital and an international embargo prevented upgrading to cleaner technologies. Subsidized tariffs also resulted in large budget drains at the central and municipal levels, which crowded out other needed public investments. In addition, more recently, unclear responsibilities for past environmental damages have made it difficult to ensure that remediation and protection measures are adopted in industries slated for privatization.

39. The governments' macroeconomic reforms aim to restore economic stability and resume growth. An important policy in this regard, which also has positive environmental implications, is the phasing out of subsidies and liberalization of prices on energy and natural resources (notably, water and wood). This will not only reduce budgetary and hence inflationary pressures associated with the provision and management of these services, it will also provide incentives to consumers for more-efficient use and free up funds for more direct targeting to the poor. More-efficient energy and water use will reduce air, water, and soil pollution. Furthermore, reduced energy demand will lower the country's growing dependence on foreign fuel imports, which add to the current account deficit, overall debt levels, and fiscal imbalance.

40. In view of this, it is encouraging to note that under its macro and sector reform programs, Serbia and Montenegro reduced energy subsidies in 2001 and 2002. As a result, the quasi-fiscal deficit due to these subsidies has fallen by 50 percent (around US\$550 million). The extension of the program to raise Serbia and Montenegro's energy prices to world levels will bring further benefits in these areas and should be continued, as the governments intend. In designing the new tariffs, however, it is important to take account of the effects of electricity price increases in terms of increased use of coal and wood by the poor and those who are not serviced by district heating and gas networks. As noted earlier, such shifts in energy use can increase deforestation and cause health damages through higher levels of indoor air pollution. Experience in other countries has shown that measures to address these impacts can be taken without compromising the subsidy phase-out program.

41. Although good progress has been made on the energy side, the same cannot be said for the pricing of water and waste services by municipalities. The charges are currently so low that the service is poor and the infrastructure is deteriorating fast. The governments have started action to raise prices in some municipalities, but so far only a handful of utilities have acted in this direction. This program should be expanded as much as possible. Fiscal reforms at the municipal level should increase service charges and collection fees for wastewater and waste management to levels that cover at least operation and maintenance costs, with targeted support for vulnerable users being included as part of the reform program.⁹

⁹ See World Bank, "Maintaining Utility Services for the Poor: Policies and Practices in Central and Eastern Europe and the Former Soviet Union," 2000.

2.3 Privatization

42. Both republics have embarked on large-scale privatization programs. In Serbia, the Privatization Agency plans to privatize 1,120 enterprises.¹⁰ Most of these companies have had few if any investments in recent years. As Box 3 shows, the privatization process can fail if environmental liability issues are not addressed in a timely manner. The most important issue relates to the damages caused by the enterprises' operations up to the time of privatization (known as past liabilities). Given social rather than state ownership of these assets, it is unclear whether the state is liable for such damages. Clearly, the possibility of being held liable for past environmental damages constitutes a significant risk for reputable investors, leading them either to be uninterested in bidding for the enterprise or to offer a much lower price than they would otherwise. Hence, there is an urgent need to clarify this issue. Experience in other countries, such as Bulgaria, indicates that it may be advisable for the state to accept such liabilities and take remediation measures, including investments, at the time of privatization. This necessitates credible commitment and ability by the state to fund such measures.¹¹

Box 3: Benefits of Incorporating Environment into the Privatization Process

Contrary to a common misperception, addressing environmental considerations during privatization does not impede the process. On the contrary, it reduces investment risks and uncertainties about potential future costs. Foreign investors in particular are concerned about possible unfair treatment regarding liability for past damages and about unexpected environmental requirements. In addition, as a condition for providing loans, international financial institutions increasingly require environmental disclosure and a financial accounting for environmental liabilities in corporate financial records.

While environmental issues typically represent only a small part of all investment risks and costs, they become deal breakers if there are uncertainties about potential environmental liabilities, especially if the risks are large compared with the value of the enterprise. Of particular interest from the environmental point of view are privatization transactions in such sectors as mining, ferrous and nonferrous metallurgy, petroleum refining, chemicals, and power. From the privatizing government's perspective, including clear environmental requirements in the privatization transaction can facilitate privatization, generate higher revenues, and avoid delays and future disputes.

In 1992, for example, the government of Peru embarked on the privatization of its biggest mining company, Centromin Peru. First Boston Bank and a local company, Macroconsult, prepared the company for privatization, setting a base price of US\$340 million and seeking commitments for an additional US\$240 million in investments over three to five years following privatization. The enormous productive potential of the company generated high interest: 28 companies from several countries, including Canada, China, Japan, and the United Kingdom, signed up for the auction. A couple of days before the auction, however, reports appeared in the domestic and international media about possible large environmental damages. None of the investors submitted proposals during the first call for bids in April 1994. The company was restructured and sold later, after environmental problems had been thoroughly addressed.

Source: Adapted from "Environmental Implications of Privatization," Pollution Management In Focus, World Bank, No. 5, 1999.

¹⁰ Enterprises slated for privatization include large livestock farms, chemical industries, wood and agro-processing (tobacco, fruits, vegetables, sugarbeets, meat, and grain), textiles, and minerals (aluminum, iron) processing.

¹¹ In Bulgaria, this was done through a Structural Adjustment Facility, which undertook to meet the government's commitment for cleanup of past operations. It has provided experience on how the government can address similar hot spots at other facilities that the government intends to privatize and hold to a high standard of environmental management. The project is expected to take 4.5 years and to cost US\$25 million, of which the Bank financed US\$16 million.

43. Another issue pertains to liability for current environmental impacts—that is, environmental impacts arising from the enterprise’s operations after the transfer of ownership. In Serbia, the current Law on Privatization may be interpreted as assigning this liability to the new owner. To ensure that mitigation takes place, privatization documents should include clear environmental performance objectives. An adequate regulatory capacity is also needed to encourage enterprises to adopt more environmentally sustainable practices.

44. A precondition to settling liabilities for remediation and mitigation activities is a credible assessment of past and current environmental impacts of the enterprise in question. This is achieved through the implementation of an environmental audit by an independent expert during the privatization process and the incorporation of the expert’s findings in the prospectus of the enterprise to be privatized. This procedure is now internationally recognized as due diligence. The Government of Serbia is now preparing to revise the Law on Privatization to incorporate the requirement of environmental audits for to-be-privatized enterprises that are environmental offenders as part of regulatory reform component of the upcoming Sectoral Adjustment Credit. At the same time, the role of the Serbian Ministry for the Protection of Natural Resources and Environment (MENR) in the implementation and approval process of environmental audits should be clarified based on consultations with the ministry. The legal revision should also clarify the question of who holds liability for past damages and how these will be remediated.

45. Montenegro is also looking to privatize some of its large enterprises that are environmental hot spots, including the Aluminum Kombinat. It appears, however, that environmental concerns are not being taken into account during this process. A collaborative effort between the Privatization Agency and the Ministry of Environment and Physical Planning (MEPP) to identify current and past damages and draw up remediation and mitigation plans would benefit not only the environment but also poor people living in the vicinity of those hot spots.

2.4 Recommendations

46. The following actions are recommended to address macroeconomic and environment linkages:

- Continue phasing out subsidies on energy and utility prices to induce more-efficient consumption behavior, prevent inflationary quasi-fiscal deficits, and save scarce public funds for other priority expenditures, such as education, health, and environmental public goods. Where necessary, target income transfers to those who cannot afford the increased energy and utility prices.
- Promote the development of an environmental regulatory system that better meets the needs of a market economy, with greater use of market-based instruments of control and greater transparency and devolvement in the regulatory process. Related to this, develop a capability to analyze the environmental programs and policies that are not themselves necessarily focused on the environment. Referred to as strategic environmental analysis, this can contribute to better integration of environmental concerns in economic policymaking.

- Require environmental audits of industries to be privatized to clarify past and current liabilities as part of the privatization process. Support intersectoral cooperation among the environmental agencies, the Privatization Agency, and city administrations to harmonize such legal requirements.

3. Environmental Expenditures and Financing

3.1 Main Issues

47. There are four main problems with environmental financing in both republics. First, while the state provides some support to industry for investment in environmental protection (as it does in almost all transition countries), the basis for this support and the way projects are selected could be improved in terms of priority setting and accountability.¹²

48. Limited public funds should be used to finance investments in public goods areas, such as municipally owned water, sewage, and district heating utilities, the protection of biodiversity and natural resources, or the monitoring and prevention of irreversible environmental impacts. Furthermore, allocation of funds should follow a prioritization process based on benefit-cost analysis and be carried out in a transparent manner. Some positive signs have been observed in this area. In Serbia, the recently introduced competitive method to allocate public funds for environmental projects sets priorities to some extent in that it considers cost-effectiveness and some measurement of benefits to be achieved. The method also appears transparent. Both Ministries of Environment need to build capacity to quantitatively assess the benefits of project proposals for society against the costs.

49. Second, economic instruments appear to be directed more to generating revenue than to providing incentives for environmentally responsible behavior. The most striking example is the 1-percent tax on the total investment amount that is levied at the EIA stage. Not being related to environmental performance in any way, this tax serves as a disincentive for businesses to create much-needed investments. Such a fee is only justified if it covers no more than the administrative costs of reviewing the EIA of an investment proposal. If the aim is to induce industry to pay for the remediation and mitigation of environmental damage, then instead of having a flat tax, an appropriate environmental management system should be put in place, accompanied by strong monitoring by the environmental agencies.

50. As in all western industrial countries and in the more advanced transition countries, there is an important role for market-based instruments for environmental regulation. An example of positive use of such instruments in other countries is given in Section 5, dealing with energy air pollution. Such instruments should provide an incentive to reduce the environmental burden that is being targeted, they should not result in unreasonable economic costs to the polluter (and thereby indirectly to society), and they should be easy to enforce. Examples of the use of such instruments in western industrial and transition countries are given in Annex 3, and a number are being considered in Serbia and Montenegro.

51. Another shortfall of the system that should be noted is the extremely low level of fines for environmentally unfriendly activities and abuse of utility services. In particular, the fines for

¹² Although both republics stipulate the “polluter pays” principle, in reality this is rarely implemented. Because of a lack of access to operating or investment capital by industry and the insolvent financial status of many polluters, the state violates this principle by supporting environmental investment in industry. This is a common feature in all transition countries, but it needs to be implemented in a more efficient manner and with the recognition that the support cannot continue indefinitely.

dumping waste illegally are in no way a deterrent. The level of electricity stolen through unauthorized connections is higher than average in the region, leading to heightened losses of power utilities. Drastic increases are needed in fines against such abuses.

52. The third problem is that, as a legacy of an economic system that was based on providing industry with cheap energy and raw materials, the charges for natural resources do not reflect the economic costs of extracting and managing them sustainably. This leads to overexploitation of resources as well as to insufficient capacity to manage them in a sustainable manner. Ideally, charges should be based on the full costs of extraction and management. In the case of forestry, management includes, for example, the costs of forest fire and pest management, monitoring, and enforcement of sustainable logging regulations. In this regard, it is a positive development in both republics that wood pricing is moving toward competitive pricing, which, if carried out without collusion and with a floor price that covers the costs just described, should result in higher stumpage prices. The revenues from this, however, may not be sufficient to provide for the full management of all public forests, in which case some continued support will be needed from public funds.

53. Finally, public-sector expenditures by environmental institutions in both republics appear to be less than 1 percent of GDP (Annex 3). This is not sufficient to cover basic monitoring and enforcement functions of government. Furthermore, the total amount of expenditures is believed to be only slightly above this figure, given overall government budget cuts and financial difficulties faced by private enterprises.¹³ This places Serbia and Montenegro significantly below most transition countries, where annual environmental expenditures have averaged about 2 percent of GDP. Harmonization with EU environmental legislation will necessitate even higher expenditures. Based on the experience of recent EU members, this may cost about US\$1,500 per person per year over 15 years. Again, based on the experience of other countries, only about 10–15 percent of the financing to cover this cost is likely to come from the EU in the form of grants. The rest has to be found through internal resources, which clearly points to a need for substantial contributions from the private sector.¹⁴

54. The financing of public environmental expenditures previously came from earmarked taxes and charges. But now all such charges go to the general budget, from which allocations are made to the environment spending agencies. Those responsible for environmental expenditures complain that this has reduced the funds available and want the old system reintroduced. Although their argument has some reason, this is not a move that the Bank would support. The case against earmarking is that expenditures should be related to the outcomes that have to be achieved and not to the sources of funds, and that having earmarked funds results in reduced overall efficiency in the national system of public expenditure. The one exception to this rule is when the environmental charge is specifically for a service (such as delivery of water or collection of waste). In that case, the amount collected should be kept for the purpose of providing the service and not go to the general budget. This cannot be argued, however, for

¹³ It should be noted that this estimate does not include local environmental funds on which the authors of this report did not have sufficient information. The amounts involved, though known to be small, are considered critical for some public environmental expenditure.

¹⁴ Another source of financing for local communities will be the 5 percent of privatization proceeds, which by law have to be transferred to the local administration that has jurisdiction over the enterprise. These funds are to contribute to infrastructure and environmental investments.

emissions charges or taxes levied on products (such as gasoline), even if the charge for environmental reasons.

3.2 Recommendations

55. The recommendations on environmental expenditures and financing are as follows:

- Focus public environmental expenditures on public goods that the private sector is unlikely to fund sufficiently, such as environmental monitoring, biodiversity conservation, and prevention of irreversible environmental impacts. In a transparent manner, allocate public funds to priority actions and projects that are cost-effective or have the highest benefit-cost ratios.
- Replace the “1-percent environment tax” levied on new investments that pass the EIA with a fee that covers the administrative costs of processing the EIA of an investment.

4. Institutional Framework for Environmental Management

4.1 Main Issues

56. Serbia and Montenegro inherited a fragmented and in many ways inconsistent legal and institutional framework, in which the demarcation of functions between the federal and republic-level government environmental institutions as well as among various line agencies and municipalities was often unclear. Weak monitoring and enforcement of environmental standards and regulations in Serbia and Montenegro can be traced to limited mandates, insufficient staffing (number and capacity), lack of modern equipment in inspection departments, rather low levels of fees and fines combined with low collection rates, lengthy court procedures, nonexistent or incomplete emissions data from enterprises, and the difficult economic situation of many enterprises. In both republics, many industries operate without an environmental permit and do not comply with environmental standards. Although environmental agencies carry out regular inspections, which may lead to administrative or legal charges, the relatively low risk of being caught, combined with the modest amount of standard fines and their low collection rate, diminish the incentive for enterprises to comply with the law, given their often very difficult financial situation.

4.2 Key Reforms to the System of Regulation

57. *Institutional and legal framework.* Serbia and Montenegro's institutional and legal framework is currently in a flux as a result of the ongoing, gradual shift of legislative and executive powers from the federal level to the republics and the revision of various laws in parallel with the ongoing economic transition. In June 2002, the Serbian government upgraded the environmental authority from the level of a directorate to a ministry. Currently, the Serbian Parliament is reviewing a new Law on Environmental Protection System. The law is comprehensive and ambitious: its objectives are to develop a consistent and modern legal and institutional system for environmental protection that is harmonized with the EU's framework and that will improve horizontal and vertical cooperation and raise responsibility and efficiency. The Montenegrin Law was issued in 1996, and according to the Ministry of Environment and Physical Planning, all recently issued laws and bylaws are compatible with relevant EU legislation. In Serbia, it is proposed that an Environmental Protection Agency (EPA) be established in 2004 to implement the new law. There is also some interest in Montenegro in establishing an EPA.

58. *System of environmental impact assessments.* The number of EIAs increased from an average of 50–60 per year to about 600 in 2000 and more than 1,300 in 2001. However, the EIA system is plagued by shortcomings in both republics—notably, an overly general list of activities subject to mandatory EIA procedures, with no cost or size thresholds and no distinction based on type of enterprise, nor with any consideration of magnitude or scale of impact. In addition, the capacity of environmental authorities to screen projects, review EIAs, and stipulate and enforce conditions and mitigation plans is very weak due to staff shortages and lack of funds. Further, local authorities often issue permits despite missing or incomplete EIAs, so that a large number of activities or projects start up before adequate mitigation measures are put in place. In the current setup, however, there are considerable fiscal interests in the EIA procedure, since the

EIA regulation requires a fee of 1 percent of the total investment costs of a project. In 2001, this generated revenues of around US\$183,000 for the Republic of Serbia and is thus an important source of revenue, which poses the risk that environmental authorities might be held captive to a suboptimal or dysfunctional system. To the extent that the fee is a charge for the administrative services related to the processing of an EIA it is justified; otherwise it should be scaled down (see Section 3).

59. In addition to the system of EIA, there is a need for environmental considerations to be included in the assessment of major policy reforms outside “the environmental sector.” These include changes to land use, such as allowing the development of a tourism facility on previously virgin land, opening up areas for urban use or reuse, changing trade policy, and so on. In such cases the appropriate tool is a strategic environmental assessment, which should be prepared by an intersectoral group that includes representatives from the Ministries of Environment as well as Finance and the relevant line ministries. The need for this was underscored in Section 2. The capacity to carry out such assessments, however, needs to be developed.

60. *Public disclosure and participation.* Civil society, the private business sector, and nongovernmental organizations (NGOs) are weak. Within the business sector, environmental issues are not high on the agenda, as environmental business associations and committees are just being established. At the moment there is a lack of private-sector participation in different economic sectors related to the environment, particularly waste management, water supply and sanitation in large cities, and forestry and national parks activities. Local NGO involvement is limited mainly to awareness raising, environmental education, and information dissemination, although a large number of NGOs want to be more involved in environmental protection activities. NGOs identify isolation in the 1990s, lack of funds, lack of adequate technical equipment and staff, and an inadequate legal framework as the reasons for the underdevelopment of the NGO community.

61. *Harmonization with EU directives.* Central and local environmental institutions in both republics are keen to harmonize environmental legislation with the EU *acquis*.¹⁵ In Serbia, with Finnish and other assistance, the environmental law has been revised, which is much in line with the Integrated Pollution Prevention and Control directive, and work has begun to align relevant laws with the EU Directive on Environmental Impact Assessment and Public Access to Information. The MENR would also like to harmonize with EU directives that deal with water quality and waste management. Experience in EU and EU candidate countries shows that it is quite costly to implement these directives (Section 3), which implies that transition to full implementation will have to be undertaken over an extended period of time and that only those *acquis*-related actions that are of the highest priority will be feasible in the immediate future.

¹⁵ *Acquis (communitaire)* may be informally defined as the body of European Community legislation that would-be EU member countries have to incorporate into their national legislation and implement.

4.3 Recommendations

62. The following actions are recommended to address institutional and legal problems.

- *Environmental impact assessment.* Amend EIA regulations and procedures by introducing thresholds, shortening the list of projects or activities for which an EIA is required, improving cooperation with municipalities, and introducing strategic environmental assessment for new policies and programs with considerable potential environmental impact. Eliminate or at least reduce the “environment tax,” which does not provide an incentive for better environmental behavior but instead constitutes a disincentive for new investment.
- *Environmental institutions.* Clarify demarcation of competencies between ministries and between the federal, republican, and municipal levels; develop or strengthen interministerial coordination mechanisms and institutions; establish an Environmental Protection Agency in Serbia (proposed for 2004); and strengthen staff capacity through training. As regional capacity varies considerably, some regions need considerable institutional strengthening if they are to fulfill their new roles.
- *Environmental monitoring.* Adapt the monitoring system to create a comprehensive environmental information system, and identify investment needs for new equipment and training needs.
- *Compliance plans and remediation programs for enterprises.* In line with existing legislation, develop realistic compliance plans and remediation programs for the most polluting enterprises, including credible sanction mechanisms, such as sufficiently high fines for noncompliance.
- *Environmental action plans.* Seek donor funding for the organization of a stakeholder consultation seminar focused on prioritization of actions and identification of financial resources to carry them out. In addition, prepare sector strategies for high-priority policy areas, such as biodiversity conservation, climate change mitigation, forestry, and waste management (in Montenegro). These activities would constitute, in the spirit of a National Environmental Action Plan (NEAP), an important follow-up to this report and other strategic environmental documents prepared for Serbia and Montenegro. A full NEAP, however, starting from scratch in identifying and developing environmental priorities, is not necessary at this stage, given the work that has already been done on these issues.
- *Environmental information, awareness, and public participation.* Take a more proactive position in providing properly formatted, digestible environmental information to the general public, improve access to environmental information, create a legal framework, and encourage active public participation in the environmental decisionmaking process.
- *Environmental legislation.* Complete and adapt the existing legal framework, with a focus on compliance and enforcement, harmonizing its key elements with relevant EU

Directives where practical, and paying special attention to enforcement capacity, compliance costs, and monitoring requirements.

- *Environmental inspection and enforcement.* Extend mandates, train and increase staff, and upgrade equipment.
- *International environmental policy.* Clarify institutional responsibilities between federal and republican levels regarding the global environment; initiate the process for ratification of priority multilateral environmental agreements (mainly the Danube River Protection Convention, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and the Aarhus Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters); and intensify work on international regulatory instruments for subregional, transboundary issues, which due to the breakup of the former Yugoslavia are no longer of domestic nature and thus lack an adequate regulatory framework.
- *Cooperation with business sector and NGOs.* Strengthen cooperation with NGOs and with the business sector through ongoing planned harmonization of environmental legislation with EU directives, ISO 14000 certification, and development of compliance plans and remediation programs for enterprises. More generally, create a better business environment and incentives for private-sector participation in environmental protection and natural resources management.

5. Energy and Air Pollution

5.1 Main Issues

63. Energy intensity per unit of GDP increased by 60 percent during the 1990s due to the decline in GDP and low energy prices. This is remarkably high; a few transition economies have experienced decreases in intensity, and some have had increases, but rarely of this magnitude. One reason is that current levels of energy prices do not provide any incentive to conserve. The burning of increasingly poorer quality coal and the lack of financing to maintain and upgrade decaying and inefficient energy infrastructure have also contributed to higher energy intensity levels. The deterioration of energy generation technology and of the distribution system, which caused large losses, is another main problem. These factors have a positive side as well, however, which is that they offer enormous scope for improvements in energy efficiency.

64. *Electricity generation.* A significant part of SO₂ and NO_x air pollution comes from energy generation plants, which run on poor-quality lignite coal. The situation is particularly problematic in the Kolubara-Obrenovac Corridor in Serbia, where 3,100 megawatts of lignite power plants as well as the mines from which the fuel is obtained are located. Poor air quality in the 26-mile corridor has resulted in high levels of respiratory problems in the region. The power plants there also have harmful impact on the groundwater quality through leachate from their two ash landfills. In Montenegro, MEPP's *Environmental Status Report* (2000) states that in the area of Pljevlja, the site of a thermal plant in an enclosed valley with humid weather and an absence of wind two-thirds of the year, the frequency of respiratory diseases is markedly above the average for the Republic. The Montenegro *Air Quality Report* (2001, p. 24) also states that "bad air quality causes some health problems, such as increased bronchial and laryngeal diseases, especially in the industrial regions of Bor and Pancevo of Serbia."¹⁶

65. *Transport.* Air pollution problems are of particular concern in Serbia and Montenegro's urban areas. In addition to power plants, vehicle emissions contribute an increasing proportion of total emissions, and the continued use of leaded fuel and high sulfur diesel for transportation needs is having an impact on health. The vehicle pool in Serbia and Montenegro consists to a large extent of old cars that run on diesel gasoline. This is only likely to change in the medium term, however, when the average income level increases.

5.2 Key Policy Reforms and Actions in the Energy Sector

66. Lead emissions are particularly dangerous, for even in low concentrations they can lead to mental development problems in children and affect the blood pressure of adults. The benefits of making the shift to unleaded gasoline have been found to be far in excess of the costs in so many countries that it is not necessary for Serbia and Montenegro to undertake such an analysis.¹⁷ Almost all transition economies in the region have now moved to phasing out leaded fuel, with the main difference being the time they take to do it.

¹⁶ In addition to air pollution, ash handling at coal power plants in the Federal Republic of Yugoslavia poses a threat to groundwater and rivers because of poorly constructed storage facilities. The health impacts of air pollution are also discussed in section 2.

¹⁷ See M. Lovei, 1998. "Phasing Out Lead: Worldwide Experience and Policy Implications," World Bank; M. Lovei (ed.). 1997. "Phasing Out the Lead from Gasoline in Central and Eastern Europe," World Bank.

Box 4: Phasing Out Leaded Gasoline in the Slovak Republic

Lead was used heavily in Slovakia (part of former Czechoslovakia) until the 1980s. The lead content of gasoline was gradually reduced from over 0.7g/l to 0.4g/l in 1983, to 0.25g/l in 1985, and then to 0.15g/l in 1989, followed by the total phaseout by the end of 1994. The market share of unleaded gasoline increased from 6 percent in 1992 to 100 percent in 1995.

Besides health considerations about the impacts of lead, another—mainly supply-driven—factor contributed to the drastic change in the lead use in gasoline. As a result of a technical upgrade undertaken in response to increasing quality requirements of its export markets, Slovnaft, the only refinery of the Slovak Republic, developed an overcapacity in the production of high-octane gasoline components by the early 1990s. About 70 percent of the vehicles in the country, however, were designed to use leaded gasoline, manufactured with soft engine valve seats, and vehicle turnover was very slow. In order to resolve the disparity between supply and demand, Slovnaft developed a fuel additive that enabled all motorists to use unleaded gasoline by providing the necessary lubrication to the soft engine valves in old cars. The additive has been marketed under the trade name ANABEX-99 as a universal fuel additive, which can be used in cars with or without catalytic converters.

The total cost of phasing out lead from gasoline production, including the annualized investment cost of the new isomerization and lubricant production units, the development of new additive, and the increased operation cost of unleaded gasoline, was estimated at US\$0.02 per liter of gasoline.

Slovnaft used its control over the gasoline distribution network to market the new brands. A differentiated pricing policy in favor of unleaded gasoline and a strong public information campaign contributed to the success of the total lead phaseout program and the acceptance of new gasoline by consumers.

Key factors of success in eliminating lead from gasoline in the Slovak Republic were:

- The commitment to environmental improvement in Slovakia by all interested parties
- Tax incentives for the production and consumption of unleaded gas
- General advances in environmental understanding and changes in consumers' values and mind set
- A long-term strategy for the modernization of gasoline production technologies
- Participation of a highly qualified, expert team in the Research Center of Slovnaft Refinery
- Highly motivated management teams in the Slovnaft and Benzinol companies
- Relatively centralized and easily controlled gasoline distribution network

Source: M. Lovei, 1998. "Phasing Out Lead: Worldwide Experience and Policy Implications," World Bank; M. Lovei (ed.). 1997. "Phasing Out the Lead from Gasoline in Central and Eastern Europe," World Bank.

67. Financing problems have limited the governments' ability to ban leaded gasoline, as it requires that domestic refineries be upgraded. By using economic instruments and carefully targeted support programs for industry, however, the phaseout of lead can be achieved in Serbia and Montenegro. Currently the price difference between leaded and unleaded gasoline is so small as to have an insignificant effect on behavior. Experience elsewhere has shown the success of a combination of lower taxes for unleaded than leaded fuel, targets for refineries to switch production to unleaded gasoline (with any refinery that exceeds its target being able to sell the excess reduction to another that cannot meet its target), and support to the refinery sector and to consumers in adapting to the changed fuel demands. Typically this is combined with some technical and financial assistance to the refineries (possibly out of the revenues from pollution or other environmental charges) to achieve phase out leaded fuel over 10 years. Box 4 describes how Slovakia achieved the same reduction.

68. In both republics, the poor financial situation in the energy sector in general is a result of low tariffs for energy that until recently did not cover operation costs, let alone maintenance or

capital recovery costs. In Serbia, the deteriorating energy sector has resulted in increased dependence on imported energy. Both Serbian and Montenegrin governments, however, have increased energy prices considerably and are expected to reach economic levels by 2005. As noted in Section 2, phasing out subsidies will provide an incentive for reduced energy consumption and prudent substitutions between fuels. Serbia is also in the process of establishing an Energy Agency.

69. The challenge related to price increases will be to ensure that the poor, who have limited access to capital but some of the highest energy expenditures relative to income, are not overly burdened by price changes. A related problem is a possible switch by the poor to more polluting coal or to illegally logged fuelwood, contributing to forest degradation.

70. The Government of Serbia also plans to address the problem of refinery upgrading to improve the fuel quality mix. The first phase will focus on repairs to plants to improve operating capacity, while the second phase will concentrate on higher quality gasoline and diesel output.

5.3 Recommendations

71. Recommendations to address the problems facing Serbia and Montenegro's energy sector and their impact on health and the environment are as follows:

- *Continue fuel-pricing reforms.* An important action that can be taken to reduce energy intensity and thus air pollution (including greenhouse gas (GHG) emissions) is to continue to phase out subsidies on prices of all fuels so that they are increased to levels that better reflect the economic cost of production and environmental externalities of supplying these fuels to Serbia and Montenegro's energy system. This policy measure would also reduce reliance on energy imports (as demand would likely fall) and fiscal deficits (to the extent that subsidies and energy-related imports are reduced). Greater revenues in the energy sector would help to fund infrastructure upgrading and provide incentives for substitution between fuels and for switching away from relatively expensive electricity-based heat to more environmentally friendly district heat and natural gas. In terms of the environment, air pollution's negative impact on health would be reduced.
- *Develop energy efficiency strategies.* Both Serbia and Montenegro are working to complete energy strategies, and an energy efficiency agency has been established in Serbia. In addition to price reforms, energy efficiency programs can help reduce consumption levels by promoting new energy-efficient and heat-saving technologies as well as more traditional measures, such as installing insulation and window caulking to prevent heat loss. Eco-funds aimed at energy efficiency improvements by the private sector and individual homeowners, possibly supported by a debt equity swap from donor countries, should be explored when developing strategies. Global Environment Facility (GEF) resources may also be used to remove barriers to the introduction of innovative technologies that have global benefits in the form of climate change mitigation.
- *Explore the potential for and feasibility of energy generation from renewable sources, such as small hydropower stations or geothermal resources.* Both Serbia and

Montenegro have conditions that may lend themselves to enhanced use of renewable energy sources and may complement efforts to increase energy efficiency. Before investment can be done, feasibility studies need to be carried out.

- *Address heavy air pollution from power generation in selected areas.* Steps need to be taken to address air pollution and ash problems in the Kolubara-Obrenovac Corridor, at the Pljevlja coal plant, as well as particulate problems and SO₂ emissions from the Kostalac power plant—all of which are having a high impact on health and the environment. Some of these assets are being upgraded with donor funding assistance, but some of the key environmental issues have yet to be addressed, including improvements to electrostatic precipitators and sulfur removal. An action plan needs to be developed to address the strategic and operational issues and to set priorities on investment needs. The analysis should consider emissions, ash handling, coal mine operation, and the potential for reducing air pollution by establishing district heating networks that use heat from power plants.
- *Create an independent regulator.* An independent energy regulator is needed to ensure that prices under the energy reforms are set fairly. Such regulation will help energy companies ensure that they are able to collect sufficient revenues to cover operation and maintenance costs and provide adequate internal cash generation to support new investments.
- *Examine options for cleaner coal technologies.* Lignite is expected to remain the primary source of energy supply in Serbia and Montenegro for some time to come. Reducing the impact on the environment by introducing new technologies (fluidized coal bed combustion) or through substitution of fuels should be developed. Pricing reforms in the energy sector will help, but plans still need to be developed to explore which technologies are most practical and affordable for Serbia and Montenegro.
- *Introduce cleaner transport fuels.* Significant environmental, health, and tourism benefits are possible if Serbia and Montenegro can convert to unleaded fuel. The governments should seriously consider the option of eliminating fuel subsidies and opening up gas distribution networks to foreign investors to help bring unleaded fuel to Serbia and Montenegro, which may be the most cost-effective approach. In the longer term, the governments should take steps to harmonize with EU environmental standards and should introduce stricter emissions standards to ensure an environmentally friendly fleet of new vehicles.
- *Undertake an inventory of GHGs.* There is a need to create a more streamlined and complementary strategy to address the problem of increased GHG emissions. Along with this, a stronger commitment to contribute to solving the problem of climate change is required on behalf of both Serbia and Montenegro. To start with, an inventory of the current level of GHGs should be prepared, high-polluting sectors should be identified, and potential future scenarios should be drawn up, given future demand and different abatement options.

6. Water Supply and Sanitation

6.1 Main Issues

72. Household surveys show that, overall, around 84 percent of the people in Serbia and Montenegro are served by piped drinking water supplies delivered to their homes. Urban and rural differences in coverage are notable, however (97 versus 68 percent). And these high figures belie the fact that residents, particularly in rural areas, increasingly receive inadequately treated drinking water supplies due to the absence of a functioning municipal system. As a result of 10 years of little maintenance and no investments in the sector, most water supply networks have difficulty assuring a regular supply, and there are widespread water quality problems, especially in Serbia. The percentage of drinking water samples that do not meet the required standards is at 50 percent in Serbia and around 15–20 percent in most Montenegrin cities (although in Podgorica, it is 2.8 percent).

73. According to official statistics, access to sanitation services (a sewage system or septic tank) in Serbia and Montenegro over the past decade has increased from 66 to 88 percent. (The rest use pit latrines.) But more disaggregated figures show that there are serious problems in Serbia. Construction of sewage systems has lagged behind water supply development, and there are distinct regional differences in sanitation coverage. It is estimated that only 15 percent of treatment plants operate satisfactorily, resulting in significant groundwater and surface water pollution. Bacteriological pollution has been found in small rivers and channels from municipal and industrial wastewater discharge. In Montenegro, only 60 percent of residents are connected to the public sewerage system, with large regional differences. Wastewater treatment plants are heavily overburdened and must often discharge untreated sewage. Water quality problems at coastal beaches are of particular concern, given the impact on health, the environment, and tourism. In small towns and rural settlements, sewage systems are nonexistent, with around 28 percent of the population using septic tanks and absorbing wells, the contents of which are not always disposed of properly.

74. Water supply and sewage system infrastructure, including disinfection systems (chlorination), is deteriorating, which has contributed to a decline in the quality of piped drinking water supplies as well as ambient water quality. Since the source of water in Montenegro is relatively pristine, problems with contaminated water supplies are more prominent in Serbia, where 29 percent of samples from piped systems in 2001 did not meet the physical/chemical or bacteriological standards.

75. Municipal water and sanitation utilities are in serious financial trouble, preventing the initiation of rehabilitation works that are urgently need to prevent the collapse of services. The tariff system for water and wastewater in Serbia and Montenegro is based on a cost-plus scheme, with cross-subsidies for the population coming from industries. The decline of Serbia and Montenegro's industries has made cross-subsidies impossible, and current water utility revenues do not cover operational costs. Tariffs were raised in December 2001 in Podgorica, Montenegro, by an average 24 percent, but they are still below operating costs.

76. In addition to capital deterioration leading to significant physical losses of the order of 50 percent or more and limitations in water treatment and sewerage, the system is plagued by high per capita water consumption (reaching 300 lpc/d, whereas the average in Europe is 180–200 lpc/d), collection rates that fall below 50 percent, lack of demand management, and misuse of water supply for nonhousehold activities, such as irrigation in peripheral areas. In Montenegro, water supply and wastewater treatment are not sufficient to meet summertime needs, when tourists more than double the area’s population to over 500,000.

6.2 Key Policy Reforms and Actions in the Water Sector

77. As noted, charges for water supply and for waste and wastewater collection were raised significantly in the past year in Podgorica, Montenegro. This should be replicated in other Montenegrin cities and in Serbia. Increased tariffs have several benefits for the environment: First, this will reduce per capita water consumption to levels that are more in line with West European standards. (For this to be successful, individual users will need to be metered or at least have some relationship between what they pay and what they consume.) Second, increased revenues will allow utilities to carry out maintenance activities, remedying physical losses as well as sewerage leakages. Increased revenues will also decrease the need for subsidies and make funds available for expanding services to underserved sections of the society, such as the urban and rural poor. Increased drinking water quality and improved sanitation will reduce costs incurred by the society as a result of diseases associated with water. Funds saved from subsidies may also be channeled to extending services to areas with high tourism potential, notably the Adriatic coast of Montenegro, which is expected to contribute substantially to the Montenegrin economy.

6.3 Recommendations

78. The following recommendations try to address some of the most critical problems facing the water supply and wastewater sectors:

- *Identify ways to increase access to clean water and sanitation in urban slums that house the poor, including Roma, IDPs, and refugees.* Some further discussion of these measures is provided in Annex 7.
- *Introduce metering, undertake pricing reforms, and improve collection rates to address financial problems.* Increase tariffs in the water supply and wastewater sector to cover operation and maintenance costs, including depreciation. Also, it is important to protect the poor and provide adequate subsidies to those who cannot afford the increase.
- *Reduce losses through improved efficiency.* Investments in the water sector should focus on maximizing the efficiency of existing systems, with a first step directed toward reducing the large systemic losses (often over 30–50 percent).
- *Introduce more fundamental reforms in larger cities.* Incorporate utilities and introduce a regulatory framework that limits political interference. Water supply and wastewater utilities in large cities with greater opportunity for financial variability need to separate themselves from city budgets and control and to institute performance-based contracts for service, eventually contracting out large rehabilitation and maintenance jobs and

facilitating the development of a stronger private support industry to provide better services.

- *Focus government expenditure on medium-sized cities and rural areas, which face the greatest problems.* These areas have limited access to financial resources, are not expected to attract private-sector interest immediately, and will likely continue to operate under municipal control. While a list of priority projects in small town and rural water supply systems exists, a detailed assessment of the state of existing facilities, informal supply systems, and private wells (including water quality) should be undertaken in both republics.

7. Waste Management

7.1 Main Issues

79. Serbia and Montenegro's waste management system is deteriorating. In Serbia, only about 50 percent of solid waste is collected, 63 percent of which is from households and 20 percent from industry. Waste is not collected in rural regions and is either burned or disposed of in legal or illegal waste disposal sites by residents. Approximately 170 official landfills, none meeting sanitary landfill standards, serve municipalities in Serbia—too many for proper monitoring and control.

80. In Montenegro, 42 percent of solid waste is collected. There are about 20 registered landfills for municipal solid waste, but none is properly constructed or operated. A number of industries produce hazardous waste, which, as in Serbia, is not disposed of correctly. Current facilities for waste disposal in both republics are inadequate and under pressure. None of the landfills incorporates gas emission and leachate collection systems, contributing to GHG emissions and posing a potential threat to groundwater supplies and thus health. The proportion of waste that is stored in poorly controlled sites is increasing, as is the amount of waste generated each year, including hazardous waste. Several donor-funded feasibility studies have been carried out in this area, including one on hazardous waste management. There is now a need to develop a strategy for waste management for Serbia and Montenegro.

81. In both republics, solid waste collection and disposal are the responsibility of local public utility companies, which face a number of interrelated problems. The institutional organization of Serbia and Montenegro's waste management sector is characterized by an unclear division of responsibilities among the federal, republic, and local levels of government, making long-range planning and rationalization of operations difficult. Solid waste management legislation exists, notably the special Law on Waste Handling, which identifies wastes that can be recycled. But implementation and enforcement are challenging. In Serbia, a Recycling Agency is in place, but many of the regulatory bylaws for enforcement are yet to be developed. Low tariff collection rates (ranging from 15 to 70 percent in different municipalities) are a major barrier to modernizing waste management practices. Fines for violating waste laws exist, but they are not high enough to ensure compliance with the law. A lack of revenues makes it difficult for waste management utilities to cover operation and equipment maintenance costs, let alone invest in modernizing collection equipment and disposal facilities or develop waste separation and recycling programs.

82. An especially significant problem for the Republic is hazardous waste management. About 260,000 tons of hazardous waste is generated per year. Of this, 9,600 tons are bio-hazardous wastes, half of which originates in hospitals. No permanent storage or disposal facilities exist for hazardous waste, leading to on-site storage of the waste or disposal in municipal landfills. Some hazardous waste has been exported to other countries for incineration. Lack of proper regulation for hazardous waste transportation frequently leads to accidents, threatening public health.

7.2 Key Reforms and Actions in Solid Waste Management

83. A Strategic Framework for Waste Management prepared for Serbia with Japanese aid proposes to increase fines, develop a packaging refund system, establish a system for manufacturing liability, and restructure public utility companies. In the longer term (2007–15), the strategic framework proposes to introduce a transferable license system for hazardous waste and to privatize solid waste management systems. Information on Montenegro's solid waste management sector is limited, and the republic has yet to develop a strategy. An important component of any strategy would exploit economies of scale. This is best done by taking a regional approach, which promotes fewer landfills that serve a wider region and that can be better monitored and controlled. (See Box 5.)

Box 5: A Regional Approach to Solid Waste Management in Bosnia & Herzegovina

The World Bank has recently approved a credit of US\$14.3 million for improving solid waste management for several localities (Tuzla, Banja Luka, and Mostar) in Bosnia and Herzegovina. The main idea of the project is to consolidate waste disposal in a few regional landfills instead of a large number of smaller-scale waste disposal sites.

Past practice of waste management in the country was to create a landfill for each locality. However, municipalities with limited financial capacities were not in a position to build and maintain waste disposal sites at levels dictated by technical, environmental, and sanitary requirements. As an alternative, the project will create regional landfills that can serve several municipalities. It was clear that formation of such landfills through cooperation between different numerous municipalities in Bosnia and Herzegovina was necessary in order to afford improved sanitary landfill standards. The approach takes advantage of economies of scale: the cost of maintaining a regional landfill is lower than the sum of the costs of maintaining individual smaller landfills at the same standards. It was estimated that landfills are affordable and allow cost recovery only when daily waste input is in excess of 200–300 tons. Lower costs are likely to induce more budget-constrained municipalities to invest in upgrading solid waste management, which is a acute problem in Bosnia and Herzegovina and in the Balkans in general.

84. With regard to hazardous waste, the Serbian Ministry of Natural Resources and Environmental Protection considers it a high priority to establish a properly managed central landfill for hazardous waste and put in place modern regulations concerning the transportation of such waste.

7.3 Recommendations

85. The following actions are recommended on waste management:

- *Address the hazardous waste management problem.* Assess options for hazardous waste disposal, including potential sites. Existing regulations on hazardous waste transportation need to be revised, and there is a need for capacity building for enforcement. Where feasible, address hazardous waste management at the source.
- *Reform waste tariff structures and privatize some waste management functions.* Differentiated tariff structures for waste disposal and collection, fines for nonpayment, and stronger enforcement through the law are needed to increase collection rates to make

the waste sector financially viable and capable of investing in new equipment and modern facilities. Greater involvement of the private sector in waste management (for example, in collecting waste or investing in the development of recycling capacity) could help make the sector more efficient.

- *Develop and implement waste strategies.* Serbia should begin to implement the recommendations of its recently approved waste management strategy. Montenegro should develop a waste management strategy similar to Serbia's. The strategy should examine the potential for establishing a regional landfill to reduce the number of disposal sites, while considering existing economic and institutional constraints. Studies to assess the potential for recycling should also be undertaken.

8. Coastal Zone Management in Montenegro

8.1 Main Issues

86. The Montenegrin coastal zone has outstanding environmental and cultural value. Due to its isolation and strict land use planning during the socialist period, its environment is still largely intact. It is, however, increasingly threatened by market pressures for further tourism development, by illegal construction, and by already overburdened municipal services, like water supply and wastewater and solid waste collection and disposal. Citizens with resources now feel free to build where they want, especially along the coast. Although no accurate figures are available, estimates are that 30,000 housing units have been built illegally in the coastal zone over the last 10 years. What is not known is how many of these areas had the appropriate zoning but the builders did not pay the necessary fees and taxes, or how many houses were improperly sited and may harm the environment. (A prime example is the development of part of a highly scenic island opposite Budva.) Addressing this problem will require first a reliable census of such structures.

87. It is certain that if it is not checked, unplanned and illegal development will continue, in which case the government goal of developing tourism as one of the engines of growth will be seriously compromised. Tourism is certainly the dominant industry in the coastal zone. The sector receives strong government support through the Ministry of Tourism, which undertakes considerable planning, both physical and economic. The goal for 2020 is 22 million visitor-nights—four times the current level. While the Ministry of Tourism gives considerable stress to environmental protection and appears ready to balance commercial gain with the need to preserve the very scenic coastal environment, its ability to do so can be questioned in the light of the building that is currently taking place.

8.2 Key Reforms in Coastal Zone Management

88. Reforms are needed so that a better balance is reached between the development of tourism and the preservation of the environment on which it depends. Most of all this requires political commitment, so that the authorities will take the necessary action against those erecting illegal dwellings and not observing the proper planning regulations. This has to be supported by a coastal zone management (CZM) policy that states clearly what the government aims are, where the government intends to promote development and any limitations to that development, and what infrastructure it will provide. The Government of Montenegro is heading in this direction, although it has not yet prepared a full policy. This has to be supported by improved coordination both horizontally (between national ministries and agencies) and vertically (between the national, municipality, and town levels). Procedures for planning and permitting of development that would allow wider consultation and expand the role of public participation in decisionmaking have to be introduced.

89. The role of the existing Coastal Zone Management Agency (a public enterprise under the Ministry of Marine Affairs) could be expanded beyond its current functions, which relate mainly to leasing of beach space, so that this becomes the main body responsible for concrete actions under a broader CZM program, taking advantage of its skilled staff and knowledge base. Specific

institutional arrangements for counteracting illegal construction may be called for, as well as legal instruments. On the international cooperation side, the Socialist Federal Republic of Yugoslavia signed the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1976). Serbia and Montenegro needs to ratify the convention to be able to participate in and benefit from activities under it.

8.3 Recommendations

90. The following actions are recommended as a matter of urgency:

- *Prepare a coastal zone management policy.* An overarching policy is needed, in order to integrate all sectoral plans, including documents for infrastructure, environmental and landscape protection, and municipal services development.
- *Strengthen institutional coordination.* Institutions must improve the sharing of information, better coordinate their actions, increase cross-sectoral review of procedures for planning and permitting of development, and increase the role of public participation in decisionmaking. Expanding the responsibilities of the existing Coastal Zone Management Agency would help in this regard.
- *Raise public awareness.* Urgent attention should be given to a publicity program to inform the public about the state of the coastal environment, current threats, and the steps needed to ensure environmentally sustainable development of the coastal zone.

9. Forestry

9.1 Main Issues

91. Forests cover 28 percent of Serbia and Montenegro's territory and represent one of most important natural resources, particularly for Montenegro, where they cover 543,000 hectares (39 percent of the territory). More than half of the forests (57 percent) are owned by the public. Forests owned by the private sector are often fragmented and rarely managed sustainably.¹⁸

92. Forest quality and growth are threatened by many factors, including overharvesting, illegal logging, forest fires, and pest infestations. Although statistics suggest that the estimated annual increment of the growing stock exceeds the annual cut by more than 100 percent, this does not imply sustainable management at all forest sites. Due to a relatively low road density in forest areas, accessible areas are frequently overharvested, while other areas are harvested with very low intensity. Inaccessible areas are often more prone to forest fires and insect infestations. During the 1990s, the efficiency and level of forest monitoring and control decreased considerably, and illegal logging increased. Excessive cutting of trees in mountainous parts of Montenegro and Serbia is in part responsible for increased erosion and flood occurrence. In Montenegro, the Tara and Lim basins were identified in the stakeholder workshop as particularly vulnerable areas.

93. Existing institutional capacities are weak, especially with regard to enforcement of forestry standards and regulations. Forest authorities need to develop new sustainable forest strategies to improve existing legislation, to harmonize it with EU requirements, and to create a Geographic Information System (GIS) as the basis for better forest management.

94. Non-wood products of the forests are important both in terms of traditional cultural values and as income sources. These products include snails, frogs, herbs and spices, mushrooms, wild fruits, game meat, and Christmas trees planted in forest openings and firebreaks. Harvesting for commercial use of these non-timber forest products is organized through a permit system and monitored in Serbia by the independent Institute for the Protection of Nature, while in Montenegro the Institute for Nature Protection is the responsible entity. The main problem here is poaching, and protective regulations have been instituted to counter this. Nevertheless, declines in official numbers of animals being shot point to continued poaching, which in turn results from socioeconomic conditions.

95. The wood processing industry is highly fractured. It produces a large number of different products. The sector is highly export-oriented. The production volumes decreased radically during the period of U.N. sanctions. Due to the currently favorable market in Europe for beech sawnwood, production recently returned to pre-war figures. Hence this is a sector where there is potential for economic development and for employment creation in a small to medium-sized private enterprise structure that is export-oriented. (The sector accounts for at least 6 percent of all exports.) The introduction of certification should allow Serbia and Montenegro's processing industry to capture premium prices for sustainably managed forests while protecting the

¹⁸ The area that is classified as forest was strongly disputed at the workshop in Serbia.

environment. In this respect Serbia and Montenegro has still some way to go, but it is encouraging that the possible establishment of a National Working Group to develop standards for sustainable forest management and certification is currently under discussion within different stakeholder groups.

9.2 Key Reforms and Actions in the Forestry Sector

96. There is no forest policy approved at the federal or the republic level. Currently a group of national forestry experts has recommended the following items be included in a national forest policy:¹⁹

- Precise definition and structuring of the objectives of forest policy at the federal level (Federal Forest Law), in keeping with the principles of viable development, ecological and economic needs, and bio-technical and economic peculiarities of the forest sector
- Financial support for the development of the forest sector (mainly from sources outside the sector)
- Increase of the forest road network density
- Creation of conditions for dealing with the issue of forest ownership
- Creation of conditions for starting up a selective process of privatization in the forest production segment
- Settlement of the issue of control over and management of private-sector forests (such as establishment of a network of test estates and monitoring of their performance and establishment of associations of owners of private forests)
- Insistence on the development of the concept of viable eco-agroforestry
- Strengthening of the material basis for science research in the forest sector, including acquisition of equipment necessary for monitoring changes in the forest ecosystems and the development of information systems

97. Progress in these areas is slow and needs to be speeded up. Consider first the issue of financing of forest management and protection. The current Serbian forest law has no provisions on how the state should be reimbursed by the public forest enterprises (*Srbija Sume*) for the use of state-owned forests. The only obligation of these enterprises is to pay a flat 3 percent tax on its sales to the Ministry of Finance. This requirement applies to all forest users. Three percent of the total collected from all public funds (water, forests, roads, raw minerals, agricultural lands, and other natural resources) is then earmarked for forest operations (afforestation, silviculture, and so on). In 2001, revenues from timber sales totaled US\$1.01 million, while the amount earmarked for forest-related operations from the consolidated revenues of public funds was US\$1.28 million. The current across-the-board practice means that much of the forest-exploitation-related rent is not captured by the government. In addition to the 3 percent, there should be a differentiated tax schedule introduced to eliminate these distortions. These changes are necessary in order to help the government capture the real rents from forest exploitation and eliminate the de facto subsidy that is encouraging inefficient management of state forests.

98. On the question of private ownership, ideas to “de-nationalize” forests are being discussed in Serbia and Montenegro. The main concern here is that this usually reduces the

¹⁹ *Yugoslav Survey—A Record of Facts and Information*, Vol. XLI No. 3, 2000.

average size of forest compartments (management units) significantly and subsequently increases economic and ecological risks. Care will have to be taken to avoid this happening by including ecological criteria in the way forest parcels are divided up for private use.

99. Other issues of importance include the methods of forest extraction (present processes are not very environmentally friendly) and improved efficiency of operations (productivity of harvesting operations is low—average extraction and terrain transport distances are long as a result of an inadequate road network). Due to the lack of investments in the sector, the existing equipment is old and worn-out. The governments recognize that finance for the recovery of this sector will have to come in large measure from the private sector.

9.3 Recommendations

100. It is recommended that the governments undertake the following actions to promote environmentally sustainable forest management:

- *Develop a national forest strategy.* This would need to include all forest owners in Serbia and Montenegro. Key areas would include the development of an efficient forest revenue system and an integrated approach to strengthening the management capacity in privately owned forests, including a strategy for the restitution of forests and their management in the longer term. It should also address the harmonization and reform of the forest legislative framework to ensure compatibility with the international forest community as well as the development of national standards for sustainable forest management to enable forest certification and therefore better access to the European market.
- *Develop an integrated and multipurpose information system.* There are two principal considerations in developing a multipurpose information system. First, an approach to establishing an integrated Geographical and Forestry Information System (GIS/FIS) should be developed that includes multipurpose and thematic functions in the forest sector and that can be expanded to perform instant yield calculations at the district level, including simulation and visualization of mixed and multi-aged forest, which at the moment cannot be done in Serbia and Montenegro. Second, a GIS/FIS system could be used to implement computer-aided comparison between data provided by forest users, forest product transporters, and processors and data from the official FIS regarding log sourcing, transportation control, monitoring of sustainable forest management, chain of custody of forest certification, and so on. This comparison would aid in preventing, detecting, prosecuting, and suppressing irregularities, fraud, and corruption from the forest site to the processing stage and the marketplace.
- *Improve forest management capacity.* This would require support for already ongoing institutional reforms and restructuring of the current forest and protected area administration based on the separation of commercial from regulatory functions, and would include the establishment of mechanisms for self-financing of commercial activities and a strengthening of the regulatory functions (such as Forest Inspection Services).

- *Strengthen the wood processing industry.* This would include advisory services for consolidation, modernization, and internationalization, with a special focus on current market developments, such as certification.

10. Biodiversity and Protected Areas Management

10.1 Main Issues

101. Thanks to the large variety of the ecosystems it hosts, the former Yugoslavia was one of six European centers of biological diversity and is home to 39 percent of Europe's vascular plant species, 51 percent of its fish fauna, 74 percent of its bird fauna, and 68 percent of its mammalian fauna. The country's biodiversity is further enhanced by endemic and relic species and ecosystems, which are only found in this region, giving them global significance. Close to 15 percent of total flora represent endemic and sub-endemic plants; 2–3 percent of these are found exclusively in Serbia and Montenegro or their range spills over slightly into the territories of neighboring states. The country also offers a resting place for many migratory species, including endangered ones.

102. A number of Serbia and Montenegro's nature areas have been recognized as internationally significant. Among these are the Obed Swamps and the Ludas Lake, Lake Skadar, and Carska bara–Stari Begej (Ramsar Wetland of International Significance); the Durmitor-National Park, with part of the Tara River Canyon and the Kotor-Risan-Bay (on the World Natural Heritage List); and the Tara River Canyon, which has been included in the biosphere reserves grid of the UNESCO Man and Biosphere Programme.

103. About 60 percent of endemic Balkan flora found in Serbia (out of the total of 417 species) is endangered to a varying degree and for different reasons. Negative impacts on ecosystems and biodiversity include:

- Unsustainable exploitation of forests, game, and fish and use of improper and methods for fighting “pests,” such as pesticides, herbicides, and the poisoning of game
- Mining practices that are not friendly to nature, notably open-cast lignite and copper ore mines
- Expansion of agricultural lands to marginal lands and the drainage of swamps and marshes
- Water, soil, and air pollution
- Urbanization and the expansion of urban areas and tourism development in zones of particularly vulnerable ecosystems
- Infrastructure development (fragmentation of habitats), hydro melioration, and the construction of water accumulations in gorges (refuge habitats of relict and endemic species and communities)
- Fires, floods, accidental spills, and discharges of harmful substances by industry or during transportation

104. Nature conservation areas represent 5 percent of Serbia's territory. There are five national parks (Fruska Gora, Kopaonik, Tara, Sar planina, and Djerdap–Iron gate), 120 nature reserves, 20 nature parks, and about 470 natural monuments. In Montenegro, about 8 percent of the territory is protected by the state and is made up of four national parks (Lake Skadar, Biogradska Gora, Durmitor, and Lovcen), 4 nature reserves, 51 natural monuments, and 4 forest parks or

special nature areas. An estimated 314 animal and 52 plant species designated as natural rarities inhabit protected areas and are included in the republic's Red Book. Lake Skadar, located between Montenegro and Albania, is a Ramsar wetlands site and an International European Bird Area, with about 40 different species of waterfowl.

105. Serbia and Montenegro is a signatory to the Convention on Biological Diversity (1992) and the Convention on Trade in Endangered Species of Wild Fauna and Flora (1973) and ratified both treaties in 2001. A number of laws and regulations govern biodiversity protection at the federal and republic levels (see Annex 10). The institutional set-up is also elaborate, involving the Environment Department within the Secretariat for Health Protection and Social Policy at the federal level (for international cooperation) and the republican Ministries of Agriculture, Forestry, and Waters, which have the main responsibility for forestry and forest biodiversity. The republican Ministries of Environmental Protection are responsible for supervising activities of public enterprises, which are in charge of administering the national parks.

106. Despite the relatively good condition of the national parks, most of them suffer from inadequate funding and have very weak institutional and human capacity. Park development depends in part on the receipt of public funding. This has been decreasing, however, in the face of the governments' tight budgetary policies. In Montenegro, for example, the national park public enterprise has experienced a budget cut of 33 percent in the last year. These difficulties have led a number of park administrations to resort to revenue-generating activities that are not in line with existing legislation. In particular, in national parks that include forests, administrations engage both in wood cutting and sales in the name of "sanitary cutting" and in regular small-scale logging in zones with less restrictive protection regimes. Construction activities from tourism development are also reported to have reached unsustainable levels from a biodiversity protection point of view.

10.2 Key Reforms and Actions in Biodiversity Conservation

107. The governments of the republics take biodiversity conservation seriously, as can be seen from their international commitments and from the fact that the Landscape Management Plan of the Republic of Serbia approved in 1996 aims to double protected areas, including natural monuments, to 10 percent of the territory by 2010. The difficulty is that increasing such areas is not of itself enough to ensure effective conservation. Areas so declared can be subject to illegal use. Preventing this requires resources in policing as well as complementary programs of sustainable livelihoods for potential encroachers. Programs for conservation also need additional funds to actively husband the resources within the protected areas.

108. In the face of decreasing public resources for biodiversity protection, there is a need for a comprehensive strategy and action plan that identifies priority problems, including species and ecosystems that require attention more immediately than others, and measures to be undertaken to protect these. There is also a need to generate revenues from exploiting the private demand for biodiversity where it can be done without harming the resources (such as through ecotourism, gene prospecting, and so on).

109. Serbia and Montenegro also faces certain international biodiversity-related obligations that have not yet been met. Prominent is the need to ratify the Berne Habitat Directive and the Bonn Convention on Migratory Species.

10.3 Recommendations

110. The following policies and actions are recommendations for biodiversity and protected areas management:

- *Develop a biodiversity strategy for Serbia and Montenegro.* The strategy would include strengthening the regulatory framework for biodiversity conservation; building institutional and human capacity of the relevant governmental agencies and NGOs, especially at the local level; mainstreaming of biodiversity conservation in sectoral policies, notably forestry, agriculture, and tourism; sustainable use of flora and fauna; strengthening the network of protected areas and integrating it in regional networks; specific conservation and restoration programs for threatened habitats and species; further development of biodiversity monitoring; and enhancing public awareness and participation in biodiversity conservation. The strategy should also recommend priority areas for investment. Funding for the strategy may be requested from the GEF.
- *Prepare management plan for Lake Skadar and introduce integrated ecosystem management.*
- *Prepare management plans for selected protected areas and for all national parks with the goal of ensuring long-term financial sustainability of biodiversity protection.*

11. Priority Actions and the Role of Donors and The World Bank

11.1 Recommendations for Priority Action

111. The review's main recommendations for action are given in Table ES1 in the Executive Summary. For each action, the table provides the main reason why it is seen as critical, notes related issues that also need to be addressed, and reports on supporting activity by other donors. The selection of actions is based on the following criteria:²⁰

- *Impact on human health*—priority is given to problems, primarily related to air and water pollution, that have a demonstrable negative impact on health, such as illness and premature death
- *Impact on the economy*—problems that can be ranked according to their economic impact are included, including pollution and natural resource management issues
- *Impact on natural ecosystems*—since the destruction of habitat and extinction of species are not reversible, these impacts do not have easily quantifiable economic use values for humans associated with them but could nevertheless be critical for the proper functioning of economic systems

112. In addition to these, the priorities for action in Table ES1 also take account of ongoing support from other donors, as well as the likely costs of the interventions, the potential benefits, and the prospects for mobilizing financial resources for them.

113. The list of recommendations does not include **two key policy measures** that the governments are already committed to and that, if successfully implemented, will make a major contribution to the environment. The first is **the phaseout of energy subsidies**, combined with a program that addresses the impact of the price rises on poverty and especially on the increased use of wood fuel in rural areas. The second relates to **the pricing of water and waste services by municipalities**. As noted earlier, at the moment the charges are so low that the service is poor and the infrastructure is deteriorating fast. As for energy, the governments have started action to raise prices in some municipalities, but so far only a handful of utilities have acted in this direction. This program should be expanded as much as possible, with targeted support for vulnerable users being included as part of the reform program.

114. The recommendations in Table ES1 emphasize, above all, **the need for continued policy and institutional reforms** that will have major implications for the environment and that will also, in many cases, benefit the economy. These are **complemented by investments** where these are critical for addressing environmental issues. In some cases the policy and institutional reforms need some further preparatory work. This is the case for actions relating to coastal zones and biodiversity protection; in these cases the preparation of a strategy document is recommended as a first step. Areas where policy/institutional reforms should be initiated include strengthening institutional capacity in environmental management and addressing environmental liability and privatization. Finally, areas where some investments need to be made in the short

²⁰ These criteria are based closely on the formula adopted by the European Environment Ministers in their meeting in May 1993 in Lucerne, Switzerland, following the *Environment for Europe* process supported by the Bank.

term are improvements in solid waste disposal facilities, in rural and urban water services, and in addressing serious pollution problems in selected hot spots. In all cases the focus should be on localities where the present situation poses a serious health threat.

115. In addition, the governments should consider investments in regional and global public goods—reductions in greenhouse gases through energy efficiency, tackling Danube eutrophication, integrated ecosystem management for Lake Skadar, and improved biodiversity conservation. The justification for these is that Serbia and Montenegro has some international obligations that have to be fulfilled and that funds for these programs will come partially from international earmarked sources such as the Global Environment Facility (GEF). The selection of the projects, however, should be based on the net global benefits plus the local benefits generated.

11.2 The Contributions of Other Donors

116. The level of donor support for the environment in Serbia and Montenegro initially focused on urgent problems, primarily in the municipal sector, but has since moved to wider support for institutional reform, technical assistance, and infrastructure investment. The **European Agency for Reconstruction of the EU**, which is responsible for the management of the main EU assistance programs in Yugoslavia, is the largest donor, investing mostly at the municipal level, covering maintenance and repair of local public facilities. In 2001, its assistance amounted to Euro 320 million, and this is expected to continue in the same order of magnitude during 2002–06. For sewerage and wastewater, the EU intends to fund preparatory studies for larger projects that will then be funded mainly from other sources. The **U. S. Agency for International Development** has a large assistance portfolio as well in Serbia and Montenegro (US\$240 million for 2002–04), which also focuses at the municipal level—for small-scale urgent infrastructure development and maintenance—and in support of civil society development. Larger investment programs are being prepared by the **European Bank for Reconstruction and Development**, which is currently negotiating investments in the larger cities on district heating systems, water supply, and sewage systems. The **Governments of Germany and France** are also undertaking smaller-scale efforts that support wastewater and water projects.

117. Bilateral donors are also supporting a number of infrastructure projects, and some have contributed to cleaning up activities in several environmental “hot spots,” in particular where NATO bombing damage occurred. The UNEP-UN Centre for Human Settlements Balkan Task Force has identified 27 clean-up projects to address the post-conflict environmental and humanitarian problems, with an estimated cost of US\$37 million. **Switzerland, Austria, Norway, Russia, Denmark and others** have provided US\$11 million, and about 15 projects have been implemented. **Germany** intends to provide Euro 2.5 million to Montenegro for environmental protection and is in the process of determining the specific area of investment.

118. A number of donors and international agencies are also providing or planning to provide technical assistance to Serbia and Montenegro in environment-related programs. Among them more active in this area are the U.N. institutions and the EU. Currently the **U.N. Development Programme** is working on energy conservation and efficiency and on promotion of sector reform. It is taking a lead position on implementing GEF projects in the area of preparing national strategies on climate change and biodiversity conservation. The **U.N. Economic Commission for Europe (UNECE)** is preparing an Environmental Performance Review for the

country. **UNEP**, together with **UNECE**, has organized several capacity-building workshops. The **EU** plans to provide substantial assistance in drafting, adopting, and implementing a well-functioning legal, policy, and institutional framework; in supporting, maintaining, and further developing a civil society network; and in strengthening municipal institutions responsible for solid waste and wastewater management. It will also support improved monitoring of pollution and work on hot spots where the current situation poses a serious environmental risk, such as Trepca, Pancevo, and Novi Sad.

119. The **Regional Environmental Center in Central and Eastern Europe (REC)** is co-implementing several regional projects in Yugoslavia: providing support for ratification and implementation of multilateral environmental agreements; strengthening national environmental protection agencies; and developing national information systems and environmental legal advocacy and advisory centers. REC is also responsible for implementing “promotion of networking and exchange of experience in countries of South-Eastern Europe.” The main goal of the project is to contribute to enhancing cooperation among these countries through the management of shared natural resources. The project has a special component on the transboundary Lake Skadar. It also aims to promote cross-border exchange between local people, organizations, and NGOs, and to establish technical networks in support of the selected transboundary sites, in implementing small-scale demonstrational projects.

120. Among bilateral donors, the **Government of Finland** is providing special support in the area of harmonization and improvement of environmental legislation. And other donors (**Switzerland and Norway**) have supported, through the **Organization for Security and Cooperation in Europe**, the draft framework Environmental Protection Law for Serbia or are supporting the Serbian or Montenegrin Governments in some particular areas. (For example, the **Government of Japan** has supported preparation of background studies for a National Waste Management Strategy for Serbia.) Donor activities are presented in table form in Annex 11.

11.3 The Role of the Bank

121. The donor review suggests that there is considerable interest in the environment from external agencies and that the Bank has to think carefully about where it can make the most useful contribution. The main programs that the Bank could most usefully support are listed in Table ES2. Apart from the stakeholder and donor consultation workshop, which should be undertaken to discuss this report with stakeholders and to finalize the Country Environmental Analysis, the other proposals support areas where other donors are not covering the priority fully and where action is needed according to the priorities listed in Table ES1. These are:

- **Develop a hazardous waste facility for Serbia.** The Serbian MENR intends to develop a National Solid Waste Management Strategy based in part on the Strategic Framework for Waste Management prepared with Japanese aid. The Bank is already involved through the International Finance Corporation in a possible private-sector solid waste management project for Belgrade. In Montenegro it provided a special investment grant for a coastal zone waste disposal facility last year, and it expects to add to that in 2003. The Bank will provide an additional International Development Association credit of US\$5 million for the same sector and region and thus solve the waste problem for a most sensitive tourist area of the country. This places the Bank in the lead on assistance in solid waste in Serbia

and Montenegro. The investment would make a major contribution to resolving one of the most serious environmental problems in the country. It is priority action 1 in Table ES1.

- **Prepare and implement an Integrated Ecosystem Management Program for Lake Skadar.** This activity falls under priority action 10 in Table ES1, and although it preempts the biodiversity strategy to some extent, the action is justified for several reasons. First, the lake is clearly an important resource, so any biodiversity strategy is bound to recommend priority action in this region. Second, time is of the essence as increasing water pollution threatens fisheries and as deforestation and illegal hunting endanger globally significant ecosystems. The Bank is well placed to undertake this project because of its experience in similar integrated ecosystem management projects, including the ongoing Lake Ohrid Project between Macedonia and Albania.
- **Design and implement a Danube nutrient reduction investment project.** This is priority action 8 in Table ES1. The reason for Bank involvement would be its pivotal role in the Black Sea/Danube cleanup program overall, and Serbia and Montenegro urgently needs to make a contribution to the nutrient reduction targets as part of its obligation under the Convention on Co-operation for the Protection and Sustainable Use of the Danube River. Serbia and Montenegro contributes about 13 percent of the Danube River's nutrient pollution, which has had negative impacts for fisheries, tourism, and public health in the Danube and Black Sea regions.
- **Prepare an energy efficiency and renewable energy project for Serbia.** Priority action 7 in Table ES1 is included because there are a number of areas where energy efficiency is very low and where investment in more-efficient technology would be justified even with the higher energy prices that are being planned, and because the project would benefit the local environment and local economy, with part of the costs being covered from its contribution to the global public good (that is, reduction in greenhouse gas emissions). The Bank, possibly through the GEF or its Carbon Fund, would be the most effective agency to carry out such a project.
- **Assist the Ministry of Environment in legal revisions to the privatization law to take account of environmental liability.** This is priority action 6 on Table ES1. Although a number of donors are willing to support this activity, the Ministry for the Protection of Natural Resources and Environment and the Privatization Agency would benefit from Bank experience in this area, which is extensive. Perhaps a Bank technical assistance grant with support from one or more bilateral donors would be the best arrangement.
- **Support the PRSP process.** By drawing out the key environment poverty linkages and contributing to the PRSP document in this area, the Bank can ensure that environmental issues are properly addressed in the national development strategy. This is partly in support of priority action 4 in Table ES1, which includes the need for a better understanding of the impact of environmental changes on poor sections of society and of how actions need to be designed to minimize such impacts in the future and possibly reverse those that have already happened. The Bank has considerable experience with environment and poverty issues and is well placed to offer assistance in this area.

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