

BULGARIA^{*}

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^{*} In co-operation with UN/ECE.

CONCLUSIONS AND RECOMMENDATIONS*

Before 1989, the economic development of Bulgaria was already characterised by reliance on heavy industry, low efficiency in use of energy and raw materials, and outdated and highly polluting technology. All this presented difficult challenges for environmental management in Bulgaria after 1989. Severe economic decline and frequent changes of government impeded development and implementation of environmental measures. Yet a few important steps have been taken towards environmental improvement: the establishment of basic legislation, development of a national environmental strategy, enhancement of institutional capacity and mobilisation of international assistance.

However, implementation of environmental policy and investments for environmental improvement have not followed. Development of the regulatory framework has been delayed by a slow legislative process. Mobilising resources from enterprises, government and households is proving difficult in view of economic constraints. Pollution loads to air and water have been reduced, but mainly because of declines in production; a resumption of economic growth could increase pressures on the environment. At this stage, the challenge for Bulgaria is to progress with the enactment of draft legislation and concentrate its effort on cost-effective and urgent actions. Integration of environmental concerns into the economic reform process is another challenge in enhancing environmental performance cost-effectively.

This OECD report has set out the baseline for assessing future environmental progress and has examined Bulgaria's environmental performance in four key areas:

- reducing the pollution burden;
- conserving nature;
- integrating environmental and economic decisions;
- strengthening international co-operation.

In each of these areas, the extent to which government policy objectives are being met has been assessed. This assessment includes both domestic objectives and international commitments, and is based on environmental effectiveness and economic efficiency criteria. A number of recommendations are put forward that could contribute to further environmental progress in Bulgaria.

1. Reducing the Pollution Burden

Focusing on urgent tasks

Bulgaria has made progress in dealing with pollution problems in the past few years: the 1991 Environmental Protection Law was adopted and the institutional capacity of the Ministry of Environment, including the Regional Environmental Inspectorates, was strengthened; environmental monitoring systems were also improved, largely through international assistance. Environmental impact assessments (EIAs) are used on a large number of new projects and programmes. The 1994 Environmental Strategy Update clearly identified tackling hot spots as first priority, since hazardous pollution from large industrial plants threatens human health and the environment in surrounding areas.

Further efforts are required, however, to establish a sufficient framework to control pollution. Several pollution control laws have been drafted but not yet enacted. A key challenge is to reform a system of very strict but unenforced standards, dating from previous decades, into realistic standards; this should involve analysis of the technical and economic feasibility of proposed regulations. Enforcement mechanisms are weak, largely limited to low fines on air, water and soil pollution. Other policy instruments could be used more extensively. Major concerns include hazardous emissions from industrial plants, SO_x from thermal plants and lead and other emissions from motor vehicles.

Given the serious pollution conditions in hot spots and strict constraints on public and private funding resources, Bulgaria should focus in the short term on reducing acute pollution risks to human health and the environment. Temporary measures to reduce acute risk can be carried out before sophisticated high-cost measures are introduced. The convergence of Bulgaria's environmental performance with that of European OECD countries should be realistically planned for the medium to long term.

* Conclusions and Recommendations approved by the Group on Environmental Performance at its November 1995 meeting.

It is therefore recommended that consideration be given to the following proposals;

- accelerate enactment of draft environmental laws, such as the draft water, air and waste laws;
- develop a cost-effective system of policy instruments (regulatory, economic, EIAs, others) that complement each other;
- develop realistic regulatory standards and a system of clear compliance schedules, with interim standards, when necessary, for plants that cannot meet standards;
- strengthen enforcement mechanisms, introducing permit requirements and a more effective fine system;
- promote the application of low-cost, "win-win" solutions for industry, such as good housekeeping and cleaner production;
- consider cost-effective pollution control measures in the energy and transport sectors.

Air

Overall atmospheric emissions of substances such as SO_x, NO_x, particulates, CO₂ and methane have decreased by more than 20 per cent since 1990, mainly as a result of the decline in economic output. The 1992 Environmental Strategy and its 1994 update identified air pollution as the country's most important environmental problem and an area for priority measures. These are only beginning to be implemented. The air quality monitoring system has significantly improved. A few highly polluting industrial plants, most notably in non-ferrous metallurgy, have made investments to control air pollution, and low-lead-content gasoline and lead-free gasoline have been introduced. A draft air law has been prepared.

Air quality remains low in many cities and hot spots, continuing to present a significant threat to human health. Overall, national emissions are still very high compared with those of either western European countries or other central and eastern European countries. Emissions from large industrial facilities remain major problems, as do those from residential/commercial sector use of low-quality solid fuels. Motor vehicle emissions are a concern in cities, especially in Sofia, and are likely to increase, unless counteracting measures are taken. Further work is needed to develop realistic emission requirements for large polluting plants, and the Regional Environmental Inspectorates will have an important role to play in their effective enforcement. Determined action is needed to implement the Environmental Strategy concerning air pollution. The integration of air pollution concerns in industry, energy and transport policies is essential if results are to be achieved in the most cost-effective way.

It is therefore recommended that consideration be given to the following proposals:

- concerning large polluting facilities, improve enforcement through better monitoring and reporting systems, higher fines, the introduction of permits and the development of compliance schedules;
- review the cost-effectiveness of emission standards for large stationary sources, particularly the uniform standards for power plants;
- improve the integration of environmental concerns in energy policies: reduce power sector emissions, develop and implement strategies to improve energy efficiency, and promote the substitution of cleaner fuels by households;
- continue efforts to promote the use of lead-free gasoline and strengthen measures to control motor vehicle pollution through: i) more comprehensive emission requirements and effective enforcement; ii) greater restrictions on the import of old, highly polluting vehicles; and iii) measures to reduce unnecessary traffic in cities and promote public transport, particularly in Sofia;
- encourage development of local air pollution plans, especially in hot spots, through wide consultation among local and national authorities, the public and major polluters.

Water

Bulgaria has strengthened water management efforts in recent years. It has assigned increasing financial resources to these efforts. Monitoring and information systems for ambient water quality are well-developed and provide a good basis for policy development. Some improvements in the water quality of polluted rivers have resulted from declines in agricultural and industrial production. Early progress has been made in increasing water conservation and pollution prevention approaches in industry and livestock production.

Much work has been done to improve the legislative framework: a comprehensive draft water law, which is awaiting approval by the Parliament, is expected to establish an integrated national water policy stressing sustainability.

A set of regulations, ready for implementation when the law is enacted, will provide clearer targets and effluent standards.

However, overall problems of water quantity and quality remain severe. Availability and distribution of water present serious difficulties. While current water shortages relate mainly to a prolonged drought, major problems exist with antiquated and leaky distribution systems and with wasteful agricultural and industrial use. Concerning drinking water, nitrate and heavy metal contents pose localised health concerns. Many municipal waste water treatment plants are incomplete, funding for them is slow and clear priorities have not been established. Industrial waste water treatment has increased, but should expand, including in newly emerging industries such as food processing. At current levels of funding, it will take several decades to address the overall water infrastructure problem. The systems of user charges and pollution fees can be improved to better reflect service cost and environmental damage; this would produce funds for investment in water supply and sewerage networks and waste water treatment plants, and give proper incentives for water conservation and pollution reduction. An effluent charge, which has been proposed, would be useful to this effect.

It is therefore recommended that consideration be given to the following proposals:

- continue and expand efforts in river basin management, with involvement of all interested parties and agencies;
- continue and strengthen efforts to encourage water conservation and pollution prevention by industry and agriculture, through regulatory and pricing approaches as well as by fostering best management practices;
- continue to develop and implement a permit system for industrial and municipal discharges, using a phased approach with interim limits and enforceable compliance schedules;
- continue price reform for water supply, with attention to metering and collection practices, and implement the proposed water effluent charge;
- fund the completion of unfinished waste water treatment plants, giving priority to areas where maximum benefit will occur, including attention to important tourist areas; and establish clear priorities for each river basin concerning water supply infrastructure projects.

Waste and contaminated soil

In the last few years, progress has been achieved in preparing a legal framework and in increasing institutional capacity for waste management. A draft waste management law will provide a comprehensive framework for municipal, industrial and hazardous waste management, including the waste hierarchy principle and regulatory systems. Decrees on hazardous waste management and on waste import have been adopted and standards for landfills are under development. Reporting of hazardous waste generation and management, which began in 1993, will provide a basis for sufficient control. Enactment of the waste management law will enable Bulgaria to fully implement and enforce these regulations and to ratify the Basel Convention.

However, waste management practice is still rudimentary, and the bulk of the work needed to achieve a good performance is still to be done. There are numerous uncontrolled municipal landfills, and larger municipalities face a shortage of landfill capacity. Hazardous waste is not separated from other waste. Industrial waste is disposed of on site or mixed with municipal waste. The lack of pollution control measures for landfills has led to significant contamination of soil and groundwater. Waste minimisation in industry is not proceeding. Soil contamination poses threats to human health and crop production in some parts of Bulgaria and is a barrier in the restitution process for agricultural land.

It is therefore recommended that consideration be given to the following proposals:

- strengthen hazardous waste management; fully implement and enforce a tracking system and permits for management; improve hazardous waste disposal, initially by better monitoring; further promote demonstration projects for treatment and disposal facilities;
- encourage recycling of household and industrial waste, such as ash and slag from coal combustion, phospho-gypsum, paper, plastic and glass, particularly those items for which recycling facilities and infrastructure still exist;
- raise awareness of industry concerning waste management to encourage efficient implementation of regulations and good housekeeping practices through better information and training programmes;
- identify major risks posed by soil contamination and develop cost-effective programmes to reduce them.

2. Conserving Nature

Bulgaria is blessed with rich biodiversity and large natural areas, thanks to its geographic and climatic conditions. These assets were retained under central planning. The recent economic decline worked, on balance, to the advantage of nature conservation because pollution and other pressures decreased. Despite strictly limited human and financial resources, Bulgaria has taken some impressive steps since 1989. Protected areas have been extended to cover 4.5 per cent of the land, with representative samples of all ecosystems included. Species recovery plans have been prepared; the number of species and their populations have been maintained or increased. Restoration of a few important wetlands has started under the National Wetland Plan. The National Biological Diversity Conservation Strategy has been adopted.

Among environmental issues, however, nature conservation receives low priority. Institutional capacity and co-ordination among organisations are lacking. Some 90 per cent of the funds for nature conservation come from international sources. Laws on protected areas and other topics have been drafted but not yet adopted. Development of sustainable practices in forestry and agriculture is still in an early stage. As economic activity increases, the natural environment will face stronger pressures from pollution, development and tourism. New issues such as illegal hunting and results of the privatisation of farm land and the devolution of forest lands are also of concern. Bulgaria should accelerate the development of the necessary legal, institutional and planning mechanisms and move towards their implementation urgently.

It is therefore recommended that consideration be given to the following proposals:

- accelerate enactment of draft laws, especially that concerning protected areas;
- proceed with ratification of the Convention on Biological Diversity and develop legislation for its implementation;
- strengthen institutional capacity and improve intragovernmental co-ordination;
- develop an action plan for the Biological Diversity Conservation Strategy, addressing co-operation with NGOs and public awareness as well as habitat and species management;
- secure proper management of protected areas by promoting technical capacity;
- monitor and evaluate damage to the natural environment from acidifying substances and other pollutants;
- complete pilot projects to develop sustainable management practices for agricultural land, forests and rural tourism and establish sustainable development strategies for these areas;
- investigate options for increasing domestic financial resources for nature conservation, such as a nature protection fund with revenue from an earmarked nature tax;
- enhance public awareness through information campaigns and education programmes, especially in rural communities.

3. Integrating Environmental and Economic Decisions

Economic transition and environmental performance

Bulgaria suffered difficult economic conditions in the transition period; GDP fell by more than 24 per cent between 1989 and 1994, industrial output by 40 per cent and agricultural output by 33 per cent. Economic reform has been slow. Privatisation of large state-owned enterprises has been delayed; most highly polluting industrial facilities are still in operation; little large-scale investment for pollution control equipment has been made. As a result, the pollution and resource intensity of the economy remains very high. Reduction of discharges of pollutants into air and water was principally due to the decline of industrial and agricultural production rather than to more efficient production or cleaner industrial processes. Pollution loads may increase once economic growth resumes, unless environmental policy is strengthened.

Despite these difficult conditions, Bulgaria has made significant progress since 1989 in improving the policy framework and strengthening its institutions for protecting the environment. The 1991 Environmental Protection Law and its 1992 amendments provide a strong legislative framework for environmental policy. The development of the Environmental Strategy and its 1994 update has defined priorities. The Ministry of Environment, including the Regional Environmental Inspectorates, has been able to enhance its institutional capacity. Public information and participation have constituted a major success, with active involvement of environmental NGOs and preparation of a legal framework to guarantee public access to information. The introduction of EIAs has been the most important step in the development of policy instruments; more than 1 000 projects went through the process in three years. Recent legislative amendments, however, could weaken EIAs.

Environmental policy instruments need to be further developed and their effectiveness improved; better consideration of and coherence among different instruments are needed. More realistic standards are needed with improved enforcement. Permitting systems for polluting facilities should be introduced. Fines do not provide sufficient incentives for compliance and need to be upgraded. EIAs are, to some extent, used to compensate for the weakness of these instruments. The use of economic instruments is limited and most existing ones need revision to provide stronger incentives.

Total environmental expenditure in Bulgaria is estimated at 1.3 per cent of GDP for 1993; expenditure for pollution abatement and control amounts to about 1 per cent of GDP. The tight constraints on financial resources for the environment will not change in the near future. The Government should set clearer priorities and goals so as to use limited public resources in the most cost-effective way. Better funding mechanisms should be developed, such as higher user charges to pay for environmental infrastructure investments, including municipal waste water treatment, solid waste management and nature protection. The establishment of the National Environmental Protection Fund provides a good basis for increasing finance for environmental projects, but its revenue base has been small and its management weak. The Eco-Trust Fund, to be created to implement a debt-for-environment swap and to manage other sources of external financing for environmental projects, should help strengthen financing for the environment.

The vertical organisation of the administration has hampered institutional integration. The major sectoral ministries have given little attention to environmental issues; the Environmental Strategy and update were approved by the Ministry of Environment, but not endorsed by the Council of Ministers. The Ministry of Environment needs more capacity to deal with increasing work, including stronger economic and legal analysis of sectoral programmes. Integration at local level is also of importance. Steps are needed to deepen the integration of environmental and economic policies; sectoral policies, including those on energy, agriculture and transport, must include environmental concerns in their objectives and their operational components. Removing energy subsidies and establishing appropriate charges for raw materials and other natural resources should help encourage resource efficiency and thus reduce pollution.

It is therefore recommended that consideration be given to the following proposals;

- establish government-wide environmental policy objectives based on the 1992 Environmental Strategy and 1994 update;
- increase efforts to disseminate the Environmental Strategy and to promote public participation in the development of local environmental action plans;
- develop and put in place procedures for incorporating environmental concerns in the privatisation process before privatisation of large industrial enterprises gets under way;
- consider further use of economic instruments, such as increased user charges and the introduction of air and water pollution charges;
- examine pricing policies or tariff structures for such key natural resources as energy and water, to ensure that they take environmental considerations into full account; to this end, a review of financial assistance schemes that might lead to overuse of resources would be timely and useful;
- continue to use EIAs and give high priority to the preparation of new regulations for EIAs and environmental audits;
- strengthen the National Environmental Protection Fund by enlarging its revenue base and improving its management.

Sectoral integration: industry

Pollution from industry has fallen significantly since 1989; particulate emissions from industrial processes in particular have decreased. As a result, environmental conditions in most hot spots appear to have improved somewhat. While the decline in industrial output has played the largest role in reducing pollution levels, some highly polluting plants have invested in pollution control equipment. The 1994 Environmental Strategy Update identified good housekeeping and low-cost investments as the most practical and cost-effective means of reducing industrial pollution levels, considering the severe financial problems that many enterprises face. Pilot programmes have demonstrated the effectiveness of, and potential economic returns from, a cleaner production approach.

Despite this progress, pollution from industry remains high, and the energy intensity of industrial production has increased. Delays in economic reform have slowed industrial restructuring, while some branches of heavy industry have demonstrated renewed viability. It has been difficult to integrate environmental and industrial policies: as a result, industrial policies largely ignore environmental considerations. Integration could start promoting environmental audits and cleaner production initiatives in industry.

In the medium to long term, the overall environmental policy framework will play a key role in promoting better environmental performance by industry. The polluter pays principle should be the basis for a system of regulations and incentives on which investments, technical assistance and other measures must rest.

In the short term, it is recommended that consideration be given to the following proposals:

- integrate environmental protection measures into the practice of industrial management by fostering good housekeeping and environmental audit programmes to identify low-cost solutions for environmental improvement;
- promote training to improve capacity on the part of both government and enterprises for environmental auditing and environmental management;
- strengthen institutional integration between the relevant ministries at the stage of industrial policy formation, including those governing privatisation and economic development programmes, starting with "win-win" strategies such as the promotion of cleaner production;
- develop local programmes, with participation by enterprises, local government and the public, to improve environmental conditions in hot spots;
- further enforce existing penalties concerning air emissions and waste water discharges from industrial enterprises and implement environmental permit systems.

4. Strengthening International Co-operation

Since 1989, Bulgaria has greatly increased the importance it puts on international environmental co-operation. The Government has given greater attention to the requirements for implementation of international commitments. Internationally recognised principles and procedures have been introduced into national law, and draft laws have been prepared along these lines, including harmonisation of Bulgarian environmental requirements with EU standards. Within the context of the Environmental Action Programme for Central and Eastern Europe, Bulgaria has prepared its national programme (i.e. the 1994 Environmental Strategy Update). Bulgaria has been attracting international assistance for both environmental policy development and environmental investment projects. In October 1995, Bulgaria hosted the third "Environment for Europe" Conference in Sofia.

Nevertheless, Bulgaria still needs to develop an overall strategy for its international environmental co-operation. It should ensure that its international environmental commitments and the international assistance it receives are consistent with its domestic environmental priorities. In particular, the costs of implementing international environmental commitments should be considered closely, in light of economic constraints and domestic priorities. In many areas where Bulgaria has already made commitments, implementation programmes need to be developed.

Specific international issues deserving further attention include: i) the likelihood that domestic emissions of transboundary air pollutants will increase with a return to economic growth; ii) safety at the Kozloduy nuclear power plant; and iii) the depletion of fish stocks in the Black Sea.

It is therefore recommended that consideration be given to the following proposals:

- strengthen domestic capacity for analysis of the economic and institutional implications of international commitments and identify priority areas for action where both national and international benefits are maximised;
- continue to introduce internationally recognised concepts and approaches into domestic legislation;
- continue and strengthen efforts to identify and prepare priority environmental projects for international financing;
- continue co-operative efforts under the Danube and Black Sea conventions and programmes, and promote discussions on measures to protect fish stocks in the Black Sea;
- continue and strengthen bilateral co-operation with Romania and strengthen bilateral discussions with Turkey and Greece, in particular on water issues;

- accelerate enactment of the environmental legislation pending in the Parliament, to support implementation of international commitments.
- ratify regional conventions and related protocols such as the UN-ECE convention on transboundary watercourses, the protocol on further reduction of SO_x emissions and the VOC protocol, taking into account the need to apply a step-by-step approach.