



ECONOMIC COMMISSION
FOR EUROPE



UNITED NATIONS
ENVIRONMENT PROGRAMME

**GUIDELINES ON INTEGRATED
ENVIRONMENTAL MANAGEMENT**
IN COUNTRIES IN TRANSITION



UNITED NATIONS



ECONOMIC COMMISSION
FOR EUROPE
Geneva



UNITED NATIONS
ENVIRONMENT PROGRAMME
Nairobi

GUIDELINES ON INTEGRATED ENVIRONMENTAL MANAGEMENT IN COUNTRIES IN TRANSITION

Prepared under joint ECE/UNEP Project
FP/2101-92-02 (3002)



UNITED NATIONS
New York, 1994

NOTE

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

*

* *

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

ECE/CEP/5

UNITED NATIONS PUBLICATION

Sales No. E.94.II.E.31

ISBN 92-1-116609-8

Copyright © United Nations, 1994
All rights reserved
Printed at United Nations, Geneva (Switzerland)

FOREWORD

In 1993 the United Nations Economic Commission for Europe (ECE) and the United Nations Environment Programme (UNEP) launched a joint activity on Strengthening Environmental Management Capabilities in Eastern and Central European Countries.

The main purpose was to assess the opportunities of applying methods, policies and procedures used in market economies in countries in transition from a centrally planned to a market economy, to exchange views and experience between environmental policy makers and administrators both from countries in transition and from the west, to improve information dissemination systems for environmental management in the ECE region, and to strengthen the institutional capabilities and skills in environmental management and planning in countries in transition.

The organization of a series of workshops was at the core of the joint activity. In all, some 150 experts from 32 ECE member countries, international organizations and institutions participated in the workshops on: Legal and Regulatory Framework for Environmental Management (Sofia, Bulgaria), Institutional Arrangements and Coordination Mechanisms for Environmental Planning and Management (Ljubljana, Slovenia), Environmental Policy Planning

and Management Techniques (Kiev, Ukraine), and Application of Economic Instruments for Environmental Management (Tallinn, Estonia).

The results of the workshops laid the basis for a set of recommendations to Governments of ECE countries with economies in transition to a market economy, in the form of the present Guidelines on Integrated Environmental Management in Countries in Transition. These Guidelines were prepared by the ECE secretariat, within the framework of the ECE/UNEP Project FP/2101-92-02 (3002), and with the assistance of experts from: Czech Republic, Germany, Hungary, Lithuania, Netherlands, Poland, Russian Federation and United Kingdom.

The ECE Committee on Environmental Policy at its first session in May 1994 gave its general approval to the Guidelines on Integrated Environmental Management in Countries in Transition and decided on their wide dissemination. In accordance with established practice, the Guidelines are published under the responsibility of the ECE and UNEP secretariats.

CONTENTS

	<i>Page</i>
Introduction	1
I. STRENGTHENING POLICY DEVELOPMENT	3
A. Environmental institutions	3
B. Legislation and enforcement	8
C. Policy planning	11
D. Public participation	13
II. INTEGRATION WITH THE REFORM PROCESS.....	16
A. Privatization in industry	16
B. Rural reform	18
C. Structural changes	22
D. Economic instruments	24
E. Financing environmental policy	28
III. INTERNATIONAL COOPERATION	30

INTRODUCTION

Countries in transition have inherited a badly damaged environment, energy- and raw-material-intensive economies, and obsolete, polluting technologies. Furthermore, they are facing new constraints associated with the shift from a centrally planned to a market economy, such as mounting unemployment, high inflation, public deficits, protectionism, and the search for new markets for foreign trade following the collapse of the Council for Mutual Economic Assistance. It is, however, widely understood that the aim of the transition is not only to improve economic performance in the short and the long term but also to move towards sustainable economic development. In accordance with the Rio Declaration on Environment and Development, environmental concerns should form an integral part of the development process. This, in turn, calls for significant improvements in environmental planning and management and for the integration of environmental policy with other policies.

Given these legacies and ongoing changes and constraints, it is of the utmost importance to strengthen the environmental management capabilities of countries in transition. That is the reason why the 1993 Lucerne Ministerial Declaration put great emphasis on "institutional capacity building, including an efficient legal and administrative framework as well as managing capacity, training and education", when undertaking "essential policy and institutional reform" in these countries. The Guidelines on Integrated Environmental Management in Countries in Transition attempt to assist member Governments to meet that challenge, and contribute, in particular, to the implementation of the Environmental Action Programme for Central and Eastern Europe.

The Guidelines do not pretend to cover comprehensively all environmental policy and management aspects, but rather focus on priority issues and key instruments, tools and techniques that should be considered when attempting to strengthen environmental management capabilities at various levels and to integrate environmental considerations into the economic reform process including price liberalization, privatization, fiscal reform and decentralization.

Although these Guidelines are primarily addressed to national environmental authorities (e.g. ministries of the environment) in countries in transition, they should be brought to the attention of all those concerned with environment-related activities, so that shared responsibility can be assumed for meeting the Guidelines' objectives. They could also be applied, as appropriate, in other ECE countries, as they draw on up-to-date, collective experience in the ECE region in environmental policy-making and management. These Guidelines aim, above all, to serve as a point of reference for administrators, policy makers and decision makers.

The Guidelines do not replace but supplement legal instruments and policy recommendations on the environment developed within ECE and other forums. They are without prejudice to the particularities of national legal and administrative systems.

I. STRENGTHENING POLICY DEVELOPMENT

The efforts of countries in transition to strengthen institutional capabilities for environmental policy-making, planning and management are being undermined by numerous weaknesses, deficiencies and difficulties, such as weak or inadequate legislation, the lack of political clout of environmental authorities, low public awareness, lack of well-established target groups which represent specific interests, the lack of managerial skills, the inadequate information base, not to mention the general lack of financial resources. Whatever the constitutional, administrative, economic and cultural context of a specific country, the environmental authorities should nevertheless consider the approaches and measures recommended below when establishing the legal framework and institutional arrangements for effective environmental performance.

A. Environmental institutions

A coherent system of environmental authorities with a clear division of competence should be established at the national (federal), regional (provincial) and local levels to develop and implement effective environmental policies. It is also important to establish close liaison with the parliament and its environmental committee(s).

At the national level, the main tasks of the environmental authorities (ministries of the environment) should generally centre on:

(a) Formulating environmental objectives, policies, plans and programmes, and following them up;

(b) Preparing relevant legislative proposals and setting standards;

(c) Developing environmental policy and management instruments (permit systems, environmental impact assessment (EIA) procedures and methodology, economic instruments, etc.);

(d) Promoting the integration of environmental and sectoral policies;

(e) Coordinating and supervising environmental monitoring, standardizing monitoring methods and reporting, maintaining environmental data and information centres;

(f) Promoting environmental research and development and the introduction of environmental technologies;

(g) Coordinating environmental education and public information; and

(h) International cooperation.

Opportunities should be explored for establishing agencies subordinated to the ministries of the environment. Such agencies can coordinate and carry out such functions as the management of water basins and nature conservation areas; monitoring; preparation of reports on the state of the environment; environmental research and development; and dissemination of information.

Environmental data centres need to be considered as important elements in environmental administration. Their main tasks are to collect, process and store data and to provide data to decision makers and the public. Their activities should also concentrate on the development of integrated monitoring methods and techniques, inter-laboratory calibration, certification, and the promotion of good laboratory practices in accordance with international requirements such as the OECD Good Laboratory Practice Principles and Compliance There-

with. The division of responsibilities and activities between the environmental data centres and the national statistical offices needs to be reasonable. Both, however, need to avoid unjustifiable duplication and overlapping. For the purpose of harmonization, the relevant activities of international organizations should be followed. Cooperation with existing international centres such as the European Environment Agency should be sought.

Advisory bodies to national environmental administrations should be considered as important instruments of environmental policy-making. Their members may include experts with particular expertise or responsibility from provincial authorities, municipal associations, industry and farmers' associations, academic institutions, and environmental non-governmental organizations (NGOs). Advisory bodies may be very helpful in the elaboration of environmental strategies, the development of new laws and regulations, public information, etc. They can also provide a forum for building consensus.

Environmental policies should be implemented as far as possible by regional (provincial) and local authorities. Permitting, monitoring of compliance with permit conditions, and enforcement should preferably be dealt with at the regional level. While decentralizing environmental management systems helps the performance of environmental activities, it should not be a simple shift of competence. The rights and obligations of the regional and local authorities should be clearly defined in the law and be compatible with their general capabilities and expertise.

In order to use the resources available at the regional level effectively, environmental functions may be concentrated either in environmental units of general regional administrations or in regional bodies subordinated to national environmental authorities. Any subordination to, or dependence on, regional development structures should be avoided, since the environmental impact assessment (EIA) of development projects should be carried out independently. If there is a

separate regional environmental body, the territory to which its jurisdiction extends should preferably correspond to that of the general regional administration. Powers should not be delegated from regional to local levels schematically. As a general rule, it should be done municipality by municipality, and only if the municipality in question has the necessary resources and know-how.

Environmental inspectorates should be established or strengthened to improve enforcement and compliance with environmental permits, licences and EIA requirements, to halt activities which violate environmental regulations, and to monitor preparedness measures for environmental emergencies. They should be authorized to inspect the state of the environment, assess a site in the light of applicable environmental legislation, and enter any business premises at any time to request information needed to assess the state of the site and to obtain access to documents and data relevant to the inspection.

The strategic and operational capabilities of environmental authorities depend not only on the infrastructure of the environmental administration at all levels, but also on their relations with other sectors. The long-term objective should be for the various ministries themselves to integrate environmental considerations into their specific activities.

Ministries of the environment should not attempt to manage everything on their own. Instead of attempting to concentrate all environment-related activities within the framework of the ministries of the environment, effective and appropriate inter-ministerial coordination and cooperation should be established based on partnership, particularly with public health authorities and such sectors as economic policy, energy, transport, agriculture, forestry, and trade. Relevant existing inter-ministerial bodies (councils), ad hoc working groups and task forces should be used, or new ones created, to coordinate cross-sectoral issues. At the same time, some sector-oriented

structures may be established in the ministries of the environment to improve coordination.

On the other hand, it may not be advisable to fragment responsibilities for environmental activities requiring a high level of expertise and to divide them between different national administrations. This is especially important in small countries where resources need to be concentrated; otherwise, it may be difficult to ensure that a critical mass of expertise is available to undertake activities or perform functions effectively. For instance, radiation protection and nuclear safety, the control of chemicals and genetically modified organisms are activities whose administrative control, monitoring and research cannot or should not be separated.

Environmental authorities together with the ministries of science and technology, as appropriate, should establish effective arrangements to coordinate environmental research and foster environmental technology. Multidisciplinary, integrated research programmes should be promoted to better understand pollution transfer mechanisms between environmental media and pollution effects, to apply the ecosystem approach to environmental management, as well as to develop low- and non-waste technology.

Ministries of the environment and/or ministries of science should earmark funds for the promotion of environmental research and development, and pool financial resources from various sources, including private and foreign assistance, to support priority environmental research programmes at scientific institutes with recognized expertise, which are currently short of funds.

Continuous training for environmental administrators at all levels should be organized. Particular attention should be given to building and improving skills and knowledge of environmental law, environmental economics, environmental impact and risk assessment and auditing, as well as conflict resolution techniques. The training for senior staff should also

cover policy formulation and policy assessment methods. The training should be customized to suit each category of administrators. Environmental training programmes should involve not only the staff of environmental authorities, but also those who deal with environmental issues in economic sectors, particularly staff involved in formulating policy and developing sectoral and multi-sectoral programmes.

B. Legislation and enforcement

When developing new or revising existing legislation, environmental policies should be considered at least on a par with other policies. Furthermore, environmental requirements may be taken up in a country's constitution, and therefore observed by all actors at the national, regional and local levels.

Inconsistencies between different environmental regulations should be resolved. This may be achieved by means of comprehensive environmental protection acts or coherent sets of environmental legislation, and clear procedural and institutional rules concerning enforcement, prevention and the resolution of conflicts. Proper consideration should be given not only to enacting environmental legislation as such, but also to incorporating environmental provisions into privatization, industrial, commercial, fiscal, foreign investment, trade, customs, banking, insurance, regional-development and land-use laws. Comprehensive legislation with an integrated approach to environmental protection should ensure, *inter alia*, that:

(a) The responsibilities and powers of the various actors for the protection of the environment are clearly defined and delimited;

(b) National environmental regulations are coherent and sufficiently strict so that environmental objectives can be reached. In localities or regions with a high concentration of polluting activities such as energy production, chemical industry, etc., stricter regulations may be imposed;

(c) The processing of different permit applications for one project is coordinated. The ultimate objective should be to develop one single integrated permit covering the various environmental media;

(d) Environmental considerations are incorporated into sectoral policies, plans and programmes at the national, regional and local levels;

(e) The ongoing impact on the environment of existing plants and installations causing significant adverse impact is examined, and that, based on the results of the examination, the necessary adjustments or alterations are made (step by step, where necessary) to reduce, control or prevent it;

(f) Proposed new economic development projects are subject to an EIA procedure as part of the authorization process. ECE policy recommendations on the application of EIA and on EIA auditing may serve as guidance;

(g) Public authorities periodically report on the state of the environment, and companies/enterprises are obliged to provide, on a regular basis, environment-related information to the competent authorities;

(h) The public has the right of access to environmental information and that relevant procedures are in place, taking into account clearly defined restrictions for reasons of personal privacy, industrial and commercial confidentiality, and national security. The right to challenge administrative decisions in court should also be ensured.

Considerable attention should be given to adjusting, where necessary, national legislation to the requirements of legally-binding bilateral and multilateral environmental instruments. Legal and administrative procedures should be accompanied by other well-prepared measures for the implementation of legally-binding international commitments. During the negotiations of new instruments, those who will be affected, such as business, industry and regional or local governments, should be consulted.

Feasible and enforceable environmental standards should be developed to strengthen compliance with, and enforcement of, environmental legislation and regulations. Care should be taken, however, when considering lowering existing, often overly strict, environmental standards, even when this is arguably justified on economic and/or environmental grounds, since such action may touch on particularly sensitive political and social issues. Present standards, if too stringent, may be retained as ultimate goals for the achievement of high environmental quality. On the other hand, European Union or similar standards should be introduced gradually through the application of intermediate standards.

In order to make existing industrial plants and facilities comply with environmental regulations and standards, appropriate and realistic plans should be developed, including compliance schedules for individual sectors of industry and industrial plants, taking into account human health and environmental, economic and social considerations. Compliance schedules should aim at promoting sustainable growth while achieving environmental standards and objectives. It may be necessary to provide specific incentives to implement the plans successfully.

Permits should be issued for a specific period of time and be reviewed and/or terminated when legislation or ownership changes, when there are developments in best available technology and when a plant plans or undertakes substantial modernization. Permits should also incorporate compliance schedules, monitoring and reporting requirements.

Effective responsibility and liability regimes for environmental damage should be developed or further strengthened. They need to be legally clear so as not to leave plaintiffs and defendants in unnecessary doubt as to their legal position. These regimes need to impose acceptable levels of regulation which are then effectively enforced, in order to avoid wasting resources on red tape and inhibiting economic growth. Responsibility and liability regimes for environmental damage

should be based on the principles of preventive action, the polluter-pays principle and the public's right to have polluting activities restricted or terminated and to claim compensation. A strict liability regime should be considered, particularly if it can be used to promote the internalization of the costs of environmental damage. The introduction of appropriate financial security schemes to cover environmental damage should be promoted.

When necessary, relevant legal and administrative sanctions should be used, such as imposing administrative or judicial fines and penal sanctions, suspending or revoking permits or licences, and issuing orders to discontinue activities that violate environmental requirements and seriously threaten human health and the environment.

C. Policy planning

A systematic approach to environmental policy planning should be applied, weighing the environmental, economic and social implications of different alternatives. Environmental policy should clearly define what should be achieved, when, by whom, and at what cost. Preference should be given to the options providing high environmental benefits in the most cost-effective way. This explains the importance of trade-offs among different issues in environmental policy planning (socio-economic, geographic, inter-generational). Trade-offs should be open and transparent. Mediation among all actors, including the general public and NGOs, should provide a necessary vehicle for consensus building on environmental policy targets and objectives. However, decision makers should have the last word.

Environmental policies should be based upon the precautionary principle, the polluter-pays principle, the sustainability principle, and the concept of shared responsibility, as, according to the Rio Declaration on Environment and Development,

the ultimate goals of sustainable development can be achieved only by concerted action of all relevant actors.

An integrated, cross-media approach to preventing and resolving environmental problems should be promoted, rather than the traditional medium-by-medium approach (air, water, soil). It is of the utmost importance to avoid improving quality standards in one environmental medium at the expense of other media. A cross-media approach recognizes the integrated nature of the environment. In seeking to reduce the overall pollution burden, it emphasizes the importance of preventing pollution at source by improving energy efficiency, avoiding the generation of waste and introducing clean technologies, for instance.

Environmental policies require detailed targets. Targets signal to all actors, whether environment ministries or other ministries, local governments, business or the public, that change is required. The actors should be defined and the targets and objectives should have clear time-schedules. Environmental objectives should be expressed as far as possible in measurable form. Region-specific objectives may be necessary in some countries.

Priority setting in environmental policy-making should be based on comprehensive analyses of the environmental conditions and economic, social and other factors in a given country. The immediate and short-term objectives of environmental policy should address the most urgent problems, such as threats to human health caused by poor environmental quality, productivity losses caused by damage or destruction of physical structures and natural resources, depletion and degradation of environmental resources, and the deterioration of or the threat of irreversible damage to biodiversity. Proper attention should be given to transboundary and global problems, and to commitments made within the framework of relevant international agreements (e.g. conventions on transboundary air and water pollution, prevention of industrial accidents, EIA, transfrontier movements of hazardous wastes, ozone

layer protection, biodiversity conservation, and climate change). In the long term, the national goals should strive to achieve the convergence of environmental conditions and instruments throughout Europe.

Internationally agreed policy principles and elements should be used, as much as possible, in the formulation of policy. Relevant internationally agreed documents should be disseminated among the appropriate levels of government. To make these documents operative, they should be translated into the national languages.

To achieve environmental policy objectives, a variety of policy instruments—regulatory, planning, economic and voluntary—should be applied. Specific instruments should be selected that are appropriate for a particular objective, environmentally effective and cost-effective, and compatible with the institutional framework within which they are to be used. The “ideal” system would generally be a hybrid of policy instruments.

A regular and comprehensive follow-up to the accepted environmental policy should be provided for. Evaluating the progress would allow the introduction of changes. The environmental authorities should make progress reports available to the public (through, for example, state-of-the-environment reports).

D. Public participation

In the process of building a democratic society, there is an urgent need to promote public participation in environmental decision-making based on increased public awareness and access to environmental information. Relevant legal procedures and administrative mechanisms should be put in place following Principle 10 of the Rio Declaration on Environment and Development.

Public authorities should define practical arrangements to make environment-related information from the authorities themselves and from economic actors effectively available to the public at large. Environmental data and information should be processed in an adaptable form for the purposes of mass communication. Any restriction on the access to such information should be justified by clear legal provisions regarding personal privacy, confidentiality, industrial and commercial secrecy or national security. The public should receive a motivated justification case by case.

Giving due account to these considerations, the provision to the public of accurate and reliable information on a company's environmental management performance should be ensured. Such information should include:

- (a) Environmental policy, objectives and targets that address relevant environmental issues;
- (b) Information on environmental activities and performance;
- (c) Information about the status of the environmental management system.

Permit procedures should also provide for public participation. The disclosure of information to the public on proposed activities which are likely to cause an adverse effect on the environment should be part of an EIA procedure. Suitable methods for reaching agreement between the proponent of the activity, the authorities responsible for its authorization and the public should be developed and applied. Relevant provisions of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991) and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992) can serve as examples.

The competent authorities should ensure that specific information is made available concerning hazardous activities,

inherent risks of industrial accidents, preparedness and safety measures planned by industry and public officials, as well as the actions that the public needs to take in the event of an accident. Relevant provisions of the Convention on the Transboundary Effects of Industrial Accidents (Helsinki, 1992) should be followed, as appropriate.

Programmes aimed at providing environmental information to the public about consumer products should also be promoted by, for example, launching environmental awareness programmes, monitoring industries' "green product" claims, developing consumer education projects, and publicizing the results of comparative product tests with ecological criteria. The public awareness campaigns of environmental and consumer groups should be supported to increase pressure on economic actors to adopt environmentally sound production methods and produce environmentally sound products. To this end, clearly defined legal rights should be established for NGOs, providing them, in particular, with a similar right of access to information and access to courts available to individuals.

II. INTEGRATION WITH THE REFORM PROCESS

As the transition towards a market economy generally implies making an effort to use energy and natural resources more efficiently, introducing real resource pricing, and scaling down governmental support to resource-intensive enterprises, it creates opportunities for partnership between economic and environmental policy makers. “Win-win strategies” should be formulated and promoted to simultaneously support sector reconstruction, increase efficiency, create jobs, and improve the environment, as advocated in the Environmental Action Programme for Central and Eastern Europe.

A. Privatization in industry

The ongoing privatization process in countries in transition provides an opportunity to improve the environmental performance of a large number of economic actors and even entire economic sectors. Privatization should make it possible, in particular, to resolve the conflicts which arise when the Government acts both as environmental regulator and as owner of the regulated enterprises.

Privatization policy should also include environmental objectives, in addition to its traditional objectives (obtaining revenue from selling the company, maintaining employment, requiring buyers to modernize the firm, contributing to regional economic development, generating tax revenues for the future).

The environmental authorities should have a designated part in the privatization process, and institutional arrangements should be made to involve them in the work of the responsible privatization authorities, e.g. privatization and industrial development agencies, State property committees, foreign investment boards, ministries of finance and trade. The staff and the resources of environmental authorities should be properly directed to this end. The establishment of inter-ministerial units should be considered; these would be responsible for monitoring environmental requirements in privatization, assessing environmental damage costs and advising in environmental liability questions.

Environmental aspects should be adequately reflected in privatization/foreign investment manuals setting out the general outline and objectives of the privatization process. Environmental clauses should be included in model privatization contracts on an equal footing with standard clauses on employment, investment, surplus profit, etc.

A clear and uniform set of regulations and administrative guidelines should define responsibility for environmental damage. The responsibility for past environmental damage should be decided before the privatization process, when property rights still rest with the State. The extent of past liability should be clearly established at the time of ownership transfer to avoid uncertainty and future litigation. Privatization agencies and environmental authorities should cooperate closely in establishing the extent of liability for environmental damage on individual sites.

An environmental evaluation procedure should be developed to allow for the allocation of liabilities for environmental damage prior to the privatization. Risks associated with remedial clean-up activities should also be examined. The evaluation statement and remedial clean-up programmes need to be finalized before the transaction is completed. The environmental evaluation statement should be published in the information bulletins of the privatization authorities.

A part of the purchase price paid for the privatized assets may be kept in escrow and used for necessary environmental payments. Escrow fund pay-outs should be based on the evaluation of environmental conditions on the date that the deal is completed, and on the implementation of a remedial programme to be agreed between the purchaser and the environmental officials.

To attract investors, some companies may have to be sold well below their actual value or even at a negative price, if their past environmental mismanagement has caused severe environmental problems, and if new strict environmental regulations might entail unacceptable costs to the future owners. Investing in the privatization of environmentally unsound enterprises and in environmental hazard areas may be more attractive if tax breaks and other incentives are available.

Once privatized, enterprises should generally be responsible for their ongoing adverse environmental impact. Environmental authorities should specify the environmental standards that the privatized company is required to meet and the time allowed for adjustment. When establishing or reviewing permits for the privatized companies, existing environmental standards should be imposed, with a defined adjustment period, if necessary. To encourage investment, environmental permits should be granted without undue delay. The licensing procedures should ensure both adequate assessment procedures and public participation.

B. Rural reform

Environmental authorities should participate in the privatization of land and be effectively involved in monitoring compliance with the relevant legislation. Specific provisions for the protection of soil, groundwaters and surface waters, the conservation of biodiversity and landscapes should be written into farm privatization contracts, irrespective of the form of

privatization, i.e. land restitution to former owners, lease, purchase, or a free distribution among members of collective farms or employees of State farms.

Rural reform and a cut in State subsidies can result in some agricultural land being abandoned. An integrated management approach should be used to avoid the loss of the resource. Alternative environmentally sound land uses such as afforestation, biomass cultivation and rural tourism should be promoted.

Rural reform and a move from big State farms to a multiplicity of small farms and agricultural units make the assessment of agriculture's impact on the environment and its control more complicated for the environmental authorities. The scoping of the possible environmental effects of new strategies, programmes and regulatory proposals in the agricultural sector on water, soil, air and the living environment should be undertaken in an integrated manner. Control measures in the agricultural sector should be based more on economic instruments following environmentally sound criteria.

Although the use of artificial fertilizers and pesticides has recently been reduced in countries in transition for economic reasons, it should not be assumed that their use and, consequently, their threat to the environment will remain low once the economy recovers. Agricultural and environmental authorities should jointly draw up codes of good agricultural practice. These codes should include advice on methods and practices which considerably lower the fundamental need for pesticides and fertilizers. Ideally, fertilizer plans should be drawn up farm by farm, taking into account the nutrient input, such as mineral and organic fertilizers, livestock and green manure, in order to adjust fertilization to the actual demand at different growth stages.

Farmers should generally adhere to good agricultural practice without financial compensation. It may be appropriate, however, to compensate them for making more substan-

tial changes in agricultural production, going beyond good agricultural practice, such as extensification and the restoration of habitats. Direct payments to farmers should be made on condition that they comply with these environmental protection requirements.

The environmental authorities, together with local municipalities, should establish comprehensive training and advisory systems for farmers. Training should cover, for instance, the correct use of pesticides, including methods for the control of pesticide-resistant species. Proof should be given of the relevant skills and knowledge of everyone working with pesticides before an authorization is given to them. Training in integrated plant protection methods, appropriate fertilization methods, waste management techniques, and environmentally sound farming equipment should also be promoted. Advisory systems for fertilizer application, plant protection and sprinkler irrigation should be established or revised in order to lay more emphasis on the consideration of water, soil and the overall environmental conditions when providing advice. A government agency should be designated to act as a centre of expertise. As a rule, advice should be provided free of charge.

In the process of rural reform, privatization and restructuring, great care should be taken to preserve the status of protected areas. If new land-use practices, such as forestry, hunting, recreation, and small-scale private farming, are introduced in these areas, they should be effectively controlled. The restitution of ownership in the protected areas to former landowners requires clear legal procedures to ensure, *inter alia*, the continuous conservation of species and habitats of particular conservation concern.

The competent authorities should prepare a management plan for each protected area. It should be site-specific and detail habitat and species management regulations. If changes to the existing land-use practices are proposed, the competent authorities should discuss this with the owners and occupiers

in order to agree on the modifications to the management plan. Where necessary, compensation schemes should be set up to encourage landowners to keep a site intact. The provisions of the ECE Code of Practice for the Conservation of Threatened Animals and Plants and Other Species of International Significance (ECE/ENVWA/25) should serve as guidance to this effect.

Ownership in surface water and groundwater should be clearly defined by law. Sections of rivers, lakes and ponds on privately-owned land should be subject to regulation by relevant authorities for the protection and sustainable use of water resources. Owners' rights and duties should be defined, for instance, in specific action plans covering the cleaning and maintenance of the water body's embankments and bottom, the inspection of fishing licences, the creation of water protection zones, etc. The right of access to surface water bodies such as the right to walk along its embankment, to row, to angle, to take water for personal use, etc. should be defined in the legislation. The right of access should not be to the detriment of the environment nor encroach upon the landowner's rights.

Groundwater should be declared in the public domain, or authority should be vested in the Government to restrict the rights accruing from its private ownership in the public interest. Groundwater-use rights should be preferred to private ownership. Precise rules should be drawn up to select criteria for the recognition of groundwater-use rights and for the granting of permits. Such rules should also lay down conditions for the transfer, modification or abolition of use rights. The competent authorities should introduce effective permit and penalty systems. The system should promote preventive approaches, inducing users to control any activity affecting the quantity and quality of groundwater. The detailed provisions of the ECE Charter on Groundwater Management (E/ECE/1197) should be followed to this end.

C. Structural changes

Ongoing structural changes in the energy, industrial, agricultural and other economic sectors of the countries in transition have a significant impact on the use of natural resources and on the generation of pollution. Environmental authorities should take advantage of the restructuring of the national economy to integrate environmental requirements and objectives into economic policies and to improve the environmental attitude and performance of economic actors.

Environmental authorities should fully exploit the improvements promoted by economic reform, such as technology changes, resource saving, energy efficiency and conservation, the creation of new services, new business and management practices, “good housekeeping” measures, and building new skills, to further integrate environmental management.

The aim should be a closed-loop economy based on the 5 R principles (reduction, replacement, recovery, recycling and reuse), sustainable material cycles, saving and replacing non-renewable resources. Waste minimization should become part of a broader approach to changing industrial processes and consumption patterns, with an emphasis on pollution prevention and cleaner production strategies. Appropriate measures and procedures should be promoted to: optimize the product lifetime; provide guidance for product and process designers to ease the dismantling of used product components and their subsequent recycling and reuse; prevent waste generation by introducing low- and non-waste technology; and develop a suitable infrastructure for recycling, recovery, reuse and treatment of waste. ECE policy recommendations on the 5 R policies, on the economic implications of low-waste technology, on low-waste technology and environmentally sound products, and on environmental product profiles, should serve as guidance.

Self-regulation by the industrial sector should be promoted through, for instance, voluntary agreements between environmental authorities and industry organizations such as chambers of commerce and manufacturers' associations. The competent authorities should seek to phase in long-term environmental targets in consultation with industry organizations at the level of industrial sectors and specific priority product groups. The main responsibility for determining ways and means of meeting these targets should be left to the manufacturers themselves as far as possible.

Voluntary efforts by economic actors not only to comply with regulations and standards but also to introduce more environmentally sound approaches should be encouraged. To this end, use should be made of guiding principles for environmental management, developed within relevant international forums, which promote the integration of environmental performance requirements into the firm's objectives and policies.

Voluntary eco-audit schemes should be developed and introduced gradually. Companies would be able to participate in eco-audit schemes if they established an internal environmental management system; set objectives and measures aimed at continuously improving their environmental performance; prepared an environmental statement that is validated by accredited environmental auditors; submitted the validated statement to environmental authorities, etc.

Eco-labelling schemes should be promoted as a voluntary measure for producers to prove the environmental soundness of their products, and to encourage the production and purchase of products with the least harmful effects to the environment throughout their life cycle (from cradle to grave). Their criteria and compliance with them should be guaranteed by the relevant authorities or designated institutions. Participation in the international harmonization of relevant standards and criteria setting should be promoted.

More attention should be paid to the creation of favourable conditions for environmental businesses. Legislative support for these firms should be complemented by financial incentives, such as soft loans, tax and customs-duty incentives. Favourable conditions should also apply to foreign direct investments in the environmental goods and services sector to promote the transfer of environmentally sound technologies and management practices.

The positive impact of an effective environmental policy on employment should be demonstrated in order to gain support for its implementation. Consideration should be given to the jobs created in industries that produce pollution-abatement equipment, in public environmental authorities and services, in environmental consultancy firms, as well as in various economic sectors through the demand for goods induced by environmental regulations.

D. Economic instruments

Environmental degradation and the inefficient use of natural resources require intervention to properly price environmental resources and internalize environmental costs. The economic restructuring offers an unparalleled opportunity to incorporate economic instruments into environmental policies. Integrating the true environmental costs and risks into economic activities will help make decision makers aware of the implications of their policy decisions, although obviously the price of many environmental assets can never be determined.

Economic instruments should not be considered as replacing direct regulations and administrative interventions in environmental policy. They should be linked to and supplement clearly defined standards on emissions and environmental quality. Cost-effective and environmentally effective approaches to pollution prevention and control which support or reinforce each other should be combined. The OECD

“Guidelines and considerations for the use of economic instruments in environmental policies” should be applied for that purpose, as recommended by the Senior Advisers to ECE Governments on Environmental and Water Problems at their fifth session in March 1992.

The general principles which should guide the elaboration and use of economic instruments in the long run are the polluter-pays principle and the user-pays principle. However, compensation schemes may be introduced to offset the effect of steep cuts in income on the disadvantaged sections of society. Ways and means should be identified to cope not only with the high economic and social costs borne by all economic actors and the public at large, but also with other constraints resulting from the application of economic instruments during the transition process, such as underdeveloped markets and the limited capacities of environmental and fiscal institutions.

When proposing economic instruments, it should be taken into account that their environmental effectiveness will depend on the ability of the regulator to set rates at a level which promotes the prevention or reduction of adverse environmental impact and ensures that resources are used efficiently. In addition, most economic incentive systems require an underlying regulatory system with strict monitoring and enforcement, including the collection of payments and the prevention of fraud, which may be costly. Therefore, the benefits and costs of introducing any economic tools should be carefully evaluated.

In order to promote economic incentives to reduce pollution and improve resource use, resource prices and charges should be high enough to induce changes in behaviour, and foster preventive measures and clean technologies. However, such measures should be phased in gradually, as price increases and charges may undermine the competitiveness and profitability of enterprises that are struggling to survive in the

current process of privatization and economic restructuring, and hinder the creation of new enterprises.

Proper pricing of energy and appropriate energy taxes, coupled with other environmental policy instruments, can largely contribute to reducing air pollution. The cost of electricity and heating should be based on individual metering and should, as far as possible, reflect economic and environmental costs. The gradual increase in energy prices to world-market levels would create a "win-win" situation both for the economy and for the environment. In the short term, price increases may have to be accompanied by income support measures for vulnerable groups of society.

Energy intensity and emissions of energy-related pollutants should be further reduced by energy taxation. Leaded petrol should be taxed in a manner that makes it uneconomical relative to lead-free petrol. The tax should be progressive so that markets can accommodate the growing demand for unleaded petrol.

Emission trading (bubble concept) or creating markets for emissions can also save costs. Introducing the tradeable permit system is possible only if the geographical size of the region is adequate and if there are a large number of polluters and strong administrative control.

Appropriate pricing of water resources and water-related services would promote an effective use and allocation of these resources. It would also help water services to recoup their costs. The installation of meters for water consumption by source, district and individual households should be encouraged. A price differentiation system should be introduced step by step, taking due account of the social and economic implications. Sewage disposal from enterprises and households should be charged according to marginal treatment costs. For practical purposes, sewage charges may be combined with water-use charges, where appropriate.

A clear differential pricing policy should be established that is geared towards internalizing external environmental costs in waste management. The cost of treatment and landfill of waste should reflect all inherent costs for environmental and health protection. Waste disposal fees, hazardous waste charges or taxes should be applied to encourage waste reduction and recycling schemes, and to raise revenue for waste collection and waste processing. Product charges should be levied on batteries, used tyres, and packaging (e.g. plastic bags). Deposit-refund schemes should be extended beyond bottles and cans. Products subject to deposit-refund systems should be widely used and a collection system should be easy to create.

Charges and taxes should be based on the quantity and composition of the discharges. The rates should be set higher than the prevention costs to encourage polluters to reduce their discharges. Where inflation is high, as in many countries in transition, these environmental charges and taxes will need to be index-linked to maintain their effectiveness. Product charges could, for instance, be expressed as a percentage of the product's price to bypass the erosive effect of inflation on the incentive.

There should be fines and sanctions for violating pollution control regulations. They should depend on the extent to which established limits, standards or norms are exceeded. They should be high enough to enforce compliance and compensate for damage.

On the other hand, it may be appropriate to apply some financial assistance in the transition period, so as to mitigate the short-term social and economic consequences which might otherwise result. This assistance may include, for instance, tax allowances or grants towards the capital cost of the purchase of new environmental equipment. The latter could be financed from the environmental charges and need not affect other government budgets. Increasing taxation on polluting activities and natural resource use (eco-taxation), while reducing taxes

on labour or goods and services (value added tax (VAT)), should be considered.

E. Financing environmental policy

Although cost estimates of environmental policies, notably damage costs, avoidance costs and abatement costs, are not infallible, they nevertheless play an important role in formulating environmental policies, and are closely associated with economic decision-making. Investment costs, average annual costs and the cost-effectiveness of the most important environmental measures should be calculated, to help set priorities, formulate relevant action programmes, and devise appropriate funding mechanisms.

These estimates should take into account both the possible effects of economic policies on the environment and the impact of environmental policies on the economy. All stakeholders should, as far as possible, be involved in cost estimates to ensure impartiality and comprehensiveness.

Environmental expenditure should be funded mainly by the resources of enterprises and companies as well as the State budget, budgets of regional and local public bodies. Budgetary funds should be used to finance public environmental administrations and services at various levels, and specific environmental programmes and projects.

Both environmental and financial criteria should be developed to assist in the selection of environmental projects to be financed. In awarding grants, preference should be given to research institutions and non-profit organizations. Environmental projects of the business sector should be financed mostly by commercial loans or soft loans. Priority should be given to investments in environmentally sound technologies, as opposed to end-of-pipe technologies. In the environmental

lending procedures, banking and environmental expertise should be combined.

The creation of earmarked environmental funds should be considered as a temporary measure, making transparent that environmental charges, fines and taxes are used for environmental quality improvement through financing public environmental programmes and private environmental investments. In the long run, when the polluter-pays principle will be fully operational, the revenues from environmental taxes and natural resource taxes should form part of the overall central budget. Earmarked environmental funds should then be used only to fund specific activities such as remedying past damage and solving environmental problems for which polluters cannot be identified or the cost recovery is difficult to enforce.

III. INTERNATIONAL COOPERATION

Wider participation should be ensured in major international environmental conventions and in the environmental activities of international governmental and non-governmental organizations. Environmental authorities should prioritize their actions in international cooperation and concentrate their efforts accordingly. Institutional arrangements should be made to involve not only the staff of environmental authorities, but also competent experts from other government and non-government institutions, including scientific organizations. Special attention should be given to improving foreign language skills, and the understanding of administrative and working methods of international organizations and other partners. Efforts should be made to ensure continuity in institutional arrangements and personnel.

Proper attention should be paid to the results of the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, in 1992, and the activities of the Commission on Sustainable Development should be efficiently supported. The implications of Agenda 21 should be analysed and national follow-up programmes should be prepared where they have not yet been adopted.

Particular attention should be given to the ratification or adherence to environmental conventions on the control and reduction of air pollution; the protection and use of water resources; the handling of hazardous wastes; environmental impact assessment; the prevention of, preparedness for and response to industrial accidents; climate change; the protection of the ozone layer; biodiversity and nature conservation; and the protection of the marine environment.

The provisions of these conventions should be reflected in national legislation and regulations. Full effect should also be given to the resolutions, recommendations and decisions adopted by the respective governing bodies to these conventions. Efforts to improve the implementation of and compliance with these conventions, including relevant reporting systems, should be supported. Domestic financial resources should be made available, as far as possible, to fund the participation at meetings under these conventions.

Where necessary, bilateral and multilateral agreements or other arrangements should be developed with neighbouring countries to define mutual responsibilities for the protection and rational management of the environment and natural resources such as transboundary waters and shared protected areas, and to encourage an exchange of information and expertise. Joint bodies, involving local authorities, should be established, where appropriate.

Environmental authorities should make appropriate institutional arrangements to better coordinate and manage foreign assistance programmes in order to avoid overlapping, duplication, and the inefficient distribution of limited resources. Assistance programmes should support the implementation of established environmental priorities in view of the regional and global environmental concerns. Assistance programmes should be considered, in particular, as an important instrument for strengthening the national capacities to comply with obligations under international environmental conventions.

Where possible, different sources of financing (national and local budgets, earmarked funds, grants or concessional loans, equity investments, etc.) should be combined to raise sufficient resources to resolve the environmental problem in question. Programmes which envisage follow-up investment in the near future should receive priority for technical assistance. Feasibility studies should generally be undertaken when investment funds have already been earmarked.

Technical assistance should be weighed against the capacity to absorb it efficiently. Local experts and institutions should be involved in joint projects not only to ensure a proper supply of information and a better understanding of local circumstances, but also to develop their skills in environmental management and transferring “know-how”.

كيفية الحصول على منشورات الأمم المتحدة

يمكن الحصول على منشورات الأمم المتحدة من المكتبات ودور التوزيع في جميع أنحاء العالم . استعلم عنها من المكتبة التي تتعامل معها أو اكتب الى : الأمم المتحدة ، قسم البيع في نيويورك أو في جنيف .

如何购取联合国出版物

联合国出版物在全世界各地的书店和经售处均有发售。请向书店询问或写信到纽约或日内瓦的联合国销售组。

HOW TO OBTAIN UNITED NATIONS PUBLICATIONS

United Nations publications may be obtained from bookstores and distributors throughout the world. Consult your bookstore or write to: United Nations, Sales Section, New York or Geneva.

COMMENT SE PROCURER LES PUBLICATIONS DES NATIONS UNIES

Les publications des Nations Unies sont en vente dans les librairies et les agences dépositaires du monde entier. Informez-vous auprès de votre libraire ou adressez-vous à : Nations Unies, Section des ventes, New York ou Genève.

КАК ПОЛУЧИТЬ ИЗДАНИЯ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ

Издания Организации Объединенных Наций можно купить в книжных магазинах и агентствах во всех районах мира. Наводите справки об изданиях в вашем книжном магазине или пишите по адресу: Организация Объединенных Наций, Секция по продаже изданий, Нью-Йорк или Женева.

COMO CONSEGUIR PUBLICACIONES DE LAS NACIONES UNIDAS

Las publicaciones de las Naciones Unidas están en venta en librerías y casas distribuidoras en todas partes del mundo. Consulte a su librero o diríjase a: Naciones Unidas, Sección de Ventas, Nueva York o Ginebra.
