

**THE ST PETERSBURG GUIDELINES ON ENVIRONMENTAL FUNDS IN THE TRANSITION TO A
MARKET ECONOMY**

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Paris 1995

023661

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FOREWORD

The process of economic restructuring in Central and Eastern Europe is creating new opportunities for environmental protection. Policy reform, strengthening of environmental institutions and investments in areas such as pollution reduction and prevention are needed to exploit these opportunities. However, in most countries of the region, governments and enterprises are highly constrained in terms of their abilities to finance environmental projects, while bilateral donors and international financial institutions will play, at best, a catalytic role in gathering the necessary funding.

In a number of central and eastern European countries, earmarked Environmental Funds have emerged as important mechanisms for financing these projects, attracting growing interest throughout the region. Typically, these Funds are funded through environmental taxes and charges. These revenues are used to finance public or private sector investments in pollution control, usually on favourable terms. However, the operation of these Funds raise important questions about the economic efficiency of earmarking, the cost-effectiveness of spending programmes, and the sustainability and appropriateness of their revenue sources.

The OECD's Centre for Co-operation with the Economies in Transition launched an examination of the role of Environmental Funds in the context of an analysis carried out by the OECD Environment Directorate and the Directorate for Financial, Fiscal and Enterprise Affairs. These Guidelines, which are one outcome of this project, identify the criteria which Funds should apply in order to be environmentally effective and financially efficient. Development of the Guidelines benefited substantially from discussions with experts and officials from Central and Eastern Europe, in the context of a workshop in Budapest (June 1994) and a conference in St. Petersburg (October 1994).

The St. Petersburg Conference was hosted by the Russian Ministry of Environmental Protection and Natural Resources, with the Federal Ecological Fund and the Institute of Natural Resources Management. It was organised in collaboration with the Harvard Institute for International Development (Cambridge, Massachusetts). These Guidelines were prepared by Ms. Zsuzsa Lehoczki (Senior Lecturer, Budapest University of Economic Sciences, and environmental economics advisor to the Ministry of Finance of Hungary) and M. Grzegorz Peszko (Assistant Professor at the Faculty of Environmental and Industrial Policy, Academy of Economics, Cracow).

The "St. Petersburg" Guidelines were discussed and endorsed by the Task Force for the Implementation of the Environmental Action Programme, a body whose members include OECD countries, countries in transition, and international organisations. The Task Force promotes co-operation among its members to improve policy-making in the environment protection area and to strengthen related institutions in Central and Eastern Europe. Its work is guided by the Environmental

Action Programme for Central and Eastern Europe endorsed by ministers at the 1993 Lucerne "Environment for Europe" Conference. OECD acts as Secretariat to the Task Force. The St. Petersburg Guidelines will be presented to ministers at the forthcoming "Environment for Europe" Ministerial Conference in Sofia, Bulgaria (October 1995). Based on these Guidelines, discussions are currently underway to develop a co-ordinated programme of technical co-operation for Environmental Funds, to be launched after the Sofia Conference.

The Guidelines are published on the responsibility of the Secretary-General of the OECD.

Salvatore Zecchini
OECD Assistant Secretary-General
Director of the CCET

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EXECUTIVE SUMMARY

Comprehensive Environmental Funds have become an increasingly important means of financing environmental expenditures in many central and eastern European countries including the Newly Independent States of the former Soviet Union. In Poland and the Czech Republic for example, Funds have become quite substantial, with annual budgets over US\$ 100 million. Environmental Funds generally derive revenues from environmental charges and taxes. These are set aside ("earmarked") for environmental purposes rather than transferred to the general government budget. Funds use these revenues to provide financial assistance to the private or public sector, usually on favourable terms, for investments and other projects to achieve environmental objectives. In contrast to specific funds, which are directed at a single, well-defined issue such as water quality management, comprehensive Environmental Funds provide financing for a broad range of environmental needs. While this type of institution generally does not exist in countries with developed market economies, comprehensive funds can be an attractive means of financing environmental efforts where market conditions are still being established. This paper analyses the rationale for Environmental Funds from an environmental and fiscal policy perspective, and identifies key issues associated with their design and operation.

During the transition to a market economy, a series of market, policy and institutional failures impede the emergence or effective use of financing mechanisms characteristic of market economies. These problems can include weak or ineffective enforcement of environmental policy, severe financial constraints on enterprises and households, uncertainties in fiscal systems, poorly developed banking systems and capital markets, and inadequate information concerning costs of environmental damage. Environmental Funds can provide an interim means of circumventing these problems. By supplying financial assistance, Funds can leverage resources from other sources, and can thus speed the pace of environmental improvements. Environmental Funds can also help strengthen domestic capacities for project preparation and policy implementation. In conjunction with other policy instruments, Funds can facilitate the development and implementation of priority environmental activities, as set out, for example, in National Environmental Action Programmes.

Without careful design and management, however, the potential advantages of Funds could become defects. From a *fiscal policy perspective*, "earmarking" has potential dangers: allocating and disbursing revenues outside the government budget may create long-term economic inefficiencies. Well-designed procedures and incentives are needed to ensure that Environmental Funds target priority environmental problems and that Fund revenues are spent effectively. This requires effective project appraisal techniques as well as financial and accounting procedures. Funds should ensure transparency and they should be accountable to government, Parliament, and the public for their actions -- these elements are important in ensuring continued support from finance ministries.

Two key environmental policy considerations should guide the design and operation of Environmental Funds. First, Environmental Funds should support the implementation of a *coherent environmental policy*. Funds are one of many instruments of environmental policy; their effectiveness will be limited without a clear policy framework and the capacity to implement it. Funds can reinforce other environmental policy instruments, such as compliance schedules for highly polluting plants, environmental auditing programmes, voluntary agreements, etc. They can also be used to strengthen the integration of environmental policy with economic and sectoral policies. Second, Funds should not undermine the introduction and implementation of the *Polluter Pays Principle*. In particular, they

should not hinder the mobilisation of private resources for environment; rather, Funds should leverage increased private sector resources and capital market financing for environmental investments.

Environmental Funds should have *clear spending priorities and guidelines* based on overall environmental policy goals and priorities. *The Environmental Action Programme for Central and Eastern Europe* suggests priorities such as supporting environmental policy reform, including the improvement of enforcement and environmental information systems, accelerating the process of environmental improvements through high priority investments in the enterprise sector and financing the provision of priority environmental services, including nature conservation. For investment projects, Funds need to have *well-designed programme and project cycles* to ensure cost-effective use of resources. Environmental Funds can use a variety of disbursement mechanisms, including grants, loans, loan guarantees, and interest rate subsidies; the choice will depend upon factors including macroeconomic conditions, the progress of transition, Fund administrative capacities and expertise, and co-financing arrangements with commercial banks.

Environmental Funds are financed mainly through pollution charges. Over time, there may be a trade-off between the revenue-raising role of these charges and their potential incentive function. In designing and evaluating Fund revenue mechanisms, environmental authorities should try to ensure environmental effectiveness, economic and administrative efficiency, equity and acceptability. In particular, Fund revenue systems should be relatively simple in structure and easy to monitor and enforce. Funds need to develop systems that provide a stable base of revenues, and product charges deserve more attention from this perspective. Where high rates of inflation erode the real value of Fund resources, indexing schemes will be needed.

Overall, the comprehensive Environmental Funds in central and eastern European countries should be seen as *transitional instruments*. As the transition process advances, private sources, including enterprise resources and capital markets, will play a greater role in meeting environmental finance needs, in particular for pollution abatement investments. In some countries, Funds may evolve into more specific financing mechanisms like those which exist in some OECD countries for water resources management. As government budgets stabilise, they should be better able to ensure adequate support for common resources such as nature conservation. Naturally, the length and form of the transition process will vary significantly from country to country.

In view of their transitional nature, Environmental Funds should aim to keep their administrative structures light, involving where possible outside expertise and institutions. In addition, Funds need to develop effective monitoring and evaluation procedures to learn from their experience. To this end, environmental authorities should periodically review the role of Funds to ensure that they continue to be effective instruments of environmental policy and responsive to the evolving needs within the transition process.

CHAPTER 1 THE ROLE OF ENVIRONMENTAL FUNDS: OPPORTUNITIES AND CONSTRAINTS

Environmental Funds are institutions designed to channel earmarked revenues for environmental protection purposes. Revenues generally derive from environmental charges and taxes. They are set aside ("earmarked") for environmental purposes rather than transferred to the general government budget. Funds use these revenues to provide financial assistance, usually on favourable terms, for investments and other projects to achieve environmental objectives. Environmental Funds can be found in both highly developed and less developed market economies, though they vary in scope and nature (Lovei, 1994a). Only *specific Funds* are found in developed market economies; in Central and Eastern Europe, on the other hand, nearly all the Funds are *comprehensive Funds*. Annex 1 to this report describes some of the different types of Funds, both in central and eastern European countries and elsewhere.

The restructuring of public finance is one of the most pressing public policy issues in the Economies in Transition. Traditional sources of revenue have collapsed while governments are finding it difficult to raise new taxes. The continued role of earmarked revenues for environmental and other purposes therefore has been questioned, and the need for "fiscal consolidation" emphasized. At the same time, tight government budgets, along with uncertainties about the principles and procedures of the budgetary process, have supported arguments for the use of extra-budgetary financing mechanisms. In some of the Newly Independent States of the former Soviet Union (NIS), for example, the weakness of the public finance system led to the consolidation of Environmental Funds into the State Budget. This has, in effect, substantially reduced the volume of revenues for environmental expenditures, and the actual transfer of these revenues has also become irregular, encouraging environmental officials to argue strenuously for extra-budgetary financing.

There is growing acceptance that, in a period when resources are very scarce, suitably-designed Environmental Funds can be effective mechanisms for channelling earmarked revenues to help tackle the many serious environmental problems in central and eastern European countries. In some countries there are few, if any alternatives. Legislation and administrative procedures are thus being introduced in the region to develop new Environmental Funds and to revise existing fund structures. At the same time, it must be stressed that by the standards of market economies, the continued use of subsidies and reliance on earmarked Funds is a "second-best" solution as an environmental policy instrument. Moreover, in a context where financial disciplines are just being established, the design and operation of Environmental Funds poses many potential problems, which must be addressed if they are to continue as acceptable financing mechanisms.

The aim of this paper is to analyse the rationale for Environmental Funds in Economies in Transition and discuss the key issues associated with their design and operation. It focuses on common policy issues rather than addressing the more complex questions associated with the institutional design and operation of Funds. These questions need to be further analysed in the specific national context. Donor assistance and sharing of experience among Fund managers also could be helpful in this regard.

The paper is organised into three sections. This first section describes the opportunities and constraints associated with the Environmental Funds as financing mechanisms for environmental protection. The second section considers the principles and procedures that should govern the allocation of Fund resources. It includes a brief description of the programme and project cycle and a discussion

of different disbursement mechanisms such as grants, soft loans, and interest support. The third section analyses the most common revenue sources used or considered by Funds.

1.1 Environmental Funds in Economies in Transition

The Funds in central and eastern European countries, including the Newly Independent States of the former Soviet Union (NIS), are mainly comprehensive, national Environmental Funds. These Funds use their resources mainly to provide financing and assistance (subsidy) to private or state-owned enterprises and to government bodies for environmental projects. Such Funds are comprehensive in the sense that they provide money for a wide range of environmental issues; in contrast, specific funds focus on a single need, such as water quality management. This paper primarily addresses the issues concerning these *comprehensive national Funds*, although the analysis is also relevant for comprehensive regional funds that in some countries form part of a national Fund system.

Most of the national Funds have a two-part structure: a management unit and a decision-making body. In many countries, the Fund management units are located within the national Environment Ministry, though in Poland the Fund is a separate agency. In most countries a supervisory board, often chaired by the Minister of Environment, acts as the decision-making body for the Fund. (Some of the main aspects of Fund operations are described in Annex 2.)

Table 1 presents the main characteristics of selected Funds in central and eastern European countries. The Funds in these countries have different structures and vary in age and experience. Their annual budgets in 1993 ranged from approximately \$2.3 million for the Bulgarian National Environmental Fund to nearly \$200 million for the Polish National Environmental Fund. The Funds in Bulgaria, the Czech Republic, Hungary, and the Slovak Republic are organised on a national basis (although Bulgaria also has municipal funds). Poland has a National Fund, regional funds, and municipal funds. Similarly, in the Russian Federation, Funds exist on three levels, with a national fund, 80 regional and republican funds, and district and city funds.

The legislation for Funds in these countries establishes a general and comprehensive set of objectives. The stated objectives vary, but can include:

- promoting activities and investments to protect and improve air quality and water quality, to minimise waste generation, or to preserve soil;
- encouraging the development of an environmentally more benign economic structure;
- sponsoring research and development activities and projects;
- promoting activities to protect natural values and natural habitats and preserve biodiversity;
- encouraging environmental education and training; and
- improving environmental monitoring systems.

In practice, the main role of Funds in these countries has been to provide financial assistance for environmental protection investments and environment-related infrastructure development. In some countries, Funds also play an important role in financing state administrative tasks such as monitoring and enforcement, as well as some state environmental research and development activities.

1.2 The rationale for Environmental Funds in Economies in Transition

Under central planning, the dominance of state ownership in the economy, the limited authority of enterprises, soft budget constraints and distorted prices prevented the operation of an efficient environmental financing system. Although emission charges, non-compliance fees and fines and other environmental levies were introduced in most countries, they served merely as revenue raising mechanisms. Budget systems centralised and redistributed enterprise revenues, leaving little room for independent decision making at the micro level.

Table 1. **Selected Environmental Funds in Central and Eastern Europe:
1993 Expenditures**

Country	Fund Expenditures (US\$ million)	Main Spending Areas (by per cent of total spending)	Main Revenue Sources (per cent of total revenue)
<i>Bulgaria</i>	2.3	environmental monitoring (40%) enterprise sector (32%) municipalities (19%)	pollution fines (58%) import tax, used cars (33%)
<i>Czech Republic</i>	107.0	water pollution control (58%) air pollution control (33%)	water pollution charges (41%) air pollution charges (30%) solid waste charges (13%) land charges (12%)
<i>Hungary</i>	27.7	air pollution control (70%) solid waste management (15%) water pollution control (11%)	fuel tax (44%) traffic transit fee (20%) PHARE support (19%) pollution fines (17%)
<i>Poland (National Fund)</i>	198.5	air pollution control (47%) water pollution control (35%) other (18%)	pollution charges (including charges on air emissions, wastewater discharges, water use and solid waste)
<i>Slovak Republic</i>	35.0	water pollution control (54%) air pollution control (36%) solid waste management (7%)	state budget (37%) wastewater charges (33%) air emissions charges (25%)

Source: Regional Environmental Center, 1994; Slovak Ministry of Environment, 1994.

The economic and political restructuring underway in Central and Eastern Europe aims to change the role of the state, re-establish the private sector in the economy, decentralise political power and in this process, develop a new division of tasks and responsibilities between the government, the private sector and households. Part of this movement will involve the creation of a new system of financing for environmental expenditures. Financing for environmental investments increasingly should be based on private sources, and follow the guidelines of the Polluter Pays Principle (see Box 1).

Box 1. The Polluter Pays Principle

The Polluter Pays Principle (PPP) endorsed by the OECD Council in 1972 and 1974, states that the polluter should bear the costs of pollution prevention and control measures (OECD, 1992). In practice, this has meant that polluters in OECD countries are financially responsible for complying with the environmental requirements set by relevant authorities. Expenditures generally are met out of profits, raising equity or commercial loans. Since the PPP excludes financial assistance, it is also referred to as the no-subsidy principle. Application of the Principle has encouraged the development of full-cost recovery schemes for environmental services and the development of market financing mechanisms (e.g. revolving Funds) in the traditional public infrastructure sector.

In its 1974 update of the PPP, the OECD noted exceptions under which subsidies could be given to polluters. Specifically, three conditions must be met:

- The subsidy does not introduce significant distortions in international trade and investment;
- Without the subsidy, affected industries would suffer severe difficulties;
- The subsidy is limited to a well-defined transition period adapted to the specific socio-economic problems associated with the implementation of a country's environmental policy.

The PPP can be extended to the so-called "resource pricing principle", which argues that all natural resources, including the environment's natural absorption capacity, should be properly priced to reflect the social costs of using them. This is also referred to as the "user pays principle", although neither of these two principles have the international standing of the PPP.

Full application of the PPP and its related principles suggests that polluters should pay the full cost of their own activities and of public activities to reduce pollution to the environment, while government expenditures should be restricted to public goods such as protecting natural areas and biodiversity, as well as environmental monitoring, research and education.

In the early stage of transition from centrally planned to market economies, however, there are several factors that constrain the application of the Polluter Pays Principle and the evolution of an effective environmental financing system (Lovei, 1994b). These include:

- weaknesses in the *environmental policy framework*, including poor enforcement of environmental requirements;
- severe *financial constraints* at industrial enterprises, which delay the replacement of out-dated, polluting technology;
- changing *fiscal systems*, resulting in uncertain revenue raising capabilities at various government levels, and impeding, for example, the development of municipal environmental services based on user-charges;

- the slow pace of *privatisation*, which hinders positive changes in management practices;
- insufficiencies of the *banking system*, which create credit shortage and rationing;
- underdeveloped *capital markets* that constrain the use of advanced financing instruments;
- frequent neglect of environmental issues in the *political decision making* and budgeting process;
- inadequate *information* on the extent and social costs of environmental damage, and poor understanding of cost-effective solutions, which make decision making suboptimal; and
- weak non-governmental organisation (NGO) *movements* and citizen groups, which do not effectively influence the political decision making process.

Environmental Funds provide a means for overcoming the institutional and market failures encountered in the transition period. By reducing the financial burden of environmental investments on enterprises and households, Funds can accelerate the pace of environmental improvement. Generally, Funds will contribute less than the full costs of an investment so they can be a valuable mechanism for leveraging resources from domestic and foreign sources. Funds can also perform important institutional strengthening functions: they can help develop the expertise which is frequently lacking in the region for the effective preparation, evaluation and financing of environmental projects. By working with commercial banks, they can help transfer these skills to the private sector.

As an environmental policy tool, the Funds can help channel much needed resources to environmental problems which impose real and significant costs on society, and ensure that these resources are used in a cost-effective manner. The subsidy element provided by Funds can be used as an incentive to reinforce the effectiveness of other policy tools such as regulations and economic instruments. By providing resources for environmental expenditures, particularly in the industry or energy sectors, Funds can help to breakdown the barriers to cooperation that frequently exist between environmental and sectoral ministries in Economies in Transition.

Similarly, Funds can play a pivotal role in supporting the development and implementation of National Environmental Action Programmes (NEAPs), as recommended by Environmental Ministers at the Lucerne Conference of April 1993. The goal of NEAPs is to engage governments as a whole in addressing the most urgent environmental problems over a three to five year period. NEAPs should adapt the recommendations of the *Environmental Action Programme for Central and Eastern Europe* (endorsed at the Lucerne Conference) to specific national contexts. Funds could provide both analytical skills and financial resources needed in the development and implementation of NEAPs. Box 2 outlines specific areas where Funds can support the recommendations of the *Environmental Action Programme*.

Environmental Funds financed by environmental charges, taxes and fines, may also be justified under extended definitions of the Polluter Pays Principle. By making polluters responsible as a group, earmarking of environmental taxes and charges overcomes the difficulty of linking individual polluters to damage and provides an alternative to making the general taxpayer foot the bill for clean-up. Thus, Environmental Funds can function as mechanisms for recycling funds from polluters in general to address the environmental problems most in need of remedial action.

A few OECD countries use earmarked revenues to provide additional finance for environmental investments. However, most of these funds are used by agencies specifically managing the resources, such as water basin agencies using water and wastewater treatment charges to finance investments to protect the water basin: through a system of user charges, consumers purchase environmental services (for example, clean water). In such cases, earmarking can provide the political acceptability for the introduction and maintenance of environmental taxes and charges.

Box 2. Environmental Funds and the Environmental Action Programme

The *Environmental Action Programme for Central and Eastern Europe* (EAP) recommends that Economies in Transition should set clear priorities for short-term environmental actions, based on an assessment of the most serious problems in terms of their impact on human health and the natural environment. Specific national priorities can be set through the development of a National Environmental Action Programme. The EAP argues that the most cost-effective and lasting solutions will require concurrent work in three areas: policy reform, institutional strengthening and investments. In this context, Environmental Funds can be most effective if they focus their spending in areas such as the following (Lovei, 1994 *b*):

1. Supporting the improvement of environmental policy

- *Strengthening enforcement.* In the long run, environmental improvements should increasingly be financed from private sources, in response to taxes and charges, regulations, and enforcement. To make this possible, proper enforcement of environmental policies and requirements will be essential, and will require the development of effective, independent environmental inspectorates.

Both these elements are essential for a well-functioning environmental policy. Where adequate resources are not available from the government budget, Environmental Funds could assist with financing.

2. Accelerating the process of environmental improvement in industrial enterprises

- *Co-financing environmental audits.* Modifications in existing production processes and management practices at industrial plants can provide initial reductions in pollution loads that are far more cost-effective than pollution control investments. Environmental Funds can accelerate their adoption by promoting environmental audits.
- *Supporting priority investments in the enterprise sector.* While these depend on country conditions, the EAP identifies three key region-wide problems: reducing particulate emissions from ferrous and non-ferrous metal plants; reducing toxic air pollution that affects large populations; and pre-treating wastewaters from industrial plants that discharge high levels of heavy metals and toxic chemicals.

3. Financing the provision of high priority environmental programmes and services

- *Conserving natural resources and biodiversity.* In particular, there are priority areas where financing is needed to prevent irreversible damages and large future costs.
- *Priority environmental programmes.* Environmental Funds can help finance initiatives that tackle specific national priorities. For example, Funds can support actions to protect groundwater from non-point source pollution or can mobilise private investments to convert from coal to natural gas heating in highly polluted cities.
- *Financing environmental infrastructure.* In this area, Environmental Funds should focus on priority projects. Where possible, cost recovery through user charges and financing from other sources should be tapped.

1.3 Challenges in the design of Environmental Funds

Fiscal policy, financial management and transparency

The potential advantages of Environmental Funds may easily become disadvantages. Unless effectively managed, Funds are a potential source of inefficiency in fiscal and environmental decision making. When designing and operating earmarked Environmental Funds, great care must be taken not to introduce more serious distortions than those the Funds aim to correct.

Earmarking in particular is a serious concern. Since earmarking sets aside economic resources outside the general process of financial and economic policy (and the choice between different government expenditures), it reduces the economic resources available for other necessary expenditures. This is a danger, in particular over the long term, as resources may be channelled to problems that are no longer high priorities. One element of this efficiency loss is that the level of public services financed by earmarked funds adjusts to changes in revenue rather than to changes in demand. These services may be under-supplied, for example if inflation erodes the value of revenues, or oversupplied if revenues rise without consideration of their need (as some argue has happened in some OECD countries with earmarked revenues for building wastewater treatment facilities). Overall, the use of earmarked revenues in any country can create vested interests that put political pressure on continued revenue flows, even when no longer necessary.

Arguments concerning the imperfection of government budgetary mechanisms should also not be exaggerated. In the end, the political process has to make crucial resource choices between policies for safeguarding health, solving unemployment, providing resources for the environment, and maintaining macroeconomic stability. In addition, while earmarked revenues may safeguard certain resources for the environment, in particular amid political and economic uncertainty, their existence might in the long run handicap the provision of adequate support to environment ministries from the general budget. Further, Environmental Funds are not effective solutions to capital market imperfections: as transition economies move to market conditions, long-term solutions depend on the emergence of an effective banking sector and related developments.

The advantage that earmarked funds can operate more flexibly than spending through the government budget may easily become a danger, in particular in Economies in Transition. Since the rules of public finance are not fully developed -- and public entities in the region have inherited a tradition lacking in financial discipline -- wasteful management and overly risky expenditure choices may result. Further, there may not be adequate legal requirements to ensure public control over Fund actions, creating the danger that earmarked Funds could follow the priorities of special interests rather than national priorities, and control over spending could be captured by particular groups.

These considerations suggest that Environmental Funds should follow *clear and explicit operating procedures* (see Box 3). Fund procedures for choosing projects and providing finance should be transparent: this work should be based on clear environmental and economic criteria that are made public, and should be done free from political influence. Funds should be accountable for their operations to the government, Parliament, and ultimately the public. This requires that Funds meet government requirements for financial control and accounting, including reporting to the appropriate budget offices. Funds should also provide the public with adequate information on their work and annual results. In the end, the use of Environmental Funds will have to be justified in terms of their contribution to achieving environmental policy goals and the efficiency with which they allocate their resources.

Environmental Funds are one instrument for attaining environmental policy objectives. Funds should support other environmental policy instruments and, overall, the *implementation of a coherent environmental policy*. The *Environmental Action Programme for Central and Eastern Europe* (EAP) stresses that environmental improvements in the region depend on coordinated efforts in three areas: policy reform; institutional strengthening; and financing. Financing can not act as a substitute for the other two elements. Indeed, Environmental Funds will be limited in their effectiveness unless countries in transition introduce appropriate policy reforms and develop the institutional capacity to implement them: these elements are necessary for the cost-effective allocation of resources for production and pollution reduction. For example, Funds will not be able to compensate for low energy and raw materials prices that encourage wasteful use of resources and high pollution levels. On the other hand, governments need to set clear environmental policy objectives and priorities that can serve as a basis for Fund spending priorities.

Box 3. Public finance procedures

In the transition to a market economy, the procedures governing public finance and spending must undergo fundamental changes, and institutions such as Environmental Funds have to adopt new ways of working.

In democratic, market economies, clear rules and procedures are needed to ensure that public decision-makers spend public money efficiently, for the benefit of the public at large, and in ways that reflect the general interest (at the least, as expressed in legislation passed by Parliament and as specified in government policy objectives). Transparency and accountability are the main disciplinary forces for the public spending process. Government officials should have clear procedures, guidelines, and priorities to follow in making spending decisions. Government bodies should also release to the public information on their expenditures and results and involve the public in major decisions at regular, pre-determined points.

Environmental Funds should follow rules for *financial control and accounting*. Basic procedures for financial control should include the preparation of a yearly budget, usually in conjunction with the government budget, as well as a yearly report detailing spending and results. Financial management and financial transactions should be overseen by government bodies responsible for budget and expenditure. In addition, it may also be useful to have a private sector accounting firm perform regular, independent audits of Fund operations. The essential information in the budget and the Fund's yearly report should be made available to the public.

One important principle for fiscal control is that Fund operations and spending decisions should include a careful evaluation of risk and return, using methodologies such as cost-benefit analysis. This is because the consequences of public expenditure decisions are borne by the state budget, and ultimately, the taxpayers. (In contrast, private sector risks are assessed directly or indirectly by the owners of resources, and the consequences, generally determined by market forces, are ultimately borne by the company and its shareholders.) Funds spend public money, and should minimise their financial risks.

The use of Environmental Funds should not undermine *the introduction and implementation of the Polluter Pays Principle* in Economies in Transition. There is a danger that the long-term use of subsidies could undermine the framework of environmental policy, in particular by encouraging a continuing dependence on state financing for environmental investments. Thus, Environmental Funds should try to avoid actions that hinder the development of market solutions: carelessly designed grant schemes, for example, for environmental investments could reduce interest in long-term borrowing and the development of a bond market. Rather, Environmental Funds should focus on addressing the specific market and institutional failures that hinder environmental investment. They should act to catalyse and support the development of private financing for the environment, for example by working with commercial banks in providing finance to the enterprise sector. Overall, Funds need to strike a balance between providing subsidies for environmental projects and leveraging financing from other sources. When Funds cover a high share of project costs, they create a strong incentive for enterprises, municipal governments, and other recipients to undertake environmental actions; but by lowering the subsidy, Funds can leverage other resources, including those of the recipient and of commercial banks, and spread their money over a greater number of projects. This can also give recipients a greater incentive to ensure successful project implementation.

Environmental Funds should be used to *reinforce other environmental policy instruments*. For example, programmes to promote "good housekeeping" -- low-cost pollution prevention actions in industry through process and management improvements -- can be reinforced by making such actions a prerequisite of support to industrial enterprises (see Box 2). In addition, assistance to enterprises should be part of an overall strategy to help them achieve compliance with environmental regulations. It should be noted, however, that there is a trade-off between the use of environmental taxes and charges for revenue-raising, and their potential role as incentive mechanisms to reduce pollution levels. This issue, discussed in the third part of the paper, helps to illustrate the linkage between the revenue and disbursement sides of Environmental Funds and the need to consider such questions in the framework of a coherent environmental policy.

Over the long term, effective progress towards environmental goals will depend on integrating environmental policy objectives into economic, industry, transport, and other sectoral policies. Environment ministries should ensure that the use of earmarked funding does not contribute to marginalising environment ministries in government structures. Indeed, Environmental Funds can play a role in *supporting initial efforts for policy integration*. Environment ministries can use resources from Environmental Funds to work on common objectives agreed with other ministries. Environment ministries in OECD countries have, in fact, found that directing resources to achieve common goals can play an important role in facilitating policy integration.

In their operations, Environmental Funds should aim to *support viable, cost-effective projects*. One potential problem is that polluters will exert political pressure for revenues to be distributed closely in line with payments (e.g. by industry sector) rather than according to environmental priorities. This practice could make it difficult to focus on the most cost-effective projects and could result in spending priorities very different from the goals suggested by national environmental policy. A separate problem to be faced is that projects investing in pollution control equipment, such as wastewater treatment facilities or air pollution control equipment, are easier to identify as "environmental" projects than cleaner production technologies, where the "environmental" component is part of a broader efficiency improvement.

Institutional design

The foregoing analysis suggests that the comprehensive Environmental Funds used in central and eastern European countries must be seen as *transitional instruments*. As such, they must adapt to evolving economic situations. Moreover, each country's environmental priorities will change over the transition period. Naturally, the evolution of economic and environmental conditions -- as well as the length of the transition -- will differ from country to country. Nonetheless, if Environmental Funds

follow the recommendation to focus on overcoming market and institutional failures, they will need to adapt their objectives and procedures to changing conditions over the course of the transition.

One implication is that Funds will have to strike a balance between building up their internal expertise and minimising their administrative costs. Funds need to develop and strengthen specific skills to manage the project cycle, including project appraisal. (The project cycle is discussed in the following section.) Nonetheless, Funds should aim to keep their administrative costs low, both to improve their own cost-effectiveness, to be more adaptable to changing market and institutional conditions, and to resist the temptation of "empire building". One solution is to use and promote outside expertise and institutions where possible, including commercial banks. This strategy can also help develop private sector capacities for financing environmental investments.

Environmental Funds need *effective monitoring and evaluation procedures* to learn from their own experience and to improve their operations. The Funds themselves should monitor and regularly evaluate their day-to-day operations. In addition, periodic evaluations should be made by outside bodies, as these can provide useful lessons for the Fund's role, for the use of Fund revenues, and for environmental policy priorities. Indeed, the role of Environmental Funds within environmental policy should be reviewed regularly with respect to the progress of transition and the achievement of priority environmental goals.

Eventually, as the transition process ends, the need for comprehensive Environmental Funds will diminish. Private sources, including enterprise resources and capital markets, will play a much greater role in meeting environmental financing needs. In some countries, specific funds and special agencies may take a financing role in areas such as water pollution problems; indeed, some comprehensive funds may evolve into specific ones. A stable government budget should be better able to ensure adequate resources for common resources such as nature conservation. The skills and expertise developed by comprehensive Environmental Funds could find a place in the private sector, in specific funds, and in government. In this situation, as the need for earmarked funds declined, emissions taxes and charges used to provide Fund revenues could also adapt, and their current revenue raising role could be replaced by an incentive role, as a steadily growing share of their income was directed into the state budget. The pace and direction of this evolutionary process will likely vary significantly from country to country, depending on factors including the speed and difficulty of economic reform, the role of the state, and the persistence of environmental problems.

CHAPTER 2 ALLOCATING ENVIRONMENTAL FUND RESOURCES

This section focuses on two issues. First, it provides an overview and recommendations for Fund programme and project cycles. The description of the project cycle in particular details good practices for the identification, preparation and appraisal of large environmental investment projects, as these elements were often poorly carried out under central planning. The procedures for smaller projects and for non-investment projects may not need to be as exhaustive as those described -- although these too should follow a clearly defined project cycle. Second, the section discusses key issues for resource disbursement. Naturally, the specific application of different methods for disbursement will vary from country to country, depending on economic conditions, environmental priorities, project characteristics, and other factors.

2.1 The programme and project cycles

Environmental Funds in Economies in Transition need to overcome a legacy of poor practices in investment programming and project management. Some of these problems are identified in the *Environmental Action Programme for Central and Eastern Europe*.

- i. Under the soft budget constraint, project sponsors had easy access to public finances and thus little incentive to seek cost-effective solutions. In contrast, finance is scarce in the transition period, and will likely remain difficult to obtain afterwards.
- ii. The project identification phase was dominated by political priorities and concerns. Alternatives and complementary approaches to proposed projects were rarely examined. For environmental projects in particular, alternatives need to be explored and evaluated throughout the project cycle. In many cases, there may be non-investment actions, including low-cost pollution reduction efforts, that should be considered before preparing and funding a major project.
- iii. The preparation and design phase under central planning was short. Project "economic" analysis tended to be confined to a simple financial statement of construction materials and equipment. Few preparation studies were undertaken, and these often amounted to less than 5 per cent of project costs. As a result, problems often occurred in construction or early operation. In contrast, the "western" approach places a strong emphasis on the front-end of the project cycle. Preparation takes a relatively long time, involves several incremental steps, and tries to identify project risks before the project begins. As much as 20 per cent or more of total project costs are spent on project identification, preparation, design and appraisal; strong economic and financial analysis is particularly important for the success of large projects.
- iv. Implementation under central planning was slow and often interrupted because incomplete projects were prematurely put into operation. Severe, unexpected scarcities of equipment and materials often occurred.
- v. Deficiencies in operation and maintenance resulted in proposals for new investments as the only solution to accumulated problems.

Developing adequate practices for investment programming and project management is essential for the efficient operation of Environmental Funds. Funds need to ensure that their scarce resources are targeted to priority problems, and that the projects they fund provide sound economical and environmental solutions to these problems.

2.2 The financing strategy

Environmental Funds need to have: an overall financing strategy; regular, usually yearly, implementation programmes (or budgets); an adequate project cycle for all projects; and monitoring and evaluation of programme implementation against its stated objectives (see Figure 1).

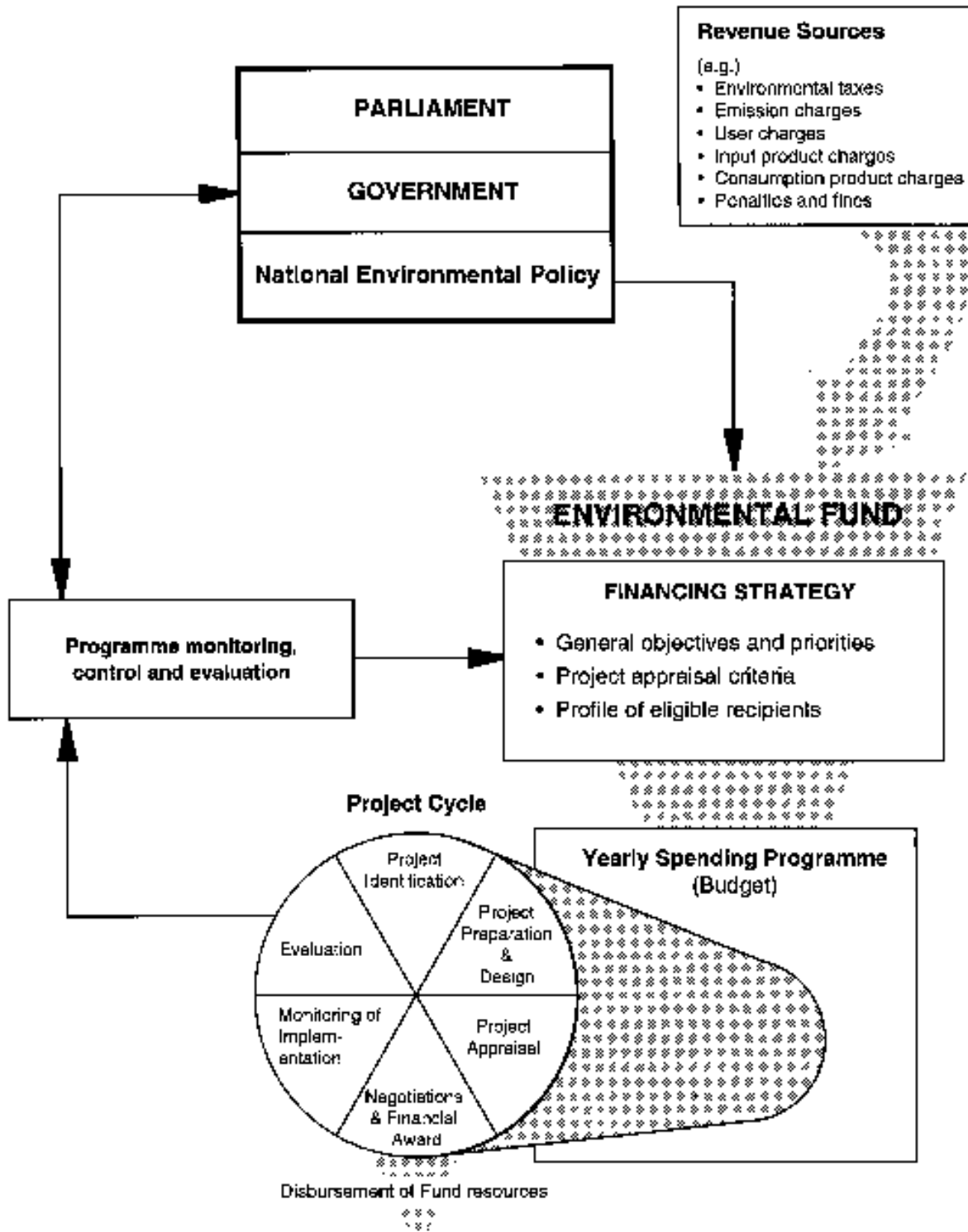
The starting point should be the priorities of national environmental policy. These need to be specific enough to provide clear guidance for the Fund's financing strategy. The development of National Environmental Action Programmes can provide specific guidance and priorities. Just as in all public spending programmes, the Fund's financing strategy should be determined by government and approved by Parliament. If possible, the overall themes of Fund strategy should be indicated in the Fund's charter and, if necessary, in more detailed multi-year strategies.

One key quality of a Fund's financing strategy is that it should provide clear guidance for developing the Fund's spending programmes and for project implementation choices. For example, a long list of important issues and problems, without any notion of relative priorities and relative weights of criteria, provides little guidance on how to allocate limited Fund resources among a great variety of possible projects. If a Fund attempts to cover all items from the list, money will be spread too thinly. An alternative danger is that all resources may be absorbed by a single problem, such as wastewater treatment. Both choices are likely to be unsatisfactory from the point of view of the effectiveness of environmental policy goals, even though they follow the strategy. Thus, *the financing strategy should describe Fund objectives and set priorities among different environmental issues* (for example, reducing local air pollution, tackling transboundary air pollution, improving water protection and wastewater treatment, etc.). Once the areas eligible for funding have been identified, a priority list of problems should be set for each area. This should draw heavily upon the national environmental strategy or action programme and should identify the most urgent environmental threats requiring solution. This process will require serious consideration, debate, and an economic and environmental analysis of different environmental problems.

While the Fund strategy should identify priority problems, it should not specify specific solutions; that is the task of the project cycle. In other words, the strategy should not be a "shopping list" of projects to receive financing. It should, however, specify appraisal criteria for projects to meet, including requirements such as environmental effectiveness, cost-effectiveness and, possibly, technology standards. These criteria should give Fund management clear guidance for choosing and funding projects. They should be made public, and in particular made available to potential recipients.

One concern the financing strategy should address is how the Fund would handle projects in sectors and firms that may not be viable over the long term. Economies in Transition are in the midst of a profound economic restructuring, and a number of enterprises will likely close. In general, the limited resources of Environmental Funds should be concentrated on priority recipients that are likely to survive over the long term, and that would continue to pollute unless they receive assistance. While there may be a policy decision to assist certain sectors or enterprises facing economic problems, this should not be the role of Environmental Funds.

Figure 1. Outline of a programme cycle



Another important principle is that, in general, Fund money should only provide the capital cost of projects, not the operational costs. Such long term commitments can be difficult to maintain; can diminish the incentive for recipients to economise on operation and maintenance costs; and can provide a harmful incentive for Funds to seek excessively large and capital-intensive solutions that reduce future operational costs. Still, financing decisions must consider projected operational costs closely, to ensure that projects will be viable once in place.

The Fund's *yearly spending programme*, or budget, should be a key tool for translating overall Fund strategy into specific priorities. A key question is which authorities should prepare, and which should approve this spending programme. Although Fund management may prepare the budget, it should be approved by the Fund's decision-making body, often its board. Even in preparation, close consultation with environmental as well as finance authorities will probably be useful. In addition, this budget should if possible be approved by Parliament, as is most national spending.

2.3 The project cycle and project appraisal

The procedures for identifying, preparing, and deciding on projects can be described as the *project cycle*. The procedures of the project cycle and the criteria used for project appraisal should be transparent and should not change erratically. Written operational procedures for the project cycle are usually necessary; these should give a detailed description of each step in the cycle. The procedures should be available to all potential recipients and to the public. Environmental Funds may want to turn to domestic consultants and foreign assistance programmes for advice in the development of project cycle procedures.

The sequence of a project cycle is:

- (i) identification;
- (ii) preparation and design;
- (iii) appraisal;
- (iv) negotiations and financial award;
- (v) monitoring of implementation and operation of the project; and
- (vi) evaluation.

The complexity and thoroughness of the project preparation and appraisal phases should be adjusted to the characteristics and size of the projects. It is inefficient to apply the same preparation requirements and appraisal procedures to both small and large projects; different procedures will also be needed for non-investment projects, such as environmental education or research. Exhaustive procedures involve higher administrative costs for the Fund and should be applied only to the most important investment projects. The practical solution is to design a few "windows" for different types of projects and to tailor appraisal criteria and procedures accordingly.

Project identification

Fund disbursement decisions should not be taken on a first-come-first-served basis. Instead, Fund management needs to acquire knowledge of the most promising project opportunities for each high priority environmental problem. To do this, the Fund could require all potential recipients and environmental authorities to define an array of technically and economically feasible investment options consistent with the Fund's mission, criteria and priorities. A knowledge of the most promising

spending opportunities, which a Fund accumulates over time, can serve as an important feed-back for improving of national environmental policy programmes. In order to promote this process, Funds should disseminate widely their strategies, yearly spending programmes, and appraisal criteria: this will encourage potential recipients to prepare projects that meet Fund goals and requirements.

One important issue in the transition is how to weigh ongoing or half-completed projects against new proposals. Some Funds choose not to finance ongoing projects, usually so as to avoid reinforcing the bad habit of launching the investment phase with poor project design, and without adequate financing plans. Under central planning the large costs sunk in poorly designed, unfinished investments were often misused as an argument for further financing. In general, sunk costs must not influence the analysis of financial and economic viability of investment projects. Thus, ongoing projects can be supported only if they are treated as "new" projects and evaluated with respect to future costs and benefits expected without consideration of past spending.

Project preparation and design

Once the most promising project opportunities have been identified for each problem area, further project preparation and design work is needed. For each project proposed, promoters are usually required to prepare first a brief project information sheet, and next a detailed project analysis in the form of a pre-feasibility study, which will be used in the next stage to compare and select the best project proposals that can be funded with available resources.

The pre-feasibility study must prove that the project will achieve the desired environmental goal, and that it is technically and economically feasible. Sensitivity analysis should be undertaken to determine which components of a project are of particular importance for a satisfactory outcome. A crucial element of this phase is to present, compare and rank alternative designs for the project, so that the preferred choice maximises the desired outcome and cost-effectiveness of a project. Neglecting the careful analysis of available alternatives was one of the bad habits of project cycle implementation under central planning.

Project appraisal

Environmental Funds need to ensure that the most effective projects are financed and that costly failures are avoided. This requires adequate assessment of the technical, environmental, economic, and financial aspects of projects. For each project being evaluated, the Funds will have to work through in detail the necessary implementation arrangements and the relationship of the project to the prevailing policy framework, institutions involved and relative responsibilities, assured sources of funding for project implementation, sources of recurrent cost financing, procurement procedures, legal impediments, and other details. Building the capacity to perform a detailed appraisal process is a good investment in the long term. In the first years of operation, the Fund may require significant assistance from professional economic and financial consultants. In particular, assessing financial risks and financial aspects of projects may require the use of outside professionals and institutions.

The pre-feasibility studies should yield enough information for Fund management to identify the most efficient solutions among a range of institutional, policy and technological options. The appraisal process must consider these options, but also check that their information is accurate and complete. The appraisal phase covers the period from the receipt of one or more proposals up to the selection of a proposal or proposals for detailed negotiations.

In order to decrease the costs of project preparation and appraisal for both the Fund and applicants, it may be advisable to use a *two-stage procedure* for project appraisal. In the first stage, applicants should be required to submit a brief pre-application form which includes essential information on the project. Project proposals are first screened against the Fund's mission, programme

objectives and eligibility criteria. Project proposals which are inadequately developed or which are inconsistent with the Fund strategy would be rejected at this stage. Those project proposals that pass this stage would then pass to a detailed appraisal. The Polish ECOFUND provides an example: The ECOFUND uses a set of clear but demanding set of objectives for the initial appraisal of project applications. The initial appraisal aims to select projects that:

- are technically feasible;
- are capable of meeting the specified objectives;
- are environmentally acceptable;
- represent value-for-money in terms of delivering environmental benefits at least cost to the Fund (and to society);
- have acceptable financing plans; and
- have acceptable arrangements for implementation, including project management and procurement (Ecofund, 1992).

The second stage should involve a detailed appraisal, using clear criteria that apply to all investment projects. These criteria should include environmental effectiveness and cost effectiveness. It may be useful to develop a scoring system, based on weights attached to specific elements of the criteria: this allows the Fund to rank different project proposals.

Throughout the appraisal process, the *financial risk* needs to be considered closely. There will always be a risk that recipients will fail to meet the terms and conditions under which they receive financing; the project may have to be scrapped, and money will have been wasted. While financial risk management skills are well developed in market economies, in particular in private financial institutions, the assessment of financial risk was not important under central planning.

Negotiations and financing award

The negotiations and approval the project and its financing is the final stage in the Project preparation process. It includes the final agreement of the details of the project, approval of the recommendations from the appraisal process by the project sponsor, and the establishment of the financing terms and schedule. All the detailed arrangements must be approved both by the Fund's board and by the project sponsor in a written form. All issues should be resolved before the approval is signed.

Monitoring of project implementation and operations

Projects that are under preparation or construction need to be monitored to safeguard the Fund's resources that have been disbursed on a project, to ensure that the project sponsor continues to meet obligations under the agreement, and to facilitate project implementation. The implementation phase should proceed without undue delays. Monitoring is a crucial part of a successful project cycle, since it covers the period when resources are disbursed but not yet yielding a return. Monitoring should continue into the operational phase, when the benefits arising from the project begin to be realised.

One important concern for appraisal will be procurement methods. For large projects, contractors and suppliers should be selected through competitive tender. If this is not part of national law, it should be written into project agreements. In the case of very large projects it is highly advisable to follow the procedures of International Competitive Bidding (ICB).

Evaluation

An evaluation of project results should close the project cycle. This evaluation should also look at the Fund's internal operations during the project cycle. Systematic evaluation is a critical learning device and a prerequisite for building capacity and skills to improve the management of future project cycles. Evaluation reports should be prepared indicating all mistakes that have been made, analysing the causes of success or failure of the projects, and assessing the Fund's ability to detect and prevent major breakdowns. The report should contain recommendations for improving the management of the project cycle, including the process of project identification.

2.4 Disbursing Fund resources

Environmental Funds can use different approaches for disbursing resources, including direct grants, direct loans, grants on interest payments, loan guarantees, loans provided through financial intermediaries, and equity investments.

In evaluating these different mechanisms, it is important to keep in mind that Environmental Funds provide, first of all, a *subsidy* for environmental activities. This should be distinguished from financing. A subsidy can be defined as a transfer of money on terms which are more favourable than those prevailing on the market. In general, when public agencies subsidise environmental activities, they do so in order to stimulate the recipients to undertake efforts and to spend more of their own resources on environmental improvement than they would have been willing to do otherwise. A subsidy usually increases recipients' spending. The lower the required resources that recipients must provide, the stronger the economic incentive provided by the subsidy. But the incentive effect must always be traded off against the limited size of the Fund and against the leveraging effect, since by offering a subsidy, the Fund should seek to stimulate, and not to replace the recipient's spending. In addition, requiring a contribution from the recipient can help reduce the financial risk, as it should help ensure that the recipient has a vested interest in the project's success.

This is particularly important for projects in enterprises. A lack of willingness to contribute financially often means that the enterprise is not interested in the project in the first place, and hence will not implement it properly. An enterprise's contribution to the project cost should be a payment in addition to, and independent of the payment of environmental charges. Sometimes firms want to retain the revenues of pollution charges and use them to cover their share of intra-firm environmental investments. This can not be regarded as leveraging the firms' own resources: the money does not belong to the polluting firm, but to the state which represents the interests of the victims of pollution. In general, this sort of mechanism creates severe problems for Fund revenue systems (see the following chapter). It is also important to ensure that the recipient contribution is in fact an obligation, and not a subsidy from a different source. On the other hand, commercial loans to the enterprise at market rates are a form of recipient contribution, as the recipient will have to pay them back from its own resources.

In choosing disbursement mechanisms, Funds need to take into account the different incentive effects, administrative costs, and financial risks associated with their use. The incentive effect depends on how much money can be given using different vehicles and how precisely the money can be targeted. Administrative costs to the Fund of providing a subsidy must always be as low as possible, conditional on the environmental effectiveness of their operations. Funds should not be established with a primary objective of institutional expansion; instead, the primary objective should be to recycle resources as efficiently as possible to support priority environmental improvements.

2.5 Comparing direct grants and loans

Grants and loans are among the most common instruments used by Environmental Funds. Although they are very different, for the purpose of providing a subsidy, grants and loans can have essentially similar effects. When a Fund gives a soft loan (i.e. a loan at interest below market rates), it provides a subsidy to the recipient. The subsidy value, however, is not equal to the total amount of money lent. Rather, the subsidy depends on the difference between the terms of the loan provided by the Fund and the terms that would have been offered to the recipient by a commercial financial institution, such as a bank. Even though the banking system and capital markets in general are still under development in Economies in Transition, this argument generally holds as long as alternative sources of finance exist (see Box 4).

On the other hand, grants can be used to provide only a portion of project costs, with the remainder to be financed out of the recipient's own resources. The overall amount of subsidy would not differ from a direct loan at an equivalent below-market rate. The subsidy content of a soft loan can be measured as the cumulative difference in the interest payments under the subsidised loan rate and under the market interest rate. The greater the wedge between market and soft loan interest rates the greater the subsidy implicit in the loan. This subsidy content can be regarded as a grant equivalence of the soft loan, indicating the same economic effect of the loan and grant when other loan terms are held constant. When other terms of the loan, apart from interest rate, are the same for both a subsidised loan and a market-rate loan, the same subsidy can be offered using either a subsidised loan or direct grant. The subsidy content also depends on the loan repayment period. When the repayment period increases, so does the cumulative subsidy, because borrowers then hold the subsidised loan for a longer time.

One danger with a single grant provided at the start of a project is that once the recipients obtain the money, they have less incentive to complete the project properly and on time. To overcome this, grants can be provided in tranches (portions), with each tranche conditional upon satisfactory completion of previous tasks. This requires, of course, that the Fund adequately monitors the progress of the project.

Nevertheless, loans may have two advantages from the Fund's point of view: (i) they can provide discipline for the recipients to think in advance about the viability of their projects over time rather than focusing on the investment (or other initial) costs only. This is true, however, only if there is a strong commitment to pay the loan back. This was not the case under central planning and its soft budget constraints; nor will it be so if recipients expect that loan write-offs are possible. (ii) The other, often-quoted advantage of loans is that at least part of the money spent on subsidies would be returned to replenish Fund revenues. In an advanced example, loans would cover the cost of inflation, creating a revolving fund. However, this requires, very good project preparation and appraisal, and in particular an accurate assessment of project risks. In general, ensuring a high level of replenishment for Fund resources requires a low level of subsidy in Fund loans. In addition, this scheme may be difficult to maintain in periods of high inflation (see below), as well as when the subsidised interest rates are well below market interest rates. Overall, loans may impose higher costs on the Fund. Financial risk management becomes more difficult and expensive if the Fund increases the use of loans instead of grants and loan guarantees instead of loans. The administrative costs of making good, repayable loans are considerable, and Environmental Funds sometimes find it much more efficient to provide a subsidy in the form of a grant rather than a loan.

There is a widespread argument that Environmental Funds can use soft loans to correct credit market imperfections. There is a misconception in this argument. Subsidy programmes are often intended to increase access to capital resources that may be limited by discrimination, institutional barriers, lack of information or scarcity of capital in the transition period. However, they cannot and should not aim to reform fundamental imperfections: Environmental Funds will never be efficient financial institutions in fiscal terms and cannot provide effective long-term means for correcting distorted capital markets.

In spite of this limitation, Environmental Funds are under pressure to provide not only subsidies but also regular financing for environmental investments. In addition, with the process of decentralisation, local and regional governments may be in charge of the development of environmental infrastructure, such as wastewater treatment facilities, without a source of finance to cover capital costs. Comprehensive Environmental Funds, however, are not well-suited to run pure financing programmes. These programmes require significant skills in financial management and financial assessment of projects, while the comparative advantage of general Environmental Funds is in economic, technical and environmental assessment of projects. One solution is to use co-financing with commercial banks; this can also increase the banking sector's experience and role in environmental financing (see below). If commercial banks and capital markets are not well-developed enough to meet the financing needs of municipalities or enterprises, government should look to fill these gaps through development banks and other forms of state banks, or through specific revolving funds. Financing for public infrastructure may present particular problems. General Environmental Funds cannot provide the best solutions to these problems; better mechanisms can include revolving funds and dedicated municipal finance funds.

Box 4. Loan/grant equivalence under poor capital markets

There is an argument that grants and subsidised loans should be considered equivalent only if capital markets are efficient, as market rate loans are available under this condition. In most Economies in Transition, a banking system exists, and though in many countries this system is experiencing a variety of problems, funding is often available, though at different costs. The scarcity of capital for certain types of projects or for certain borrowers is manifested on the market by the prohibitively high cost of this capital. For instance, the high cost of capital for environmental projects is reflected by high interest rates charged by commercial financial institutions on loans made to finance environmental investments. Environmental Funds have to take capital market conditions as given. They have no impact on the risk perception and preferences of banks, and hence, on availability and costs of alternative commercial funding. It simply means that by charging uniform, low interest rates on their loans they may provide a different implicit subsidy (different grant equivalent) to different recipients depending on their individual costs of alternative borrowing. In other words, the grant equivalent of a loan remains the difference between the costs of capital obtained from a Fund and the costs of capital that would have been obtained from commercial financial institutions. If this difference is very high, it simply implies that the equivalent grant which would have been necessary to successfully implement the project would be very large too. In such an instance, the Fund's loan should be seen as providing extremely privileged financing.

2.6 Inflation and the choice of disbursement mechanism

Environmental Funds in many Economies in Transition have to deal with high inflation rates. Although this problem will hopefully diminish in time, Environmental Funds need to consider how inflation affects the choice of disbursement mechanism. Depending on whether a loan or a grant is chosen, the Fund or the recipient, respectively, will face greater risk from unexpected changes in inflation. With a loan scheme the cash flow from the Fund to the recipient occurs in earlier periods; in later periods the recipient must repay the loan. If rising inflation erodes the real value of the loan, then the Fund bears most of the cost. If on the other hand, a grant is provided in tranches, rising inflation will mean that the recipient receives smaller than expected funds in later tranches. The opposite

situation may occur when inflation drops unexpectedly, in particular if the grant or loan agreement includes an agreed-upon estimate for inflation.

It is relatively easy to build in an expected inflation rate into the payment requirements for either a grant or a loan. For example, future tranches of a grant scheme can be deposited in a commercial bank that provides interest at or above the rate of inflation. The most important concern, however, is the uncertainty over future inflation. A few, imperfect techniques can be used to decrease this uncertainty. For example, a grant or loan agreement can be indexed to the actual or predicted rate of inflation. As discussed in the section on Fund revenues (section 3), however, no indexing techniques are certain. One alternative, however, is that it may be easier to predict the rate of growth of specific "benchmark" prices particularly important for the success of the projects in a Fund's portfolio. An index of these benchmark prices could then be built into the financing agreement. Finally, it may be necessary to include provisions in grant or loan agreements to allow the renegotiation of funding commitments if unexpected inflation seriously threatens the project's completion.

2.7 Other disbursement mechanisms

Grants on interest payments

This approach is used by the Polish Environment Funds. When a recipient receives a commercial loan from a bank for an environmental investment, the Fund offers a grant to bridge the difference between the market interest rate used by the bank and the favourable interest rate that the Fund would have offered, had it made the loan itself. When the interest payments are due, the bank invoices the Fund for the committed payments. Such an arrangement requires a formal agreement between the three parties -- the Fund, the bank and the recipient.

This mechanism allows the Fund to pass a portion of the project risk, as well as the administrative costs of the loan, on to the bank. One drawback, however, is that the Fund may have less control over the environmental criteria and effectiveness of the project. In addition, widespread use of this mechanism may shift the balance of the Funds project portfolio to projects which yield the highest financial returns, but which are not necessarily the projects with the highest social benefits. Another problem is that the mechanism can create an implicit transfer of subsidy to the bank, although this could be alleviated by selecting the participating bank through competitive tender.

Loan guarantees

A loan guarantee is a promise by the Fund to pay lenders some or all of the loan principal and interest if the recipient is unable to pay. By providing the guarantee, the Fund takes over from the lenders the risk associated with lending, thus enabling the recipient to receive credit on more favourable terms.

However, this mechanism requires an accurate estimate of project risk. One major danger is that Funds providing loan guarantees will not properly estimate or account for the long term cost of loan guarantee commitments. In part, this is because most Environmental Funds, as most government agencies, will use a cash-based budget: transactions are recorded only when cash changes hands. Since loan guarantee commitments are extended over many years, they can look very innocent at the time when the guarantee is issued because no cash costs are incurred to the Fund at this time. However, loan guarantees affect the Fund's budget when the recipients default and lenders invoice the Fund. Financial organisations that provide loan guarantees for profit generally possess extensive resources and experience in order to properly assess and price the risk of loan defaults. Such apparatus is very expensive, but without it bad loan guarantees can quickly deplete the Fund. Moreover, as argued earlier, the risk will tend to be inadequately assessed since public money is involved. Hence, there are inherent

difficulties in estimating the long-term costs of guarantees to the Fund. Thus, Environmental Funds should make use of loan-guarantees only under very restricted conditions.

Loans provided through financial intermediaries

As noted earlier, the comparative advantage of commercial banks is their skill in financial assessment, while the comparative advantage of Environmental Funds is in economic, technical and environmental assessment on a project level. Thus, if Funds are under pressure to use loans as a disbursement mechanism (for example to provide pure financing in addition to subsidies) they may find it more efficient to utilise the banks' comparative skills in financial management of loans instead of building their own new skills and capacities.

Several Polish Environmental Funds extend their loans through existing commercial banks. Typically the bank that holds the Fund's deposits lends deposited Fund resources to the borrowers selected by the Fund. Two issues are particularly important in such arrangements. The first is that clear division of appraisal responsibilities should be established. The bank takes responsibility for financial appraisal of a project, while the Fund should keep control over the technical, environmental and economic appraisal.

The second issue is related to the financial risk sharing between the bank and the Fund. Since in this case the bank lends Fund deposits rather than its own money, it may have a weaker incentive to make good, repayable loans. Thus, the terms of an agreement between the bank and the Fund should impose part of the risk of a loan failure on the bank. The Fund must accept, however, that the larger the bank's share in financial risk, the higher the bank's fee will be. (Polish banks usually charge a fee for loan management of about 1.5 per cent of the total loan amount.)

2.8 Co-financing

An alternative mechanism is to provide Fund resources in combination with a loan provided directly by a commercial bank. Co-financing arrangements with commercial banks have the largest potential to leverage additional resources for environmental purposes in the short term. The resources of Environmental Funds may provide banks with an incentive to participate in environmental improvement projects. In the long term, co-financing environmental projects with commercial financial institutions may shorten the transition period to the time when banks will take over the main role of funding environmental investment projects in the private and the municipal sectors.

In the short term, Environmental Funds may target one specific partner among the banks, as the National Fund has done with the Environmental Protection Bank in Poland. The success of this bank's portfolio may encourage other banks to look for good project opportunities in the environmental area. In the longer term, such fixed arrangements can decrease the efficiency of subsidies, as part of the subsidy may be absorbed by the bank, whose financial risk is reduced.

Environmental Funds may also be used to leverage resources from other public institutions, such as national development banks. In such a case, there may be a danger of multiple subsidies to the recipient if the contributions are counted as the "own contribution" often required of recipients whereas, they are in fact from public resources.

Financing for non-governmental organisations (NGOs)

Non-governmental environmental organisations often undertake projects that yield significant environmental benefits. As citizen, non-profit and voluntary initiatives, they usually have very modest financial resources. These organisations may not be able to match the same amount of financing as

other recipients. In this case, leveraging the resources of NGOs may take two alternative forms. First, by requiring some commitment of voluntary work-hours or in-kind contributions from individuals and institutions. Second, by requiring some contribution of funds from other financial institutions, such as environmental foundations.

CHAPTER 3 THE ROLE OF ENVIRONMENTAL FUNDS: OPPORTUNITIES AND CONSTRAINTS

The main sources of revenue for Environmental Funds in transition countries have been environmental charges and fines, and specifically charges and fines on pollutant emissions. In addition, through special agreements, Environmental Funds may receive foreign sources of revenue, such as grants from foreign assistance programmes. It should also be noted that the government budget can finance Environmental Funds. Often, direct transfers from the government budget have provided finance for predetermined projects; in these cases, the Funds served mainly as a vehicle for transferring money. While in a few countries, such as the Slovak Republic, the government budget is a significant source of Fund revenues, in most countries government budgets are under severe pressure in the transition period. For this reason, funding from government budgets is not considered in this section.

3.1 Environmental taxes and charges

There is a distinction between taxes and charges. In this report, environmental taxes are considered payments for using environmental goods and services, introduced with incentive or revenue raising purpose in mind, but which are used for *general government revenue*. Environmental charges, in turn, are used to refer to those payments that are used to finance the provision of collective services, as well as those *earmarked to an extra-budgetary fund*.

Environmental taxes and charges have two possible objectives: to provide an incentive for polluters to reduce pollution; or to raise revenues. These two roles may be incompatible, in particular over the long term. When the goal is to create an incentive for polluters to reduce their emissions, revenues should decline over time. When the goal is revenue-raising, a continuous stream of revenues is desired, implying that pollution should continue (Smith, 1993).

While the incentive role of environmental taxes and charges is an important issue for environmental policy, in the context of financing Environmental Funds, their revenue-raising role has been most important. In fact, the environmental charges currently in use are generally too low to have a significant incentive effect; their main function has been to raise revenues for Environmental Funds (OECD, 1994a). In spite of this, even if environmental tax or charge instruments primarily have a revenue raising role, it is important that they provide a correct "signal": in other words, that when polluters increase emissions, they must increase payments, and when they reduce emissions, they realise a reduction in payments.

3.2 Which are the most appropriate charges for Environmental Funds?

Emission charges are charges on the discharge of pollutants to the air, water, or soil. These currently provide the bulk of revenues for Environmental Funds used in Central and Eastern European countries.

User charges are levied specifically to raise revenue for a public service, such as wastewater treatment. They can, just as emission charges, be levied specifically on the level of pollutant discharged. User charges are intended, however, to cover the cost of a public service, and as such are

not appropriate as a revenue source for a general fund, although they may provide the basis for the revenue of a specific fund aimed at financing the service.

Input product charges are levied on products or materials used as inputs to processes that generate pollution. Input product charges are often applied where it is difficult to identify the specific sources of pollution (for example, non-point sources such as agricultural chemicals) or where the specific level of pollution is difficult to measure, as in the case of many small, diffuse sources of pollution such as motor vehicles.

Consumption product charges are applied on final products which cause environmental damage when consumed or disposed of after consumption. In contrast to input product charges, they do not serve as a proxy for charging emissions generated in the production stage.

Penalties and fines can also be used to provide a revenue source for Environmental Funds. These can not, however, assure a stable revenue base, and should not be used for the main source of Fund revenues.

OECD's guidelines on the application of economic instruments in environmental policy (OECD, 1991) provide an in-depth discussion of environmental taxes and charges and other types of economic instruments. The OECD guidelines suggest several basic criteria to be considered for both incentive or revenue systems: environmental effectiveness; economic and administrative efficiency (minimising compliance costs and administrative costs); equity, and acceptability. These imply several elements that should be part of a revenue raising system:

- a clear framework and objectives;
- a well-defined field of operations;
- a simple mode of operation;
- integration with sectoral policies;
- low costs of implementation;
- assessment of economic and distributive consequences; and
- conformity with general principles for national and international trade (including the Polluter Pays Principle), with fiscal policy, and with environmental policy.

The following sections consider some of these issues as they apply to the use of environmental taxes and charges to finance Environmental Funds in Economies in Transition.

3.3 Setting up an effective revenue system

Emissions charges currently used by countries in transition have a number of shortcomings. In particular, *administrative efficiency* is often a major problem: systems are frequently overly complex, and do not take into account the responsiveness of different target groups and the administrative capacity needed for revenue collection. The legacy of command and control management, with the strong coercive power of the state, now often causes management failures under the new rules of the game in the market economy and democratic society. Many countries in transition have very sophisticated systems of emission charges that exceed the management capacity of environmental authorities: emission charges are imposed on several dozens of pollutants out of which only a few can be monitored. Various exceptions and special, discretionary rules inflate the administrative costs, thereby undermining enforcement. In particular, waiving charges at the discretion of environmental

authorities is an example of a bad habit inherited from the centrally planned economy, which was characterised by soft budget constraint. It should be assumed that the target groups will always know the enforcement capacity of the government and will choose whether to comply or not after considering the formal costs of non-compliance (fines, etc.) and the expected probability of these costs being actually enforced. In general, as for nearly all types of taxes, control and enforcement of payments will be more difficult and costly when tax rates are high.

Simple and clear emissions charges will be the most effective, in particular because adequate *monitoring* of actual pollution emissions is needed to ensure compliance. For this reason, emissions taxes and charges are most effective when they focus on a few key pollutants and on a limited number of easily identified pollution sources, reducing monitoring needs. Where the management of such a great number of pollutants and pollution sources exceeds the authorities' administrative capacity, compliance will likely be low, and the effectiveness of the whole scheme will be undermined. Where effective monitoring is not feasible, such as for a large number of small sources, some central and eastern European countries as well as some Member countries of the OECD, such as flat rates or proxy measurements based on an enterprise's process technology and level of production. A modest approach can provide the base for a later expansion to more numerous sources and larger numbers of pollutants.

Product charges have several advantages over emissions charges. Collection and enforcement can be much easier, especially in systems under which charges are introduced on a few, key products, such as fuels. Product charges can be more easily incorporated into the existing tax system, avoiding the need for wholly new systems of administration and control. Nonetheless, there may be political resistance to the introduction of such charges in countries where emissions charges are already in place.

In general, all types of environmental taxes and charge systems will work best when they are *simple and transparent*. Complex schemes will create additional administrative requirements. In addition, differences between the rates charged in different regions and on different industries can create political difficulties. When emissions by different economic sectors or in certain geographic regions are taxed at different rates, industries may lobby the administration for additional modifications for their benefit. *Incentive-based* emissions charges, in contrast, may charge different rates in different regions due to differences in local ambient conditions. Where there is not a significant incentive effect, however, a uniform rate may be more politically acceptable. Different rate levels can also cause problems for product charges. Regional product charges proved impractical, because it is impossible to prevent consumers from buying a given product from distant suppliers in regions where the tax did not apply.

At the same time, care should be taken to ensure that environmental taxes and charges do not create unwanted incentives or effects, in particular in combination with other tax schemes. For example, one question is whether companies should be able to deduct their environmental charges from their corporate tax payments. If they are able to do so, this may mean a transfer from taxpayers in general to polluters, who are able to pay lower corporate taxes. Such a scheme may penalise "clean" producers who have lower emissions, and reduces incentives to move toward a less environmentally damaging industrial structure. One cautionary example may be found in Poland, where polluters can deduct their emission charges from corporate taxes from the moment that the charge is levied. This, combined with enforcement problems, has allowed some polluters to reduce their corporate taxes without actually paying the emissions charges.

One important issue for countries in transition is to choose appropriate *mechanisms for revenue collection*. Environmental charges can be collected either by environmental authorities (including the Environmental Fund itself) or by tax authorities. One argument made for assigning the collection of revenues to environmental authorities is that, as they will spend the revenue, they will be most interested in effective collection. In addition, earmarked revenues are extra-budgetary resources, and there is less reason for tax authorities to be involved than for regular taxes and charges.

There are, however, arguments to assign the responsibility of collecting revenue to the tax authorities. They already have the administrative structure in place to process tax collection. Tax authorities may be better equipped for the legal enforcement of tax requirements -- for example, they may have the authority to sequester the property or bank reserves of tax debtors. Such power is usually unavailable to environmental authorities, which have to take legal actions through the courts in order to enforce payments. In addition, as tax authorities do not have a direct interest in the revenue, it can be argued that they are better suited to set up a fair collection system.

Product charges have an advantage in that they can be "piggy-backed" onto existing systems of indirect taxes administered by tax authorities, economising on administrative requirements. For example, a product charge on fuels could be added to an existing excise tax. This is easiest for value based taxes: existing indirect taxes are usually levied on the value of transactions -- that is, on the value of goods and services sold. Emissions charges, in contrast, depend on effective pollution monitoring, and may be best assessed and collected by environmental authorities.

3.4 Appropriate level of government for environmental charges and Funds

There is a natural process of decentralisation of political authority in Economies in Transition and a revival of municipal self-governments. This has led to calls for a decentralisation to local and regional levels of the collection of environmental charges, as well as of the management of the revenues. However, the desirability of decentralisation must be carefully weighed against practical considerations for the implementation of environmental policy. One general principle for environmental policy is that measures, including economic instruments and their revenues, should be applied at the level of the environmental problems that occur (see Baumol and Oates, 1988 and OECD, 1994a). For different environmental problems, different policy levels are optimal.

Most emissions problems, however, escape the boundaries of communities. For this reason, retaining revenues from pollution charges at the municipal level may be inappropriate, first because the environmental benefit per unit of money may not be maximised if revenues are invested at the point of collection, and second, because the use of municipal funds may spread investment resources too thinly to accumulate to an adequate scale of an investment. Some environmental problems, of course, are best tackled at the municipal level, such as urban traffic congestion and noise pollution. Specific user charges, for example for solid waste and wastewater, may also be collected at this level. This should not, however, involve general funds. The appropriate level for environmental policy instruments also should be considered closely when designing or revising environmental taxes and charges and Environmental Funds. For some issues, such as water pollution, a specific fund organised by water basin may be a more effective long-term solution.

3.5 Sustaining adequate finance over the transition period

It is important to secure reliable and stable revenue for Environment Funds over the period of their operation. In particular, *inflation* can reduce the level of revenue in the transition period. In addition, when designing revenue mechanisms for the Fund, the acceptability of these mechanisms needs to be considered.

Unless suitable provision is made, inflation can erode the revenue base of Environmental Funds. This is a particular problem for Funds based on emission charges; product charges that are set as a percentage of the product values, in contrast, will increase at the same rate as the price of the product.

The experience of Poland provides an illustration of two mechanisms that can be used to cope with inflation. Previously, legislation linked charge rates automatically to the inflation index. This solution removed the uncertainty of the unexpected policy U-turns and reduced vulnerability to

lobbying pressures. But there was a major problem that became crucial with high inflation -- adjustments were indexed to the inflation rate of the previous period. In addition, the official inflation index for a given year was not known until well into the following year. For these reasons, the pollution charges in Poland fell significantly in real value over the years 1988 to 1990. Since then, Parliament gave the government administration the authority to revise the charge rate periodically. The Ministry of Environment now indexes charge rates annually to the expected inflation rate for the coming year. Under this system, environmental charges are treated differently under law from standard taxes, whose rates cannot be changed simply by administrative action. Nonetheless, this system has raised questions about the desirability of vesting so much discretion in the government administration. It also requires cooperation between environmental and economic authorities regarding the appropriate index.

In order to provide a relatively steady flow of revenue over several years, it may also be desirable to *diversify the sources of revenue*. One option is to combine a small number of emissions charges and product charges. It will be useful, in addition, to try to forecast possible shifts in pollution levels and consumption patterns that can influence revenues.

Box 5. The distributional impact of tax systems

One important issue that should be clarified regarding the distributional effect of the burden of environmental taxes and charges is the distinction between *final incidence* (i.e. the households that ultimately bear the burden of tax) and *formal incidence* (i.e. who directly makes the tax payments) (see Smith, 1993). Assessing the pattern of final incidence is a difficult exercise, but important in clarifying the political debate.

For equity reasons, governments may want to avoid taxes with a *regressive distributional impact* -- that is, those whose tax payments constitute a larger share of the total expenditures of poorer households. (In contrast, the required payments for taxes with a *progressive distributional impact* occupy a larger share of the total expenditures of the wealthiest households.) Taxes on heating fuel, for example, have a regressive distributional impact in many countries. Gasoline taxes, in contrast, usually have progressive distributional impact.

Distributional effects may be an issue for revenue-raising product charges when choosing the product and setting the charge rate. In this case, both efficiency (elasticity) and equity considerations are important. For instance, all things being equal, goods with relatively high price elasticities of demand should have relatively low taxes. Consumption decisions are thus not significantly affected. Goods which have low price elasticity are regarded as an appropriate tax base since the amount of tax payments is quite stable over time and predictable. From the point of view of equity, governments may want to place low taxes on goods on which low-income households expend a large share of their budgets. Other considerations for product charges include whether there will be a substitution effect, as consumption shifts toward substitute goods that are not taxed. In many cases, however, the effects of environmental product charges may be far outweighed by those of other taxes, such as excise taxes and value-added taxes. In general, environmental issues and distributional issues should be resolved separately, by different government policies (OECD, 1994b).

In order to ensure sustainability, it is also important to promote the *acceptability of the revenue system*, particularly among the target groups that pay the charges. Two issues may be of concern regarding the acceptability of charge systems: their distributional aspects and their impact on competitiveness (see Box 5 on the distributional impact of charges). Overall, environmental taxes and charges with a revenue-raising objective are likely to have a very small impact compared to other costs and constraints that businesses and households face. Nonetheless, these may become important political issues, and deserve adequate study for the implementation of new charge systems or the reform of existing ones.

Emissions charges or taxes raise the private costs of polluting enterprises, and the affected enterprises may claim that their international competitiveness is reduced. Most likely, however, the effect of revenue-raising environmental taxes and charges will be overwhelmed by other cost elements in the transition. (It also may be noted that higher, incentive-based charges, although they may create short-term adjustment problems, should in theory promote a longer term competitive advantage by encouraging domestic enterprises to use resources efficiently.)

Another important issue is that Environmental Funds that rely on emissions charges will likely face demands by the agents that pay the charges to use the resulting revenues to finance their own abatement expenditures. When Fund expenditures are linked directly to revenue sources, this may provide a "carrot" to win the political acceptability of a target group for environmental policy measures. It does not violate an extended interpretation of the Polluter Pays Principle unless, as noted above, environmental charges are tax deductible. Generally speaking, however, *Environmental Funds should not allow inside earmarking*, nor any linking of charge payments to financing. This practice can decrease the efficiency of Fund subsidy programmes, which are intended to raise and focus resources on priority environmental problems and projects. In fact, if general Environmental Funds are not used or needed to perform this role, then it may be time to consider their replacement with other instruments, such as specific funds, direct regulation or incentive-based emissions taxes, or voluntary agreements with polluters.

There are several steps for building acceptability when developing a new system or reforming an existing one. Adequate preparation and study of new revenue measures is needed, in particular when fiscal measures may have an impact on production/consumption decisions, competitiveness, or income distribution. Discussions with target groups and other interests can help resolve conflicts and identify potential unexpected problems. Wherever possible, there should be a defined adjustment period between the announcement of a new policy and the time it becomes effective. This lag gives polluters time to implement adjustment efforts, decreasing their costs of adjustment. Deferred costs are usually more politically acceptable. In addition, the trade-offs between the ambitiousness of a new scheme and the likelihood of its implementation should be carefully considered.

Overall, *simple and transparent revenue systems will work best in the transition*. The objectives of the revenue system should be clear -- whether to raise revenue or to create incentives for pollution control. In addition, the relationship of the revenue system to other tax systems and to environmental policy should be clear. It would not make sense to earmark environmental charges if their objective is to promote incentives for pollution reduction; nor would it make sense to do so if "greening" the tax structure -- i.e. shifting the revenue base from capital and labour to resource consumption -- is an objective of fiscal policy.

Once a system of emissions charges works effectively and has achieved acceptability, it may be useful to widen the net to new categories of polluters and new types of pollutants -- as long as this can be achieved effectively. Widening the charges may be necessary for maintaining revenue if traditional, high-volume pollutants decline due to structural changes and pollution control expenditures. On the other hand, these and other changes may signal that the need for an Environmental Fund has decreased. A well-working system of revenue-raising emissions charges could also be used as a base for a future incentive system.

3.6 Foreign sources of finance

External resources may be channelled through Environmental Funds in the form of *grants* or *concessional* (soft) loans from bilateral donors, or *market-rate loans* from international financial institutions or international commercial banks. 'Debt for environment swaps' are a special case discussed below.

Bilateral donors and international financial institutions may find that using the Environmental Funds as intermediaries for financing environmental investments can provide a number of advantages. For example:

- Environmental Funds have often accumulated expertise in identifying promising environmental projects, some of which may fit the priorities of foreign donors.
- Some bilateral donors and international financial institutions face problems finding local counterpart funding. In many cases, these donors and institutions require such funding, since local financial commitment assures the sustainability of the projects. Environmental Funds can provide resources to co-finance environmental investments.
- Environmental Funds may be better able to undertake innovative financing arrangements than government ministries. Their project portfolio is usually flexible and may include projects that meet special conditions required by the donors.
- Environmental Funds may provide a cost-effective way for bilateral donors or international financial institutions to channel their money to small projects and recipients.

On the other hand, both donors and recipient countries may encounter several *constraints* to the use of Environmental Funds as intermediaries. These may include:

- The Fund may have, from the point of view of the foreign agency, inadequate or simply divergent procedures for project management and financial analysis;
- There may be problems obtaining sovereign guarantees, required for most official loans. When Environmental Funds are separated from government budget, governments may disclaim any responsibility for the Funds' liabilities; a sovereign guarantee must then be provided separately;
- There may be differences in priorities and procedures. Grants and concessional loans often contain clauses conveying special benefits to the donor country. Environmental Funds, managing domestic public resources, are obliged to address domestic environmental priorities. The differences in these priorities may at times be so great that no mutually acceptable projects can be identified. This problem may be aggravated by the fact that often, different donors use and require different management practices and reporting procedures, placing an additional burden on overstretched recipients (EAP, 1993).

Despite these potential difficulties, there can be advantages for the Environmental Funds. First, clearly, is the opportunity to tap an additional source of revenue. Second, working with bilateral donors and international financial institutions can provide an opportunity to learn new methods for the economic and environmental assessment of projects, for project oversight, and for financial management.

In one case, the Polish ECOFUND, a *debt for environment swap* has been used to finance a special Environmental Fund. In this case, after western governments had agreed to reduce Polish debts by 50 per cent, they allowed a provision for an additional 10 per cent reduction, to be agreed on a case-by-case basis with creditor governments, in exchange for equivalent domestic spending on the

environment. To date, four western governments have participated in the debt for environment swap, guaranteeing total revenues of \$460 million until 2010 in accordance with the debt repayment schedule. The use of debt for environment swaps in other situations is clearly dependent on two key considerations: the interest of the national government in pursuing debt reduction; and the extent to which donor governments are prepared to engage in debt reduction, and in particular debt reduction for environmental purposes. In addition, it should be noted that the Polish debt swap established specific requirements vis-a-vis the donor countries: it funds projects with international significance, and also requires technology transfers and equipment purchases from the donor countries.

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ANNEX 1.

Different types of Environmental Funds

Environmental Funds take a number of different forms. One key distinction is between comprehensive (or general) funds and specific funds. *Comprehensive Funds* provide finance for a broad range of environmental protection activities (air, water, soil, noise). Most Environmental Funds in Central and Eastern Europe are comprehensive funds. This type of Fund also exists in some developing countries. To a great extent, comprehensive funds can be viewed as supplementing the general budget for environmental protection. *Specific Funds*, on the other hand, provide finance for an identified environmental problem or program. There are a few examples of this type of fund in the region, such as the water management fund in Hungary. Examples of specific funds in OECD countries include the water agencies in France and the Netherlands and the "Superfund" for the cleanup of abandoned hazardous waste sites in the US.

Funds also vary by their *territorial scope*. Most Environmental Funds in Central and Eastern Europe are national funds, though in some countries, such as Poland and the Russian Federation, there are Funds at the municipal and local levels. Funds can also be organised by ecological regions: the water agencies in France, for example, are organised by major river basins. Environmental Funds can also be organised on an international scale, such as the Global Environmental Facility.

Environmental Funds vary in their *institutional arrangements*. The term "Environmental Funds" is sometimes used to refer just to the *revenue* earmarked for environmental protection. Earmarked revenues are not necessarily lodged in a specific institution. These revenues can be held for redistribution in several different ways, such as a simple addition to the general budget; a separate account in the general budget; or as money assigned to a dedicated organisation. Therefore, structural arrangements for Environmental Funds can range from legal requirements directing the use of earmarked revenue by existing ministries and agencies to a "full-fledged" independent organisation. In some countries, the earmarked revenue is assigned to the budget of regional environmental authorities; in many Economies in Transition, including Hungary and Bulgaria, a special unit inside the Environment Ministry manages the earmarked funds. In Poland, a separate national agency is in charge of the money.

Another important distinction between different types of Fund lies in the *sources of revenue*. The comprehensive Environmental Funds in Central and Eastern Europe rely mainly on environmental taxes and charges. Other possible sources include general revenue and the government budget; some Economies in Transition are considering using financing from the privatisation of state enterprises. Another option is external sources: The World Bank, for example, has provided loans to set up municipal Environmental Funds in Brazil.

A further way in which Funds can differ involves their *subsidy* role. Most Funds in Economies in Transition provide financial assistance on favorable terms through grants, soft loans, and other instruments. This is to be distinguished from Funds that provide loans where the interest is intended to cover inflation, administrative, and other costs, so that loan repayments will replenish Fund capital. A number of states in the USA have set up revolving funds to finance the construction of water treatment plants on this basis. Under this system, user charges for such plants must cover the costs of operation and of the loan for construction. A recently approved World Bank loan to the Russian Federation will set up a revolving fund to provide loans to industrial enterprises for pollution abatement and waste recovery.

ANNEX 2.

The main functions of comprehensive Environmental Funds

Several functions are necessary for the operation of comprehensive Environmental Funds in Economies in Transition. These include:

- revenue collection;
- cash management;
- preparing a yearly implementation programme (budget);
- drafting the eligibility criteria for projects;
- identifying potential projects; soliciting application from potential recipients;
- project appraisal: evaluating project applications;
- final evaluation and award by decision-making group;
- disbursement of funding;
- administration: personnel, accounting, research; and
- monitoring and evaluating projects and programmes.

Not all these functions should to be carried out by the Funds themselves. Revenue-raising, for example, could be undertaken by other environmental authorities or by tax authorities. The core Fund activities revolve around the project cycle, including project appraisal and project finance. Environmental Funds need a management structure to undertake these main functions and tasks. Other important management activities may include budget preparation and financial management, monitoring ongoing projects, and post-project evaluations.

In addition, a decision-making authority is needed to oversee Fund operations, approve budgets, programmes and large expenditures, as well as to ensure that the Fund follows national environmental policy and government financial requirements. This power is usually vested in a board of directors, which in many countries is chaired by the Minister of Environment. However, the Fund should be ultimately accountable to government and Parliament, which should approve its budgets.

Funds may benefit from advisory mechanisms, such as an advisory board of independent experts. Such mechanisms can contribute substantively to the Fund's operations and enhance Fund credibility and acceptability. An advisory Forum to discuss major issues with different stakeholders (industry, environmental groups, and regional and local government representatives) may also be useful.

In many Central and Eastern European countries, the Environment Ministry provides the institutional base for Fund operations. The main advantage is that the public finance nature of Fund spending is directly underlined. In addition, it is easier to ensure this spending supports national environmental policy goals and are in line with overall economic policy. Moreover, the responsibility for oversight is clearly assigned. The danger, however, is that the Ministry may become guided by short term political interests. Moreover, administrative rules, including civil service pay scales, can make it difficult to attract and retain a sufficient number of adequately trained staff inside the Ministry. An independent Fund can overcome some of these disadvantages. It should be possible to introduce more direct social and professional supervision into the decision making process. It should be easier to build a professional staff for the Fund. There are, however, important drawbacks. There may be a trade-off between the Fund's independence from the government, and accountability, and thus a danger that Fund actions could diverge from public policy goals.