

# INTEGRATING PUBLIC ENVIRONMENTAL EXPENDITURE MANAGEMENT AND PUBLIC FINANCE IN TRANSITION ECONOMIES

Grzegorz Peszko<sup>1</sup>

## EXECUTIVE SUMMARY

In many countries with economies undergoing transition to a market economy, environmental expenditures seem to be less than optimal. The standard explanation by environmental economists and environmental policy analysts is that of government failures to provide environmental public goods or to correct market imperfections related to environmental externalities. These arguments often appear to hold, however, part of the problem may also be that public institutions managing environmental expenditure may attract less resources if they do not corroborate with the acknowledged standards of sound public finance.

The focus of the paper is on public, domestic institutions managing environmental investment expenditures in the transition economies of Central and Eastern Europe (CEE) and the New Independent States (NIS). Special attention is paid to autonomous, public environmental funds due to their distinctive role played in the management of public environmental expenditures in these countries. Despite acknowledged problems, environmental funds have usually been recognised as useful tools for countries coping with problems of transition, on the condition that they meet minimum performance standards outlined in the 1995 OECD guidelines on Environmental Funds.

A few environmental funds that made the greatest progress in implementing OECD guidelines are internationally recognised and were often able to attract significant external resources. However, these funds usually operated in the most successful market reform countries, where transition is coming to an end, and the main rationale for earmarked, extra-budgetary environmental funds disappears. Other CEE environmental funds, as well as almost all funds in the NIS, have so far not succeeded in being effective tools of environmental policy nor efficient, transparent and accountable instruments of public finance. Environmental Ministers are under pressure to reconsider if it is worth paying a social cost of earmarking to maintain institutions that so far brought so little value added. The great challenge facing the funds that stay alive will be to improve their performance. A great deal of improvement is needed in the area of fiscal prudence, efficiency, cost-effectiveness transparency, accountability, and non-intrusiveness.

The paper identifies key principles of sound public finance and proposes a comprehensive algorithm for strengthening the management system of domestic, public institutions managing environmental expenditures in transition economies. This could provide for a more complete integration of environmental expenditure management with sound public finance.

## I. MANAGEMENT OF PUBLIC ENVIRONMENTAL EXPENDITURE IN TRANSITION ECONOMIES

### A. Barriers to Public Environmental Expenditure in Transition Economies

At the end of the decade, economic conditions in CEE countries have become essentially different from those prevailing in the NIS.

All countries of the NIS face severe public sector budget constraints. The constraints result from a fall in national income compared to the pre-transition period and the difficulties in collecting tax revenue. This has reduced the availability of public finance to all investments, including environmental investments (World Bank, 1998). Budget constraints in CEE countries are much less severe although these countries are also undergoing often painful, fiscal consolidation. However, not only the fiscal

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<sup>1</sup> Grzegorz Peszko is an Environmental Finance Team Co-ordinator in the Non-Member Countries Branch of OECD Environment Directorate. This paper enormously benefits from the wide consultations held within OECD and comments provided by the participants in an expert group meeting held in Nairobi in December 1999. The views expressed in this paper are those of the author and do not necessarily represent those of OECD or of its Member countries.

systems in (almost all) CEE are much more healthy and sustainable, but also municipal finance and utilities have undergone radical reforms and are now able to support financial maintenance and, increasingly, the development of environmental infrastructure (EBRD, 1999b).

In the NIS, government economic policies themselves are often perceived as a source of unfavourable framework conditions for investment. Detrimental conditions include inconsistent policy development, an unstable macroeconomic environment, high interest rates, elevated inflationary expectations and fluctuating exchange rates (EBRD, 1999a). Distortions in the revenue side of fiscal policy, such as inconsistent and ill-designed taxation, as well as failures in budget planning and expenditure control, have led to chronic public deficits. Tight monetary policies induced low liquidity in the enterprise and banking sector in most NIS countries (EBRD, 1998; EBRD, 1999c). Obstacles to trade and bank credit, barriers to entry, especially for SMEs and foreign firms, and barriers to FDI and long term foreign capital investments have not helped to relieve capital shortages (OECD, 1999c). These obstacles were by and large removed in CEE countries providing liquidity to the economy. The economic policy failures in the NIS have been further exacerbated by the lack of the rule of law, soft budget constraints, absence of competition in government procurement, institutionalised corruption, underdeveloped civil society, absence of government accountability to citizens and democratic institutions, lack of transparency and the low profile of the rule of law in the budgeting process (OECD, 1998b). This may have fostered a microeconomic incentive structure that rewards "rent-seeking" behaviour and undermines the drive for efficiency and fair competition among private sector entities (EBRD, 1997, EBRD 1998; Gady and Ickes, 1998).

In the NIS, country sovereign risk is still high, causing constrained access to foreign capital and high cost of borrowing by governments. Increased nominal interest rates and related discount rates applied by governments usually inhibit financing for most public environmental investments that are typically characterised by relatively low internal financial rates of return.

A distinctive feature of transition in many NIS countries has been an increasing demonetisation of their economies, involving a rapid increase in arrears and shares of money surrogates in industrial transactions and budgetary operations (Commander and Mumssen, 1998). Such surrogates include commodities (barter), various bills of exchange (*veksels*), federal, regional, and local government securities, and (often complex) offset arrangements. In Russia, by 1998 the share of various forms of money surrogates has reached over half of industrial transactions and consolidated regional budgetary revenues (OECD, 1999c). In a number of regions in Russia, this share exceeded 70 per cent (OECD, 1999c). In Ukraine, barter alone has reached over 40 per cent of industrial sales and the share of non-cash revenue in total revenues of the general government was 30 per cent in 1997 (IMF, 1999). The public sector (especially local budgets and extra-budgetary funds) is often not only involved in such schemes but also perceived as a driving force for demonetisation (Commander and Mumssen 1998; Brana and Maurel, 1999; OECD, 1999c).

## B. Distortions in the Budgeting Processes in Transition Economies

In CEE countries planning of the government budget was not carried out without failures, but increasingly, towards the end of the decade, budgets have been implemented as planned and budgetary commitments to environmental expenditure items were met. The process of accession to the EU has encouraged realistic expenditure programming and control, as the European Commission requires the Accession Countries to prepare realistic investment programmes for the implementation of the most costly pieces of EU environmental law (Commission of the European Communities, 1998). The focus is on realism, and in the course of negotiations robustness of assumptions and estimates is being carefully scrutinised.

Quality of budget preparation was generally lower in the NIS. Government revenue has usually been overestimated leading to overly optimistic assumptions about amounts of money available for government expenditure. Failure in expenditure planning was aggravated by little progress made in most of the NIS with tax reform, broadening tax base or improving collection of government revenue (Himes, 1999). The consequence of weak budget preparation was budget implementation flawed with ad hoc adjustments and non-transparent expenditure cuts undertaken during the course of a year. Most government commitments, including environmental programmes, were chronically under-funded. For example in 1996, the Government of the Russian Federation approved 25 environmental federal targeted programmes. However, limited financing was provided for only 11 of them (OECD, 1999a). Budgetary

expenditures are almost always delayed and significantly smaller than commitments. The under-funded federal environmental programmes did not differ from other federal mandates. In 1998, only 30.6 per cent of obligations stemming from major legal federal mandates were actually financed (OECD 1999c). This notwithstanding, public agencies have continued to proliferate a great number of new expenditure programmes every year with additional cash requirements. This has petrified the soviet legacy of strategically overestimating expenditure requirements in anticipation so that, in the likely event of budget cuts, actual disbursements would be closer to what was needed (or wanted).

Efficient allocation of public expenditure requires a clear and realistic long-term strategic framework. Virtually all countries of CEE and the NIS have prepared, during the years 1994-1998, National Environmental Action Programmes (NEAPS). Unfortunately, contrary to elevated expectations, very few NEAPS have provided the anticipated framework for public expenditure management. Most of them lacked specific, measurable and realistic objectives, real priorities, instruments for implementation and institutional reform programmes (especially for improving enforcement) which would assign responsibilities (OECD, 1998e). Normally, there are no specific, time-bound targets in NEAPS with robust estimates of costs and affordability of achieving these targets. Two efforts to prepare strategies for financing environmental programmes (for Lithuania and Armenia) stood as academic exercises, not useful as tools aiding policy choices (COWIconsult, 1998).

Environmental programmes in the NIS are usually dominated by the "needs" or "wants" mentality rather than "affordability" mentality. They contain lists far too long of problems to be tackled and corresponding large gaps between expenditure needs and money available, particularly public finances. Environmental authorities have been developing action plans that were often too ambitious without due consideration that, even if finance were available for all capital investments needed to meet the planned targets, the subsequent cost of the entire action plan could be unaffordable for the economy. This would be the case if the country (region) could not finance — out of current national (regional) income — the operating and maintenance costs of new (higher) levels of fixed assets plus the operating costs of the new institutions that need to be put in place.

In the NIS, probably the most sizeable opportunity to enhance government expenditure on environmental investments in the short and medium term is through revising the public sector expenditure choices. This could reduce spending in areas that both increase emissions and impoverish societies, thereby releasing resources for investments that enhances both the environment and the welfare. One obvious area of the wasteful use of public resources, particularly in the NIS countries, is ongoing subsidies to loss-making state owned or even private enterprises that subtract value from, rather than add value to the economy (OECD, 1998b; EBRD, 1998). Reducing excessive military expenditures could also potentially release large resources for the environment and development (Partridge 1996, Gandhi *et al.*, 1997).

Budget expenditure cuts in the NIS usually involved ceilings for investment expenditures, while financing was made available for operation costs of exiting technologies or infrastructure. This often led to the continuing operation of inefficient and polluting assets, even if their replacement through investment would bring a high rate of return. In many countries of the former Soviet Union, the municipalities are equipped with extensive environmental infrastructure, such as immense waste water treatment plants designed by optimistic Soviet planners to serve a population several times larger than the current level.

### C. Institutional Responses to Barriers to Public Sector Environmental Expenditure in Transition Economies

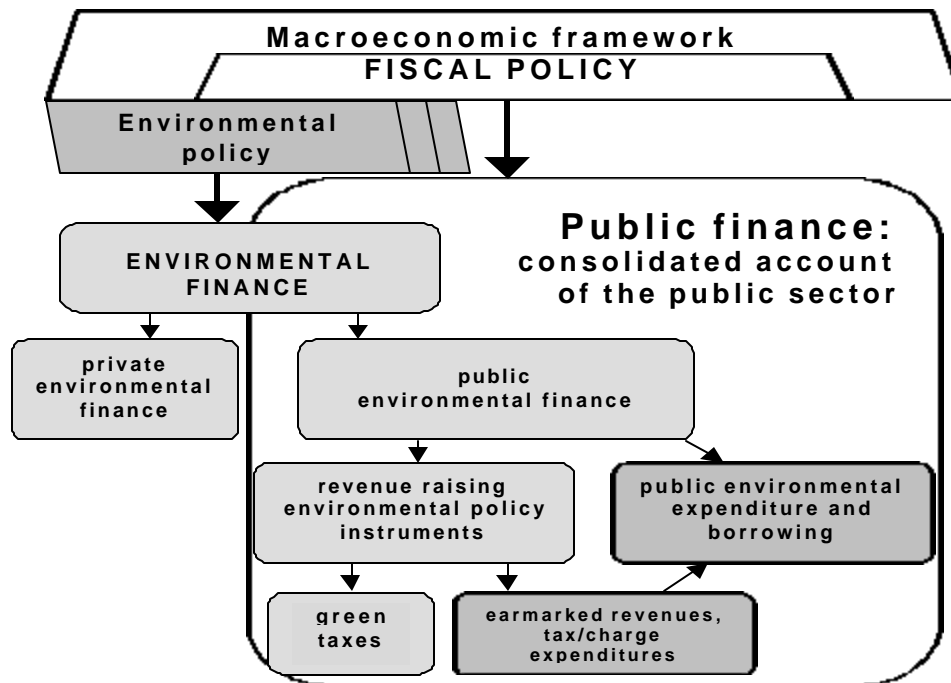
Public sector environmental expenditures in transition countries have relied on three major domestic institutional sources of financing: local governments, transfers from central government budgets, and environmental funds (USAID, 1996; Peszko and Zylicz, 1998). Foreign aid played a crucial role in selected countries (for example, Estonia), but overall, transition economies in CEE have never been aid dependent countries (Klassen and Smith, 1995).

In the CEE countries, budget transfers for environmental purposes have been gradually replaced by private financing and autonomous public environmental funds. For example, in the Czech Republic, the government budget share of total environmental financing dropped by more than half in 1997, compared with 44 per cent in 1992 to 1997 (OECD, 1999d). In the Baltic States, substantial budget

resources have been channelled through Public Investment Programmes (PIPs), primarily to support environmental infrastructure investments.

In the CEE countries, the relative importance of national versus local budgets varies from country to country, reflecting among other things, the relative autonomy of local communities and the strength of municipal finance. In 1994, local governments in Hungary provided 79 per cent of budgetary PAC investments, compared with 21 per cent from the central government. In 1996, local governments in Poland provided 84 per cent, against 16 per cent from the central budget. In Lithuania, however, local governments provided only 3 per cent of PAC budgetary investments and the central government 97 per cent.<sup>2</sup>

Figure 1. Environmental Investment Expenditure by Source of Financing in Selected Transition Economies



Sources: OECD ENV/NMCB common data base; for Belarus: OECD 1997b; for Ukraine: UN ECE 1999

Note: In the Ukraine bank credit was not used for financing environmental investments, therefore commercial, domestic sources of financing include mainly enterprises' retained earnings.

The decline in environmental expenditure in the NIS could be attributed mainly to the contraction of public sector financing. Budget transfers, which historically had financed infrastructure investments, have largely dried up in the NIS during the transition and the associated economic downswing, with local governments turning to other sources such as debt issue, and increasingly, postponing investments (OECD, 1999d).

Access to financing of investments by utilities (water, transport, district heating, waste management) often depends on their ability to cover the full costs of their services through prices. For several generations municipal services were cross-subsidised in the planned economy (EBRD 1997). Now, often a significant increase in user charge levels is necessary to cover the capital and operating costs as well as the debt service. Most municipalities in CEE countries (re-) gained ownership of utilities and

<sup>2</sup> Based on the abater principle. Environmental fund spending is excluded. Breakdown across central and local government is based on investments made by investors with more than 50 employees only. (OECD, 1999c).

control over the rates. Utilities have been corporatised and commercialised, and tariffs are moving steadily towards cost-recovery levels. This has led in some countries to tariff shocks and arrears accumulated by households, especially in the lowest income groups where the share of household budgets allocated to utilities was particularly high. In the absence of mechanisms to protect the poor, who were disproportionately affected by the price increases, their unwillingness or inability to pay have undermined the financial viability of many investments (EBRD 1997). Some local governments, however, have not made commitments to full cost recovery pricing in energy, transport and environmental service utilities even if it would be affordable in the longer run.

In the NIS, utility restructuring has yet to be done. In several countries utility rates are still set by central governments (World Bank, 1998). Local budgets are overburdened by maintenance of extremely costly blanket subsidy schemes for utilities that transfer rents to rich households. Financial viability of utilities deteriorates further because of political pressures to maintain the provision of services to the non-paying customers. At the same time many liquid, commercial customers are disconnecting utilities because the tariff structure makes them subsidise households and insolvent customers and those who are able, but strategically unwilling, to pay.

#### D. Comprehensive Public Environmental Funds

Numerous barriers to adequate budgetary appropriation for environment purposes have motivated many environmental ministries in transition economies to look for earmarked and extra-budgetary arrangements for expenditure management. The principal stated rationale was to boost public environmental expenditures and to shield them against myopic fluctuations and budgetary cuts inevitable in the heat of fiscal consolidation.

Most CEE countries and the NIS have set up comprehensive environmental funds on national, regional and/or local levels. Comprehensive environmental Funds are domestic public entities that provide earmarked financing for a wide range of environmental improvements for both THE public and private sector. Nearly all countries in the CEE/NIS region have at least one national environmental fund, and a few (Poland, Lithuania, Latvia, Bulgaria, Russia and Ukraine) have from two to several thousand, including regional and local funds. On the local level such funds also exist in China. National environmental funds of a similar status are under development in Mexico and China with technical support from the World Bank. There is no exact equivalent to the CEE/NIS environmental funds in "old" OECD countries. Some institutions have similar characteristics, although they are not comprehensive, but sector specific, with targeted mandates (for example, French or Dutch water agencies, Superfund in US) and time limited (for example, French agencies managing revenues from air pollution and noise fees phased out before 2000). The government of Austria has contracted commercial bank and Germany state-owned banks to manage soft-loan programmes to support municipal environmental infrastructure investments.

The reliance on subsidies provided through earmarked environmental funds is by itself an indicator of weak enforcement of other, less distortionary instruments of environmental policy, such as environmental standards, permits and taxes. The increasing effectiveness of enforcement of the latter instruments in the private sector, under the conditions of hard budget constraints will augment the role of private financing (Panayotou, 1997). Also tightening budget constraints in the public sector will contribute to improved cost recovery in the provision of environmental services by utilities (Gentry, 1997). In particular, in the CEE countries, the main bottleneck to environmental finance is the lack of a credible policy framework to stimulate demand for investments, rather than lack of finance (OECD, 1999d). In the NIS, persistent, serious obstacles to access to capital have additionally troubled the weak policy framework.

In many CEE countries, environmental investment funds (EIFs) have played an important role in financing environmental expenditures. In Poland, they financed about 30 per cent of environmental investments in 1998 (down from their earlier level of more than 50 per cent in the beginning of the 90s) and in Hungary, Lithuania and Slovenia about 20 per cent (OECD 1999d), and 12 per cent in the Czech Republic. In Bulgaria, however, the share of EIFs in financing total environmental expenditure was negligible, only 0.13 per cent-0.26 per cent, although weak data were available on environmental investment expenditures (Ministry of Environment and Water of Bulgaria, 1999; COWIconsult, 1999).

In the NIS, the role of EIFs versus other sources of environmental financing was rather small. For instance, they covered only about 6 per cent of environmental investments in Russia (OECD 1999a; Goskomekologia, 1997) and less than 0.5 per cent in Ukraine (UNECE, 1999). However, a disproportionate amount of attention has been paid to these funds in debates on environmental policies in the NIS.

### 1. Legal status

The legal basis of EIFs ranges from a decree of the Ministry of Environment (for example, Lithuanian Environmental Investment Fund), to a government Decree (Russian Funds, Latvian Environmental Investment Fund), to a Parliamentary Act (for example, Poland, Czech Republic, Hungary). Funds established by the latter are generally stronger and more stable than those established by executive government acts. The legal status of some funds is well defined and rooted in the pre-existing legal order of the state. For example, the Polish debt-for-environment fund has a status of a public foundation defined in the Law on Foundations. The Slovenian Fund is a joint stock company registered under the commercial code. The Lithuanian EIF is registered under the Law on Public Enterprises as a non-profit enterprise and the Latvian EIF is registered as a non-profit, state-owned limited liability company. The independent legal status of some funds, such as the Polish or Czech funds, is defined in a special parliamentary act or by the Act on Environmental Protection.

Some funds (for example, in Bulgaria, Ukraine and some regional Russian funds) do not have independent legal status. Their assets are reduced merely to annual appropriations on a special budget line earmarked for environmental purposes. Disbursement is made (or not) by the Treasury upon the authorisation of the environmental administration. These funds are institutionally embodied in the administrative structure of environmental authorities, without independent management, staff and balance sheets. In most CEE countries and the NIS, environmental agencies in charge of supervising the funds have faced growing pressures from finance ministers to consolidate independent funds into budgets and increase financial scrutiny of their operations.

In the Russian Federation, the Federal Fund is incorporated into the state budget through an earmarked account and virtually all regional funds are consolidated into the budgets of regional administration. Apart from obvious drawbacks from the point of view of flexibility, budget consolidation has a few advantages. In several regions it helped prevent the revenues from disappearing, because tax authorities became involved in the collection of environmental fees and fines. Incorporation of funds into the budgetary cycle of the regional administration enabled to make direct withholdings from enterprises' bank accounts in case of delayed payments. Budget consolidation also enabled tighter supervision of the funds by financial authorities and enhanced financial discipline in the public sector, which is not famous for accountability and efficiency (PROEKO, 1998).

### 2. Management

The legal foundation and institutional set-up of the funds have not always ensured their operational integrity, that is, freedom from political interference in appraisal and selection of individual projects. The legal documents often do not clearly define and separate lines of responsibility of management, supervisory and control bodies. Responsibilities often overlap leading to situations where it is difficult to hold somebody accountable for individual decisions and for the performance of the institution. Violations of the principle that those who supervise should be separated from those who are supervised have not been uncommon. Situations involving conflict of interests have also occurred. In all cases, the participation of external source of capital to funds (donors, international financial institutions) helped in effectively shielding Funds from political interference in specific allocations. Polish and Bulgarian debt-for-environment funds or the Slovenian Fund represent often quoted examples of this phenomenon. In the majority of funds that manage only domestic resources, management autonomy of the fund was largely dependent on accidental, fortunate personal configurations in the management and control bodies, rather than systemic institutional and regulatory provisions. Certainly management autonomy without effective accountability and transparency systems could quickly turn into the misuse of public funds.

In the most successful funds, the role for the responsible government body (for example, Ministry of Environment) is curtailed to setting environmental priorities, key operational principles and

performance standards as well as project eligibility and selection criteria. Government bodies have an indispensable role and obligation to monitor and evaluate the performance of the funds. But appraisal and financing of individual projects is vested with independent management, strongly held accountable for performance.

In the funds that do not have independent legal status, various departments of the environmental administration usually carry out day-to-day operational management and the project cycle. It is only by rare coincidence that the ministry staff has sometimes revealed high competence in project development and financing, such as in the case of the water sector investment projects supported by the Estonian Fund. In the NIS, even on a national level very few funds have well established executive offices with qualified staff and clearly defined responsibilities. The Federal Fund in the Russian Federation is an exception. Environmental funds in the NIS suffer political pressures limiting managerial autonomy and resulting in a low level of performance (OECD, 1998c; OECD, EU-PHARE 1999). As the case of the Polish National Fund shows, however, independent legal status does not *per se* shield the fund from political interference in the selection of individual projects.

### 3. Revenues

The amount of revenues administered by the funds gives an illustration of the fundamental differences between different funds. In 1997, aggregate revenues of the eight CEE “national” environmental funds surveyed by the OECD and EU Phare team (OECD/EU Phare 1999), totalled about \$720 million, or \$9.44 per capita<sup>3</sup>. In contrast, the corresponding figures for the eight NIS “national” environmental funds surveyed were about \$36 million, or \$0.16 per capita. Even within the CEE and NIS regions the funds differ dramatically, at least in size. The 1997 revenues of Russia’s Federal Environmental Fund (\$18 million), for instance, exceed the combined revenues of all other national funds in the NIS for that same year (\$17 million)<sup>4</sup>. However, in the whole region Poland’s National Fund for Environmental Protection and Water Management stands out with its 1997 revenues of about \$403 million, surpassing the aggregate revenues of all other national funds taken together.

The total volume of annual revenue of all environmental funds in CEE (including regional and local funds) is estimated to exceed \$1 billion in 1997 (over \$13 per capita). About two-thirds of this sum accounts for Poland. In the NIS the aggregated revenue of all public funds probably exceeded \$100 Million (\$0.4 per capita), however much of it may be in non-monetary form (see table 2).

Environmental funds are usually capitalised by current revenues from earmarked charges and fines on pollution (for example, air emissions and wastewater discharges), as well as from charges on natural resource use (such as, water consumption, mining) and particular products (such as, fuel, packaging). For some funds (in Slovenia, Estonia and the Czech Republic), proceeds from privatisation have provided significant revenues. A few funds (for example, in Poland and Russia) have generated substantial profits from their operations in financial and capital markets. For those funds that used debt financing, revenue from loan repayments (with or without interest) has also increased, accounting sometimes for up to 50 per cent of annual revenues (some Polish funds). Foreign sources are also increasingly contributing to the revenues of funds in the regions. Two funds have been formed on the basis of debt-for-environment swaps (the Polish and Bulgarian Debt-for-environment funds). Slovenia’s Environmental Development Fund, the Lithuanian Environmental Investment Funds and the Polish National Environmental Fund have been used as intermediaries by foreign financing institutions (the World Bank and the EU). As a special case, Russia’s National Pollution Abatement Facility (NPAF) has been set up to manage the World Bank environmental investment loan to the Russian Federation.

NIS have inherited from the former Soviet Union an extremely complicated and burdensome system of emission charges, levied on a large number of pollutants, which makes the administration of these charges very ineffective and costly relative to the revenue they generate. Poor design and enforcement of pollution charges create ample opportunities for polluters to evade payments leading to very low revenue collection rates, for example, 19.4 per cent in 1998 for Ukrainian Funds according to the Ministry of Environmental Protection and Nuclear Safety of Ukraine, (1999b). The revenue base of

<sup>3</sup> These figures exclude the Polish and Bulgarian Debt-for-environment funds

<sup>4</sup> Some regional funds in NIS were nominally larger than national funds. For example Environmental Fund of Tatarstan Republic reported nominal revenue of \$48 million (PROEKO, 1998)

the Funds in the NIS is further eroded by high inflation and ineffective indexing of the charge rates (Golub 1998). Pollution charge offsets and widespread use of money surrogates (table 2), as well as generally excessive discretion and opportunities for individual bargaining, further undermines the disposable resources of NIS Environmental Funds.

#### 4. Expenditure

The expenditure focus of the funds varies among countries and institutions. Pollution abatement investments in the air and water sectors account for the lion's shares of the expenditures of funds in the CEE. In these countries, the chief beneficiary has been the municipal environmental infrastructure sector. Environmental funds have provided a relatively small share of their financing support to the enterprise sector.

In contrast, in the NIS funds' resources are commonly allocated to non-investment activities such as, running costs and equipment for environmental authorities, monitoring equipment, nature protection or international co-operation. For instance in 1998 the Ukrainian State Fund allocated 85 per cent of its expenditure to administration and research (Ministry of Environmental Protection and Nuclear Safety of Ukraine, 1999a) and the Russian FEF in 1997 - almost 55 per cent (OECD, EU PHARE, 1999). Only few funds, such as the Federal Environmental Fund of Russian Federation (FEF), or the republican fund in Tatarstan, financed significant investments in the real sector. For instance, in the years 1993-1997, FEF supported two typical project profiles. The first was relatively large (on average about \$0.5 million) equity investments in partially or fully private companies that undertook investment in recovery of resources from industrial wastes. The second was rather small grants provided for the administration to purchase monitoring equipment or to support current activities (PROEKO, 1998). One reason for this non-investment focus of funds in the NIS is that their revenues are too low to allow significant spending on investment projects. For example, expenditures of the Ukraine State Fund in 1998 were \$1.1 million, and those of the Russian Federal Environmental Fund in 1997 only \$17.7 million, while a single waste water treatment plant for a medium-to-large size city with main sewerage may easily cost over \$100 million. In addition, these small resources were scattered thinly among too many funds (several thousand local funds in Russia and Ukraine) and too many small projects to satisfy several stakeholders. Another reason was that the wages of environmental administration in the NIS were very low even compared to other government sectors and staff were often not paid for several months. Therefore, funds were under strong pressure from their controlling (and often managing) bodies to finance running costs, also salaries, of the regular government staff.

Environmental funds in the transition economies of CEE and the NIS usually represent little fiscal risk, as their liabilities are usually explicit and not contingent (see definitions in chapter IV). The funds are typically restrained in assuming debt and do not face liquidity problems (although the turnover may be very low in the case of small revenue). There were a few cases, however, of politically driven built-up of future obligations that could not be fulfilled. In several countries, there are legal provisions in place explicitly protecting the budget from assuming liabilities of environmental funds. These explicit clauses, however, may not be sufficient to shield the budget from implicit liability for fund's obligations. Such implicit liabilities may stem from expectations fuelled by the generally soft budget constraint in the public sector.

#### 5. Disbursement Instruments

In CEE initially THE principal form of financing was through grants but this has increasingly been complemented or replaced by the provision of soft loans. Few funds are allowed to use other subsidy instruments, such as loan guarantees and equity investments.

The quality of the loan portfolios in these CEE funds that have historically relied most heavily on debt instruments (Slovenian and Polish Funds) was surprisingly high. There were few non-performing loans in their assets. In both cases the Funds have often contracted commercial banks to perform credit analysis or comprehensive loan management (Peszko and Zylicz, 1998). The quality of bank services, however, always decreased if servicing banks were not selected through competitive processes, as in the case of the Polish National Fund. To improve loan performance, the Slovenian Fund maintains a strong in-house human resources for loan management, and the Polish Funds are using a carrot in a form of an option to convert a part of loan principal into a grant at the end of a repayment schedule if loan servicing

is undisturbed. The limited experience with loan guarantees and equity has been mixed. For example, over-commitment of loan guarantees and forward commitments of grants (in lieu of expected revenue) has caused serious liquidity risk to the Environmental Fund of the Czech Republic and triggered management replacement.

NIS funds have provided finance mostly in the form of grants. The stark exception is the Russian FEF, which invested almost half of its resources as equity in private, usually resource recovery, firms (OECD, 1998d). Direct loans have been used by the NIS funds but usually without appropriate skills and expertise to manage them with acceptable risk control. As a result, few of them have ever been repaid. This variety of instruments is justified but it carries a price tag as well. Disbursement mechanisms became non-transparent and a 'subsidy-equivalent' offered to an investor is rarely calculated, which makes cost-effectiveness difficult to measure, and therefore to achieve.

It was important that these disbursement instruments were adjusted to the needs of the projects to be financed. Some funds have found it difficult to disburse disposable resources because the transaction costs of obtaining grants or the total cost of loans (interests, fees plus transaction costs) were too high to attract recipients. There were also cases when funds sprinkled grants so thinly among different projects for equity reasons that, because of the lack of a full financing package, only a few of them actually triggered the projects implementation.

It was equally important for these instruments to be adjusted to the institutional and managerial capacity of the funds. Usually it was best to first allow the fund to use simpler instruments, such as direct grants and interest subsidies, in order to accumulate experience with financial management, contracting, project appraisal and implementation monitoring. These instruments of disbursing subsidies are also more transparent. Major financial failures occurred when newly created, understaffed funds issued resource-intensive financial products such as direct loans, equity or loan guarantees. Unless a loan department was created with at least 2-3 experienced credit analysts to analyse creditworthiness and collateral of borrowers, or this task was contracted to commercial banks (for a fee), the loan portfolio would usually, quickly turn into a stock of worthless assets.

The experience of environmental funds in CEE countries indicate that contracting due diligence to, and sharing risk with commercial banks have been good tools to mitigate hazards connected with issuing soft loans. Most successful environmental funds in Poland, for instance, retain the full responsibility for appraisal of the environmental and technical feasibility of the investment project, including verification of the project's cost-effectiveness and the project's (not the borrower's) cash-flows (Peszko and Zylisz, 1998). The banks are contracted (and paid) by the funds only for the analysis of borrowers' creditworthiness and collateral. The typical risk sharing agreement between the bank and the fund was 50 per cent-each, which proved to provide a sufficient incentive for the bank to use sound, conservative banking principles. Such an arrangement also allowed the fund managers and stakeholders to retain control of the project's appraisal, implementation and monitoring of environmental benefits.

Very few funds were given explicit mandates to leverage private sector finance for environmental projects (Peszko and Zylisz, 1998). The Lithuanian EIF and the Polish debt-for-environment fund are among notable examples of successful market creation by environmental funds through such instruments as matching grants. Polish national and regional funds have successful track records of leveraging bank credit (including micro-credit) to environmental investments through interest subsidies, notwithstanding the lack of the explicit mandate. However in most cases in the region, particularly in the NIS, the selection of financial products has been typically driven by such considerations as political feasibility (favouring grants) or institutional growth and sustainability of the fund itself (favouring loans or equity). Several funds have fallen into a trap of directly competing with private sector financiers (banks, equity funds), crowding them out of the environmental investment market and bringing long-term damage to the sustainability of environmental finance. This is a particularly sensitive issue in the countries that are most successful in market reforms and economic development, such as Slovenia and Poland. An important component of their successful transition is a growing maturity and stability of financial markets. Private financial institutions are offering financial products that are increasingly well suited to finance healthy investors (including municipalities and utilities) implementing viable projects, with modest rates of return (EBRD, 1999c; Caprio and Demirgüç-Kunt, 1997)).

## 6. Programming and project appraisal

The absence of spending programmes and of transparent, rigorous project selection criteria is often an Achilles heel of environmental funds in the region. Still, virtually no fund is determined by a well-defined programme to implement. In most cases the idea of creating an institution came first, and later a "programme" was added-on for mainly formal reasons. Neither legal nor operational documents specify real objectives to be achieved by the funds. "Real" objectives would be those that are specific, measurable, accepted, realistic and time-bound. (SMART). Instead, the funds typically have (far too long) lists of vaguely specified tasks, which cover almost all possible environmental issues. Only in the very few cases. (such as, Polish and Bulgarian debt-for-environment funds, the Slovenian Fund and the Lithuanian EIF) the mandates of the funds are more narrow and targeted. The absence of such objectives makes it impossible to assign accountability for results and resource use and to evaluate a funds performance. It is a comfortable way for those who control the funds and those who manage them to avoid responsibility for achieving environmental policy objectives. Absence of SMART objectives does not allow performance to be measured. This comfort may backfire however, because without a clear spending programme with SMART objectives it is not possible to determine whether the fund is needed in the first place. Virtually no country has so far carried out an *ex ante* analysis to determine whether such a policy instrument as an environmental fund is an indispensable tool to achieve given policy goals. There is also not a single robust *ex-post* evaluation of whether the funds were indeed necessary to achieve any environmental results that have been achieved. The questions of what would happen without the funds or could these results be achieved with other policy instruments remain unanswered.

Most successful funds have a two-stage appraisal process. In the first, a simple 'pass/fail' criteria is applied as an initial screening to assess if the project is eligible. Subsequently, scoring criteria are used for comparing and ranking of all eligible projects. This effectively "screens out" non-eligible projects and saves resources of both the fund and the applicant. Most effective appraisal criteria are relatively simple, measurable and objective, allowing as little discretionary judgements as practically possible. Most funds, however, still use, at best, eligibility criteria only, and then apply more discretionary approaches to prioritise eligible projects. The role of the political body, such as the Minister, is often overly important in making final decisions about project selection. Usually Funds provide support on a "first-come-first-served" basis and objective criteria, such as cost-effectiveness, do not appear to have much influence in the project selection process. Only two funds in the CEE/NIS region, Polish Debt-for-Environment Fund and the Regional Environmental Fund in Krakow, have systematically incorporated project cost-effectiveness into the operational appraisal criteria (Peszko and Zylicz, 1998). Operational cost-effectiveness should be understood as a working system to measure, verify and allocate resources to those projects for which the full lifetime and discounted cost of achieving a unit of environmental benefit is minimised. For instance, many funds claim they use cost-effectiveness criteria in project appraisal but at the same time do not even collect information on lifetime costs or do not use sound cost-effectiveness indicators to compare and rank different eligible projects.

Post-project evaluation and monitoring is very weak in the funds in the NIS. Environmental benefits are even rarely measured and recorded. Hence, it is difficult to properly evaluate the environmental effectiveness of the Funds and justify them as necessary tools of environmental policies.

## 7. Environmental funds and non-monetary transactions

CEE funds generally operate on a cash basis. In contrast, funds in the Russian Federation and in Kyrgyzstan have relied heavily on non-monetary transactions (ERM 1998; PROEKO, 1998). For other NIS countries there is only anecdotal evidence of using money surrogates. In Russia, often it is very difficult to distinguish "real" flows of money, which can be used to finance projects, from "virtual" records of financial flows, which actually never reach and never leave the funds. Non-monetary transactions have been most common in local and regional funds. The Federal Fund has maintained a relatively strict cash-only policy until 1997 (PROEKO 1998). In Kyrgyzstan, the fund has even employed a full-time "barter specialist" (ERM, 1998). The main forms of non-cash transactions commonly used by environmental funds in Russia involve accepting money surrogates as revenues (vecksels issued by enterprises, banks or some public sector entities) and complex chains of mutual settlements involving barter between fund's creditors and beneficiaries. Many regional and local environmental funds in the Russian Federation have operated as brokers who clear mutual arrears through the exchange of goods or services between enterprises that are a Fund's debtors and those that are a Fund's creditors. Some funds

have accepted swaps of pollution charge arrears into shares of debtor firms. Disclosure of non-monetary transactions in financial reports of the funds is often far from transparent. Not all funds record them in the financial statements. If so, securities are usually recorded at their face, not market, values. Usually it is not possible to determine what are the maturity, liquidity and discount values of these instruments. Very few independent reviews of the cash profile of Funds financial statements have been conducted so far. Table 1 includes data for six regional environmental funds in the Russian Federation compiled by PROEKO for the World Bank.

Table 1. Estimated Revenues of Selected Regional Environmental Funds in the Russian Federation by Form of Payment, 1997 (per cent)

	<i>Cash</i>	<i>Vecksels</i>	<i>In kind and mutual settlements</i>	<i>Charge offsets</i>	<i>Non- cash total</i>
Environmental Fund of Nizhniy Novgorod Oblast	69	0	10	21	31
Government Environmental Fund of Vologda Oblast <sup>1</sup>	75	na	na	na	25
Environmental Fund of Tatarstan Republic	20	75	4	0	80
Environmental Fund of Sverdlovsk Oblast <sup>2</sup>	55	30	15	0	45
Environmental Fund of Samara Oblast	71	0	0	29	29
Environmental Fund of Rostov Oblast <sup>2</sup>	71	29	0	0	29
Total revenue <sup>3</sup>	38	52	4	5	62

Source: PROEKO, 1998

<sup>1</sup> For Vologda the figure is a consultant's (PROEKO) estimate based on the on-site interviews.

<sup>2</sup> Data for Sverdlovsk and Rostov Fund from 1996.

<sup>3</sup> Weighted total.

In many NIS countries, environmental authorities can waive facility environmental charge payments if the money is used for internal environmental investments. In general, such charge offsets simply reduce the revenue base for environmental funds. Some funds, however, record offsets as their "virtual" revenue such as the Nizhniy Novgorod and Samara Funds in Table 1). Golub (1996) notes that the Russian pollution charge offset system may account for nearly three-fourths of total payments due to funds. Usually monitoring and control of company spending decisions by environmental authorities is very restricted. A few regional authorities — for example, in Sverdlovsk Oblast — have made an attempt to control the procedures of fee allowances, but without great success. Anecdotal evidence suggests that at least some investments "financed" through pollution charge offsets are not environmental by international standards<sup>5</sup> (OECD 1998f; OECD/Eurostat 1998).

Some analysts such as Golub in OECD (1998d) and Golub and Kozeltsev in ERM (1998), have defended offsets on the grounds that they give environmental authorities at least some leverage over a firm's environmental performance. They argued that such offsets could represent a more direct form of the Polluter Pays Principle (PPP) and offer administrative efficiency gains, as the polluter retains resources to implement pollution reduction measures instead of transferring them to the fund to be allocated subsequently for other measures. These arguments hold only on the grounds of the NIS-specific understanding of PPP (see next chapter) and disregard allocative efficiency. There are several problems associated with offsetting environmental charges that have not been fully recognised:

<sup>5</sup> During environmental performance review of Russian Federation, the OECD team visited Petrozavodsk pulp-and-paper mill that used pollution charge offsets to replace old, but small internal petrol station with a modern one, but several times larger. The new station was needed, because the company has switched from transporting timber by river to roads and bought more than a hundred trucks.

- (a) Offsetting environmental charges distorts the efficiency of the allocation of public resources among competing environmental projects. With offsetting charges, it is not possible to spend resources on projects of the highest priority, because expenditure is tied to the company that retains charges even if investing elsewhere would bring a larger environmental effect.
- (b) Financing through offsets makes project appraisal and monitoring less transparent than with traditional external financing through a grant or loan. Under an offsetting scheme, the bargaining power of environmental authorities versus a polluter is extremely weak, because money is held in a company's account, and not in the account of the environmental fund.
- (c) Offsetting provides an opportunity for tax evasion without motivating pollution reduction. Under an accrual corporate accounting system, a firm can deduct environmental charges from its income tax base even if they are not paid. If the charges were collected, the firms would have an incentive to reduce pollution and thereby reduce fee liability (even net of taxes). If, however, such charges are levied but not collected, firms have a clear incentive to maximize the "virtual" value of environmental charges that should have been paid, either through increasing pollution or through over-reporting, in order to minimize their tax burden. Moreover, the control of this overvaluing of charge offsets is almost impossible to control. If charges were paid, the amount debited from the firm's account would have to equal the amount credited to the government's account. With offsets, such external checks are blurred.
- (d) Environmental fee offsets lead to fragmentation of environmental expenditures. In many NIS countries, according to the laws governing environmental charges part of the revenues of collected charges must be transferred to regional environmental funds and the Federal Environmental Fund. Therefore, local authorities have incentives to offset charges instead of collecting them in order to avoid sharing revenues with higher levels of government. All revenues are retained on the local level thereby making it difficult to achieve a critical mass of money to finance significant environmental investments beyond the local scale.
- (e) Offsetting environmental charges cause important fiscal risk. It represents one of several examples of the discretionary measures that were applied in an ad hoc fashion by public authorities in the NIS because of a failure to collect public sector revenue. As such, offsets add to the erosion of fiscal discipline within the entire public finance system. Subsidies become conveyed to the firms that strategically refuse to pay, expecting offsets at a later stage. Offsets cause a snow-ball effect since single exceptions inevitably turn into a rule. Offsets of environmental charges spill-over to other fiscal instruments, contributing to tax arrears and obstructing the reforms of public finance.

#### 8. St Petersburg guidelines on environmental funds in a transition to a market economy

Finance and environment ministries have debated the hazards of earmarking since the beginning of the transition period. Despite acknowledged flaws of earmarking, environmental funds have been recognised as useful, perhaps indispensable, tools for countries coping with problems of transition if, however, they meet the minimum performance standards outlined in the OECD guidelines (Box 1). Not only have these guidelines helped with the design of new environmental funds in the region, but they have also served as an effective tool for reviewing the operations of existing funds and designing technical assistance programmes<sup>6</sup>.

#### 9. Future of environmental funds

In the second half of the 1990s, there has been uneven progress in implementing the OECD St. Petersburg guidelines (OECD, 1995a) by environmental funds. In the CEE countries, those few funds that have made the greatest progress are internationally recognised and often were able to attract significant external resources. However, these funds usually operated in the most successful market reform countries,

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<sup>6</sup> Using the framework of St. Petersburg Guidelines OECD and EC Phare experts have conducted performance reviews of Polish Ecofund (OECD/EU Phare, 1998), Estonian Environmental Fund, Czech State Environmental Fund and Slovenian Environment and Development Fund. These reviews were conducted within the framework of the Task Force for the implementation of Environmental Action Programme for CEE.

where transition is coming to an end, along with the main rationale for earmarked, extra-budgetary environmental funds. These funds find themselves under growing pressures to consider post-transition scenarios.

**Box 1. Main Conclusions of the OECD St. Petersburg Guidelines  
on Environmental Funds in a Transition to a Market Economy**

- To avoid or minimize the long-term economic inefficiencies inherent in the earmarking of funds, expenditures should be targeted to meet environmental priorities and promote projects with large environmental benefits relative to their costs.
- Environmental funds should play a catalytic role in financing, ideally offering no more support for projects than is necessary and adapt to changing economic conditions.
- Environmental funds should be used in conjunction with, and reinforce, other environmental policy instruments, such as administrative direct regulations or economic instruments.
- Environmental funds should develop an overall financing strategy, follow clear and explicit operating procedures for evaluating and selecting projects, adopt effective monitoring and evaluation practices, and make effective use of internal and external expertise to enhance administrative efficiency.
- For investment projects, funds should have well-designed programme and project cycles to ensure the cost-effective use of resources.
- Environmental funds must not compete with emerging financial markets but should leverage financing from private sector enterprises and financial institutions for environmental investments.
- In designing and evaluating fund revenue mechanisms, environmental authorities should ensure environmental effectiveness, economic and administrative efficiency, equity and acceptability.
- Environmental funds should ensure transparency and should be accountable to government, parliaments, and the public for their actions.

*Source: OECD. 1995a.*

The future of the funds is best considered in the wider context of environmental and public finance (USAID, 1996). Subsidies always distort markets and increase public sector deficits. Therefore, the need for environmental subsidies is to be carefully reconsidered in the light of the generic "no-subsidy" principle that guides environmental policies in developed OECD countries. An improved understanding of the scale and the nature of that need may help to better target subsidies so that the funds can bring a genuine value-added where and when it is really necessary, without obstructing the process of transition to an efficient market economy. The scenarios for the future of the funds in CEE include a wide range of options, from "privatising" and transforming them into commercial banks to being fully melted back into the budget and administration. Perhaps the last useful public role to play by the CEE funds in their current form may come along with the implementation of the investment-heavy environmental Directives of the European Union in Accession Countries.

Other CEE environmental funds, as well as almost all environmental funds in the NIS, have so far not succeeded to be effective tools of environmental policy nor efficient, transparent and accountable instruments of public finance. Environmental ministers are under pressure from their government colleagues to reconsider if it is worth paying the social cost of earmarking to maintain this instrument of environmental policy which so far has brought so little value-added. The great challenge facing these funds that can pass this test will be to improve their performance in terms of efficiency and cost-effectiveness. A great deal of improvement is needed in the area of transparency, accountability, and non-intrusiveness with the private sector. Adjustments towards the St. Petersburg Guidelines (OECD, 1995a) would be an important first step. The good practices of integrating public environmental expenditure management and public finance, contained later in this paper, can provide further guidance for the reform of public environmental funds in transition economies.

## II. THE WELFARE ECONOMICS APPROACH TO ENVIRONMENTAL FINANCE: THE ROLE OF GOVERNMENT AND THE PRIVATE SECTOR?

### A. Market Failures and Policy Response under the Polluter Pays Principle

Even in most mature economies, the volume of environmental investments, and hence the demand for financing of environmental projects, is usually sub-optimal in unregulated markets because the investors who have to bear all project costs can not capture all benefits generated by these projects. Some project benefits are external, generating economic and financial advantages to the wider community (OECD, 1995b). Economic rates of return (ERR) on these projects are usually higher than internal, financial rates of return (IRR). The smaller the gap between ERR and IRR, the more the project can be financially viable in commercial terms, generating both financial returns and external, economic benefits in terms of environmental improvements ("win-win") (Peszko and Zyllicz, 1998).

The policy response to environmental externalities in OECD countries is guided by the Polluter Pays Principle (PPP). This principle also provides the framework for environmental finance in market economies (OECD 1992). According to the PPP, polluters use their own resources to finance measures required to comply with environmental standards. The government's role in combating pollution is to establish the policy and institutional framework from which demand for financing will emerge. On the supply side, the government is responsible for the provision of environmental public goods. In the area of pollution abatement in transition periods the PPP provides for exceptions to its "no subsidy" philosophy. Subsidies or soft financing may be justified exceptionally and under specific conditions. More specifically, subsidies should:

- (a) not introduce significant distortions in international trade and investment;
- (b) be limited to sectors which would otherwise have great difficulty complying with environmental requirements; and
- (c) be limited to a well-defined transition period and adapted to the specific social and economic problems associated with the implementation of a country's environmental policy.

The PPP is a stated policy principle in most CEE and NIS countries. Its implementation, however, is sluggish because it requires a clearer separation of the roles the state plays both as a source and regulator of economic activity. In addition, in many countries in the region (such as in the Russian Federation, the PPP is becoming reinterpreted in a way that diverges from the OECD tradition. The principle is said to mean that polluters should pay the costs of damage caused by their pollution (CPPI, 1998). Because such a principle is obviously impossible to implement, it often boils down to the idea that polluters should pay some pollution charges as a source of revenue for environmental authorities. It is difficult to build effective and realistic environmental policy on the basis of such an interpretation of the PPP principle.

Normally, mature financial and capital markets are expected to respond quickly to the demand for financing pollution abatement by developing adequate financial products (Kwang and Brewer, 1997; Dasgupta and Laplante and Mamingi, 1998). Some soft, temporary government measures, such as information provision may be used to accelerate the response of the private financial markets, as reflected in the recent debate about the "greening" of the private financial institutions (Delphi Int. Ltd and Ecologic GMBH, 1997; World Bank and International Finance Corporation, 1996).

In the transition economies, the policy response fully consistent with the Polluter Pays Principle is usually not feasible. Due to historical conditions, transitional distortions in the public budget management and in the financial markets' policy response will usually be second best (Peszko, 1999). Many transition economies face not only ongoing pollution, but also have to cope with the environmental legacy accumulated during the former planned economy. Many environmental problems involve severe human health effects or irreversible environmental impacts and damages to natural capital (World Bank, 1998). Development of a regulatory framework appropriate in the new market economy and the strengthening of institutions capable of implementing and enforcing it effectively also takes time (Shaughnessy, 1995). Moreover, financial markets do not become mature overnight, creating persistent barriers to the socially efficient volume of environmental investments (Laurson, et. al, 1995).

## B. Role of the Government and the Public Sector

Public sector finance has a different role from private finance. Businesses invest money in anticipation of future cash returns. The cash return on successful investments exceeds the firm's cost of capital (Brealey and Myers, 1996). Unsuccessful investments are penalised by the market. Governments undertake investments because they anticipate future social returns, which may or may not be pecuniary. Successful government investment is when the social rate of return exceeds the social opportunity cost of public funds, which is the equivalent to a firm's cost of capital (OECD, 1995b). The social opportunity cost of environmental investments includes social benefits foregone because of not investing these funds in education, health service, and so on, as well as the cost of using distortionary future taxes to service any debt incurred to finance the investment.

The public sector is essential to provide public goods and infrastructure in such environmentally sensitive sectors as energy, transport and municipal environmental services as well as forestry and nature protection. (Clements and other., 1995; World Bank, 1994). A public good can only be provided by government intervention since private enterprise has no interest in products to which access can not be restricted, and therefore priced and sold (Samuelson, 1954). Governments also invest in public consumer durables, such as parks, museums, and socially responsible media. For such goods it may be inefficient to recover full costs through user fees, either because consumption of these goods is not rival (up to the point of congestion), or because it is difficult to exclude non-paying users (Buiter, 1999).

Public investments may yield direct cash returns. Sometimes the user fees for private consumption of public infrastructure may cover full annual investment and recurrent costs plus even yield net cash earnings (World Bank, 1994). If, however, the risk adjusted, financial rate of return also exceeds the prevailing cost of capital of private firms, there is no need for government to undertake investment. Public resources could be saved and allocated elsewhere, where they are genuinely needed (Zylicz 1998).

Temporary government support to non-infrastructure environmental investments in the private sector may sometimes be justified by the interest to society as a whole. However, subsidies in different forms to the private sector are regarded as a second-best solution because they create other distortions in the economy and may have a rebound effect on the environment (de Moor, 1997; Pieters, 1997; Panayotou, 1997). The first-best government's core functions *vis-a-vis* the private sector include ensuring the rule of law without which markets do not function, strengthening human resources and infrastructure and establishing a regulatory framework that fosters socially beneficial incentives (OECD, 1999e). Within their regulatory functions, governments are expected, among other things, to internalise external environmental effects into the market price signals through administrative or economic instruments (OECD and PPC, 1995; World Bank, 1995; Pearce and others, 1997; Peszko, 1999).

## C. Distortions to Environmental versus Other Public Finance

Environmental advocates often say that the environment calls for special budgetary treatment compared to other public goods such as education, health care or street lighting. Economic theory indeed provides some guidance to support this view. The root of many problems associated with allocating budgetary resources to environmental projects, not only in transition economies, is the lack of a specified political constituency for the environment that could effectively take part in political bargaining over the allocation of the government budget (OECD 1995a). Environmental projects, unlike many other investments in social infrastructure (roads, hospitals, schools) often benefit very dispersed individuals and communities (the common good problem). Allocation decisions are additionally distorted by inter-community externalities. For example, hospitals, roads and water supply benefit directly the community that invests resources. In contrast, a wastewater treatment plant yields benefits to neighbouring communities down-stream. In addition, these benefits are deferred in time, while the time-frame, considered by most political groups involved in budgetary bargaining, is limited by the election schedule. When projects generate intergenerational benefits, a potential part of the constituency for the environment can by no means take part in the bargaining process because it is not yet born.

### III. PRINCIPLES OF SOUND PUBLIC FINANCE

#### A. Three Main Goals of the Public Expenditure Management

The three main goals of all public expenditure management systems, widely quoted in the literature, are fiscal discipline (expenditure control), allocative efficiency and cost effectiveness.

##### 1. Fiscal discipline

Due to the fact that public financial resources in general have features of "common, open access" resources, they are susceptible to the "tragedy of the commons". In the absence of any constraint, meeting the demands of disparate claimants, inevitably behaving like "free riders", is likely to result in large, unsustainable deficits that translate into an unstable macroeconomic environment — high inflation, high interest rates, burgeoning current account deficits — of which the social cost is tremendous. Therefore, implementing constraints on the aggregate level of spending and deficits over the medium-term becomes the overriding objective of all public expenditure management systems. This control over total public sector expenditure translates into constraints imposed on sectoral financial envelopes. The fiscal consequences of public environmental expenditure (including central and local government budgets, state owned enterprises and extra-budgetary funds) must be subject to the same scrutiny as all other expenditure sectors.

Fiscal discipline requires control on the expenditures not only of the government *sensu stricto*, but also of the entire public sector. For accountability and financial control, reports should consolidate the financial operations of the general government (central and local governments) and the financial activities of all entities controlled by the government (OECD, 1996a). Moreover, it implies control not only of explicit expenditures and commitments, but also of other explicit or implicit commitments that can have an immediate or future fiscal impact. Government liabilities can be certain or uncertain (contingent), and explicit or implicit (Schiavo-Campo and Tommasi, 1999):

- (a) Explicit liabilities and commitments that are legally mandatory and predictable, such as budgeted expenditure programmes, multi-year investment contracts, and debt obligations;
- (b) Explicit and contingent liabilities that are legal or contractual obligations triggered by a discrete event that may occur with certain probability, such as state guarantees for loans contracted by non-central government entities (sub-national governments, extra-budgetary environmental funds, public and private enterprises) and state insurance schemes (for such as, for floods).
- (c) Implicit liabilities represent an obligation or expected burden for the government that is not legal but arises from public expectations. For example, governments are expected to maintain a public environmental infrastructure, and may be expected to assume some liabilities of extra-budgetary environmental funds in the event of their failure, even if not required to do so by law.

In most countries budgeting decisions focus on direct expenditure programmes and on multi-year explicit legal commitments such as debt servicing. Less attention is usually paid to implicit or contingent liabilities. In the wake of financial crises this makes future problems worse than they would be if the realities were faced more openly (OECD, 1997a). Sound budgeting and policy formulation require a wider and more courageous approach, covering more effectively and directly the fiscal risks faced by governments in the short term as well as in the long term. For example, obligations arising from current or new environmental expenditure programmes and policy measures must be assessed realistically, whatever their nature — implicit or explicit, direct or contingent.

##### 2. Allocative efficiency

In democratic countries, the budgetary process is the preferred mechanism which societies use to ensure the best use of public resources. Within the framework of aggregate fiscal discipline, the challenge is to prioritize competing claims of different social objectives on scarce public resources (World Bank, 1999). Difficult choices must be made between the marginal social benefits of expenditures on, for example, education, health service or environmental infrastructure. Ultimately the aggregate expenditure outcome is achieved through political bargaining. Ideally, the expenditure outcome is based on consensus, and bargaining is supported by adequate information being provided to all parties about trade-offs that are

being made, including what everyone is having to give up and gain, together with future benefits that will derive from current sacrifices (Campos and Pradhan, 1996).

Impersonal rules for evaluating the relative importance of programmes and projects improve the quality of the prioritization process. Since impersonal rules apply equally to every programme and project, the government cannot be as easily accused of favoritism and thus is better able to defend itself against criticism. Economic cost-benefit analysis and incidence analysis are examples of such rules. The first can provide information on the net social gain, while the second can potentially make transparent who gains and who loses (World Bank, 1999). Certainly, this view assumes that parties are guided by binding rules and that incentives are in place to seek outcomes through rational debate rather than through corruption, fraud or violence (though experience in many OECD countries suggests that there may be problems with the political acceptability of such techniques). Moreover, methodological and informational problems can create significant uncertainties and grounds for legitimate differences in interpretation.

Central ministers, by definition and by their mandates, are in a comparatively better position to ensure the efficient allocation of public resources among different sectors. The line ministers, (including the minister of the environment), whose view on a general budget is by nature parochial, have comparative advantage (such as information) in programming and allocating resources within their respective responsibility areas, within the external constraint on the sectoral envelope size. The new challenge to the budgeting process is for the government to develop mechanisms to avoid sectoral spending decisions that undermine the objectives of other sectors' expenditure programmes. For example, much curative expenditure by the ministry of the Environment could be avoided, and hence common resources saved, had the pattern of infrastructure spending by the Ministers of Transport, Energy or Agriculture been more informed on the concerns related to environmental externalities.

Within sectors, a rational process of setting priorities is also needed to ensure allocative efficiency. Hard budget constraints from the top are necessary, although not sufficient, conditions to create incentives for sectoral ministers to prioritize expenditures and to seek efficiency (OECD, 1996a).

### 3. Cost effectiveness

Public finance schemes should achieve their objectives at minimum costs. Cost effectiveness is considered not to be an issue in the private sector, where the incentive structure on competitive, private markets forces all economic agents to continuously search for cost minimizing opportunities. Such incentives do not exist automatically in the public sector; the opportunity cost of money is not a painful constraint (due to plentiful opportunities for rent-seeking and free lunches). The necessary conditions for such incentives to be created include a hard budget constraint, explicit legal requirements supported by the rule of law, managerial autonomy deep-seated in accountability and transparency mechanisms, predictability of resource needs and availability, a compensation system rewarding cost savings and high technical competence (World Bank, 1999).

Contrary to allocative efficiency, cost-effectiveness is primarily a technical concept and always suffers from political influences. Therefore, it requires a sufficient degree of managerial autonomy over allocations of resources among specific projects and a responsibility to implement defined expenditure programmes. However, it is unlikely that public sector managers will be committed to cost-effectiveness unless this is clearly defined in their lines of responsibility unless they are held accountable for performance and cost-effectiveness is a prominent performance indicator. Managers can be held accountable for project selection only if they are exclusively responsible for it. Managerial autonomy requires the separation of those who control from those who are responsible for management and are controlled. The Control body, which can be political in nature, can be held accountable for ensuring that the executive managers use public financial resources cost-effectively, according to the established rules, and that expenditure goals are effectively achieved. But even the Control body must operate within the clear boundaries of the law and explicitly established rules.

The capacity of public sector institutions for cost-effective delivery of services depends also on the predictability of the flow of resources. Unless an environmental ministry has a degree of confidence in how much its programmes cost and the resources it will have available over the period of implementation of those programmes, it will not be able to optimize plans and therefore will not be able to make cost-effective allocations. For instance, in several transition economies, the budget is remade during the year,

and line agencies face considerable uncertainty in making their expenditure plans for the fiscal year (OECD, 1999b).

Managerial autonomy and predictability will not produce desirable results unless the civil service in line agencies attracts competent individuals. A necessary prerequisite to do this is adequate, performance-based compensation that closely aligns public with private sector compensation. However, this needs to be complemented by a merit-based recruitment and promotion system. Without such a system, competency will not be rewarded appropriately, and this will affect the morale and thus the incentives of civil servants (Campos and Pradhan, 1997). The worst-case scenario is one in which promotions and recruitment are based solely on political connections and influence. This may happen, for example, when the Environmental Minister, who is a political appointee by nature, has an exclusive right to nominate executive board members of a fund. In such cases, high salaries will tend to go to those who are most well connected and civil servants will tend to concentrate on establishing such connections (Schiavo-Campo and Tommasi, 1999).

## B. Necessary Conditions for Achieving Public Expenditure Goals

Rules providing for expenditure control, efficiency, and cost effectiveness may exist on paper but they may not be binding; mechanisms are needed to impose costs on politicians and bureaucrats who violate the rules. Such mechanisms must ensure transparency and accountability in all aspects and sectors of public expenditure systems. The achievement of the objectives of public expenditure management rests on several pillars, namely: transparency, accountability, budget comprehensiveness, participation, consistency, equity, additionality and non-intrusiveness. (Schiavo-Campo and Tommasi, 1999; World Bank, 1999; OECD, 1999b). The first three seem to be the necessary conditions for good public expenditure management.

### 1. Transparency

Transparency entails low-cost access to relevant information. Transparency of fiscal and financial information is a must for an informed executive, legislature, and the public at large (normally through the filter of competent legislative staff and a capable and independent public media). Environmental expenditure schemes, just like all public expenditure programmes, should use acknowledged international standards of accounting and information disclosure (OECD, 1996a). Confidentiality of information in the public sector should be minimized and all institutions should be reasonably open to public participation. As Schiavo-Campo and Tommasi (1999, 13) stated: "there is never a good reason for secrecy concerning revenues and rarely a good reason for secrecy concerning expenditures". It is essential not only that information be provided, but that it be relevant and in understandable form. Dumping on the public immense amounts of raw financial figures does nothing to improve fiscal transparency.

From a fiscal perspective, an essential requirement is to ensure transparency of financial statements of all government controlled institutions. A statement of accounting standards should be presented with the budget of every institution. The accounts should reflect high standards, and should be audited by an independent external auditor (OECD, 1998a). This independent assurance of integrity of financial reports requires a mechanism to be in place to ensure that external audit findings are reported to the controlling bodies and that remedial action is taken. Standards of external auditing should be consistent with international standards (OECD, 1998a). Working methods and assumptions used in producing financial forecasts should be made publicly available.

The International Monetary Fund assembled in 1998 a Code of Good Practices on Fiscal Transparency, which underlines the importance of clear fiscal roles and responsibilities; public availability of information; open processes of budget preparation, execution, and reporting; and independent reviews and assurance of the integrity of fiscal forecasts, information and accounts.

For public financial institutions, such as an environmental fund, criteria for the allocation of resources, such as selection criteria of projects and beneficiaries qualified for subsidies, should be available to the public. Implementation of these criteria should include public participation and should be ex post verifiable by the public.

## 2. Accountability

Accountability means the capacity to hold public officials liable for their actions (Schiavo-Campo and Tommasi, 1999). Accountability measures always must address three questions: accountability by whom; accountability for what; and accountability to whom.

Autonomy and competence of line agencies are necessary but not sufficient for efficiency. Indeed, there is no guarantee that the line ministries, agencies or fund managers, despite their superior information, will implement their expenditure programmes in ways that will achieve the intended results at the lowest possible cost. They could just as well use their budget inappropriately, for example, for personal or parochial gain. Hence, accountability systems should be in place to hold all parties accountable to their respective constituencies for their performance.

The subjective dimension of performance should never be neglected, but it is advisable in most cases to define performance in terms of objective measures. With respect to public expenditure management, performance should be assessed by reference to the three conceptual goals of expenditure control, efficient strategic allocation and good operational management (cost effectiveness). But on the level of a specific expenditure programme, its particular objectives should always be explicitly stated and performance should be assessed in terms of their achievement. The statement of objectives should be SMARTT. This means: (i) Specific, to enable assignment of responsibility for their achievement; (ii) Measurable - to enable monitoring of progress towards achievement and eventual ex post verification of results; (iii) Agreed - to be feasible; (iv) Realistic - because if the objectives are not achievable, resources allocated for their implementation will be wasted; (v) Time-bounded - to allow rational planning and checking of the results, and (vi) Tough - because if objectives can be achieved without additional effort, then no intervention, and no public resources are needed. Once properly stated, the objectives should be implemented and enforced.

Effective accountability has two components: responsibility and consequences (Schiavo-Campo and Tommasi, 1999). First, accountability is an empty concept unless clear lines of responsibility are firmly established and consistently maintained. Responsibility can also be understood as "answerability", that is, the requirement for government officials and public sector personnel to respond periodically to questions concerning where the money has gone and what has been achieved with it. Second, there is a need for predictable and meaningful consequences of good and bad performance with respect to one's line of responsibility. Consequences need not necessarily be punitive, monetary and or individual.

Accountability will depend upon the extent of oversight of financial accounts and audits by groups in civil society (for example, Parliamentary sub-committees); implicit or explicit performance contracts for agency heads and their employees; and the extent of performance audits and their publication (OECD, 1996a). External audits of the government is typically performed by a separate state organization, which usually reports its findings to the legislature and/or the public, as well as to the audited entity itself. State auditors may perform several types of audits, including compliance/regularity audits, performance audits, value-for-money (efficiency) audits, and financial (assurance) audits.

The credibility of external auditing requires that the state auditor and its staff be independent of the governmental units being audited and have unrestricted access to required information. This independence is typically set forth in the legal provisions establishing the state auditing organization. Audits must be performed in accordance with generally accepted auditing standards. All extra-budgetary funds and specialised agencies should additionally be subject to regular financial audits conducted by an independent chartered accountant. If the scale of financial operations is very large and includes international transactions, then an audit should be conducted by an international independent financial auditor.

## 3. Comprehensiveness of the budget versus earmarking and extra-budgetary funds

The budget is the financial mirror of government policy. Most economists argue that for the budget to be an effective instrument of achieving government policy goals it should be comprehensive (OECD, 1996a). The mirror should tell the full truth about the state of public finance disclosing all revenues and all expenditures of every level of government and of all government controlled entities (the so called general government). But economists do not universally agree on the optimal level of comprehensiveness in budget making. On the one end of the spectrum of ideas there are neo-classical,

main stream analysts who argue for far-reaching consolidation. Ideally, all public sector revenue, without exceptions, should be pooled together in the general fund and the legislature, guided by the executive body, should freely allocate these common resources to different public expenditure programmes so as to equalise the marginal social benefit of the last coin spent for each programme. On the other end, economists from the "public choice" school of thinking advocate earmarking and separate bargaining over each tax-expenditure programme (Buchanan, 1963; Goetz, 1968).

Earmarking is a practice of assigning revenue from specific taxes or group of taxes to finance specific government services (Buchanan, 1963; McCleary, 1991). The criticism of earmarking is most vigorously expressed by mainstream economists and public administrators who view government as a single, almost personalised entity ("benevolent social planner") who knows the preferences of a society and is in the best position to allocate and reallocate common resources in order to maximise the overall social welfare. From this perspective, any restriction on the freedom to move resources from lower, to a higher marginal utility expenditure programme must be perceived as a painful infringement on welfare. The closest analogy would be that of a household who would be forced to spend spouse income on butter, meat and cosmetics only. This would certainly result in over-consumption of these items if a spouse were a professional married to an unemployed husband or under-consumption if she went on maternity leave. Social choice economists, on the other hand argue that it is a wrong vision of how budgeting decisions are made in society. They recognise that the political process and information that government possess are imperfect and that societies consist of many groups with different preferences attempting to arrive at a consensus (or at least a simple majority) to support alternative compositions of public expenditure (Buchanan, 1963; Teja and Brackwell-Milnes, 1991).

Earmarked revenues may be directed to specific budget accounts and special institutional arrangements for administering expenditure programmes. These expenditure management services may be institutionalized within the government or can be contracted out to government-owned entities, as in Germany, or even to the private sector, through management contracts, as in Austria (see the long list of institutional options for public expenditure management in the concluding section). Earmarking may or may not lead to extra-budgetary public expenditure management. Some government revenues are directed to public institutions placed outside of the budgetary system and enjoying independent legal status. This is the case of several environmental funds in the CEE countries and the NIS. Certainly, there are extra-budgetary institutions without earmarking where a fund or a foundation is established and capitalized from discrete budget transfers. The degree to which money flowing through these extra-budgetary institutions are disclosed in the budgetary "mirror", and the degree of government control over them varies from country to country.

The ultimate instance of earmarking is featured by pure benefit taxation, when well-defined taxpayers are charged for the collective provision of public services they benefit from (for example, road funds, utilities). User charges make sense when the collective service provided is an impure public good, that is, when it is possible to exclude non-users (and non-payers) from consumption. In such instances, the agency providing the public service is given the authority to collect user charges and the responsibility to implement expenditure programmes in order to develop, maintain and operate the collective infrastructure. The government role is that of supervising the natural monopoly, the features of which such an agency often exhibits.

Below we summarise the main arguments in favour of and against earmarking, invoking and confronting different points of view found in the literature (Deran, 1965). The objective of this overview is not to judge whether or not earmarking is always a good thing, but to extract practical guidelines whether and under what conditions earmarking may enhance public environmental expenditure without harming public finance.

#### Arguments in favor of earmarking

Earmarking embodies benefit principles of taxation, which plead that taxes are fair and efficient if they are borne by those who benefit from the associated expenditure (Samuelson, 1954; Teja and Brackwell-Milnes, 1991). For economists such taxes have an appealing analogy to voluntary market prices. Therefore, earmarking seems to work best when there is a strong revenue-benefit link and the government service has all the characteristics of a pure public good except but excludability (McCleary, 1991). Not all public environmental expenditure would pass these tests. For instance, earmarking pollution charge revenues for supporting pollution abatement measures undertaken by polluters does not

score well by this criterion, although Pirtilla (1999) has made a theoretical case of where it could be. Revenue-benefit links are weak because such expenditures provide benefits not to polluters, but to victims of pollution, because of the externality involved (which makes this public good "impure"). From the polluters' point of view, no abatement is better than subsidized abatement, unless the subsidy covers more than 100 per cent of all associated net costs. By contrast, earmarking user charges collected by public utilities or agencies for provision of collective infrastructure services, such as water supply and treatment or waste management, exhibits all the advantages of benefit taxation.

Autonomous management of earmarked accounts or extra-budgetary funds may be desirable for improving operational efficiency and cost-effectiveness in public spending. Certain categories of expenditures—for example, heavy infrastructure investments—require management mechanisms and multiyear perspective in the use of funds, which are missing or restricted within the traditional budgetary procedures. After all, the whole government administration machinery is designed to serve regulatory functions and policy-making, and not development and financing of investment projects. Moreover, vital environmental and development infrastructure investments and maintenance programmes in transition countries are more susceptible to erratic budget cuts, than say, public sector employment and wages. Unstable revenue flows over the life of large public sector investment programmes may result in cost overruns, due to, for example, costly heavy machinery lying idle over extended periods of time until adequate funding is available for complementary equipment (Teja and Brackwell-Milnes 1991). Usually there are limits to which the flexibility of traditional appropriation management rules can be adjusted for the efficient management of investment programmes. However, even without earmarking, the introduction of flexible rules for transfers between budgets of different ministries, the carry-over of appropriations from one fiscal year to another and a strategic multiyear perspective in budgeting can always improve the quality and operational efficiency of traditional budgeting (OECD, 1997a). The advocates of earmarking for such purposes bear a burden of proof that the flow of earmarked revenue would be more stable than under a comprehensive budget system. For instance, in most of the NIS revenues earmarked for environmental purposes have so far failed to provide either significant or predictable financing for investments. There is no difference between erratic financing from environmental funds and erratic financing from the budget.

Earmarking is said to increase acceptability of new taxes through a stronger revenue-benefit link and through increased taxpayers' knowledge of how their taxes are used. Teja quotes the argument that the voter who might have approved a tax increase if it were earmarked to, say, environmental protection would oppose it under the general budget because she or he may expect the increment to be allocated to an unfavoured expenditure such as defense (Teja and Brackwell-Milnes 1991). This argument is close to the heart of many environmentalists who believe that earmarking environmental taxes enables more environmental expenditure than could have been obtained otherwise from a consolidated budget. So far there is mixed empirical evidence to support this belief. Some researchers, such as Margolis (1961), analyzing expenditures for education in the United States, have even suggested that earmarking tends to reduce, rather than increase the willingness of taxpayers to approve expenditures. Buchanan (1963) attempted to generalize this argument. He found that public services characterized by more elastic demand tend to attract more resources under the general budget system as compared with earmarking, while the services for which demand is less elastic with respect to income stand to gain more under earmarking. Elastic demand public services are those which the taxpayers are willing to give up first when their income shrinks and when painful sacrifices must be done. Public services that provide differentially higher benefits to particular subgroups in the community tend to be relatively more demand elastic than services that are more "general" in benefit incidence (Buchanan, 1963, 466). Education is an example of elastic demand services, as it benefits only families with children. Environmental protection seems to be even more elastic, in the case of the non-uniformly dispersed pollutants, where some segments of the population suffer from pollution more than others. Experience in the NIS seems to support this view. Voters have so far been more willing to approve the shrinking of environmental funds, rather than budgetary expenditures on health or police protection. Therefore, perhaps a higher level of public environmental expenditure could be secured by tying them to these less demand elastic services in the comprehensive budgetary bundle. In Mexico, the share of environmental expenditures of GDP (0.8 per cent) and per capita (\$65) are among the highest among transition economies (OECD 1998g), and a bulk of it is attributed to a high budgetary ratio for the environment. The share of the Mexico Ministry of Environment in the federal budget has increased from 4.3 per cent in 1995 to 6.2 per cent in 1998. The Ministry claims that unlike the budget of other sectors, the budget allocation for the environment has been increasing regardless of the prevailing economic situation (SEMARNAP 1999). If this argument was

more universally valid, the practical implications could be profound. For instance, environmental pressure groups may do better for environment by welcoming budgetary consolidation of earmarked environmental funds and focusing their effort on lobbying a for larger general-budget ratio for environment. If the comprehensive budget system were more transparent and if expenditure prioritization closer matched society's relative preferences, tax and expenditure acceptability could also be improved.

Earmarking may protect priority expenditures benefiting vulnerable groups of society from budget cuts that favor small though powerful political interest groups. However, this is a poor substitute for strengthening democracy, civil society and the rule of law in order to provide better protection of those vulnerable groups. Moreover, powerful interest groups can use precedence of earmarking for the environment to ensure earmarking of much larger shares of the budget for their benefits. Environmental expenditure may become a victim not only of single budget cuts, but also of more permanent marginalisation.

The "something is better than nothing" argument praises earmarking for guaranteeing that environmental programmes are funded at least at some minimum threshold level no matter what happens to the local economy, tax collections or political struggles. However, "something" usually is not enough to implement a programme. "Sprinkling" too little resources among too many projects results in endless project implementation, cost overruns and a waste of public money.

The environmental effectiveness argument states that earmarking generates resources to reduce pollution. This argument stems from a lack of understanding of the complex incentive structure that drives polluters to reduce emissions. Potential access to earmarked funds may actually increase pollution because it gives polluters an excuse to postpone emission reduction until (always scarce) subsidies are made available. The most effective and the least distortionary way to induce polluters to take action soon is to set the environmental tax rate at the incentive level (Peszko, 1999).

Earmarking is sometimes required by donors to insulate their projects and programmes from political risk. It could be avoided if the credibility, transparency, accountability and professional capacity of budgetary institutions were not in question.

Earmarking may also be effective in the special circumstances of the windfall government profits, for example, in the case of significant mineral or fossil fuel discoveries. In such cases, due to the lack of institutional infrastructure in the budgetary process to manage a "wall of money" responsibly, special funds or accounts may be created to ensure that the huge rents accruing are not consumed immediately, flee the country or are appropriated by vested (private) interests, but that they are reinvested to support a more economically, environmentally and socially sustainable pattern of development, for example, in infrastructure or diversification of the economy. When large deposits of oil were discovered in Azerbaijan in 1998, the International Monetary Fund insisted on the creation of a special oil fund, with oil profits collected separately from other government revenues and allocated gradually to support infrastructure projects.

Table 2. Arguments Used in Favor of Earmarking and First Best Solutions

<i>Arguments in favor of earmarking</i>	<i>First best solutions</i>
Embodies benefit principle of taxation	None - but see if conditions for application of benefit taxes are met (strong revenue-benefit link, payers = beneficiaries)
Bypassing inflexible budgetary procedures: operational efficiency, cost-effectiveness	Increase flexibility of traditional budgeting, multi-year perspective
Bypassing salary ceilings to attract technically competent individuals	Performance based compensation scheme aligned with private sector
Protecting priority expenditures and vulnerable groups from budget cuts	Democracy, civil society and the rule of law
Increasing acceptability of taxes	Transparency and efficiency in budget allocation
Something is better than nothing	Enough is better than something
Enhancing environmental effects	Set pollution taxes at incentive level

Extra-budgetary funds can help bypass salary ceilings in government administration to attract technically competent individuals. However, an adequate and performance-based compensation scheme for civil servants, closely aligning public with private sector compensation, could do the same in a sustainable way.

Table 2 summarizes the most commonly used arguments in favor of earmarking. Each argument is complemented by the suggested solutions that can be applied also under the comprehensive budget system. It should be acknowledged that these first best solutions are not always possible in the short and medium term in transition economies. In such instances, earmarking could be considered as a temporary, second best solution.

### Arguments against earmarking

Mainstream economists often condemn earmarking for distorting allocative efficiency. Earmarking introduces rigidity in resource allocation and encumbers the adequate programme prioritization. It makes environmental programmes dependent on specific revenues and can lead to a misallocation of resources with excessive spending, simply because the funds are available, or shortages because environmental projects do not benefit from general tax revenues (Schiavo-Campo and Tommasi, 1999). Earmarking subordinates expenditure decisions not to objective criteria but to the ability of politicians and lobbies to secure protection for their favored programmes. But public choice economists stand this theoretical criticism in its head and argue, instead, that it is general budget financing that imposes inefficient constraints on society's choices. Citizen-consumers effectively have to purchase (through payment of taxes) a bundle of heterogeneous government services, in which unwanted products may be tied-in to the more desired ones (Buchanan 1963; Teja and Brackwell-Milnes 1991). Buchanan has evoked an analogy to a monopolist who forces consumers to purchase a less than optimal mix of products through tie-in sales. It is probably theoretically not possible, and practically not fruitful to judge earmarking by efficiency criterion. Perhaps it is best to say that under all expenditure systems environmental authorities should try to mitigate the damaging effect on efficiency through transparent system of prioritization rooted in clear rules and objective criteria, such as cost benefit analysis. It is worth noting, however, that those economists who advocate earmarking vigorously often admit that it has its greatest potential in pluralistic societies with strong democratic institutions (Teja and Brackwell-Milnes 1991). The NIS do not seem to be the most favorable place by that standard.

Transactions outside the budget are not subject to the same kind of fiscal discipline and control as are budget operations, partly because they “carry their own money” and partly because they are not explicitly compared with other expenditures (Schiavo-Campo and Tommasi, 1999). Often, transactions made from these funds are not classified according to the same criteria as budgetary expenditures, hampering a sound analysis of the government expenditure programmes. Separate accounting and audit scrutiny increase the cost of overseeing programmes financed by earmarked funds. To make it easier for the authorities responsible for public finance, environmental authorities should ensure that accounting and reporting is based on the same standards as in budgetary or other established institutions, for which a clear legal basis and auditing procedures are well established. Environmental ministries should enforce strict rules of expenditure control, accountability and transparency. External, regular audits of financial management of all autonomous funds and special accounts need to be performed according to acknowledged standards, and their results should be disclosed to public, parliamentary scrutiny and to control by the fiscal authorities.

Extra-budgetary funds increase the uncertainty of the estimates of public sector expenditures, making macroeconomic programming more difficult. To combat this, strict transparency needs to be enforced and an accrual accounting system needs to be gradually introduced. Medium-term financial forecasts need to be carried out including contingent and implicit liabilities. The same expenditure classification system as other government programmes (budget) should be followed.

Earmarking breeds vested interests and increases the risk of corruption and waste. Therefore, strict rules of expenditure control, accountability and transparency need to be enforced.

Once created, earmarking is difficult to phase out. Activities that would not normally survive the scrutiny of a regular budget process often continue, by their own inertia or vested interests. Therefore, it is essential to incorporate from the outset legally binding termination dates and/or sunset clauses for earmarking and for all extra- or semi-budgetary funds.

Earmarking used for environmental programmes tends to spill-over to other sectors by the demonstration effect, leading to budget fragmentation, myopia of a myriad of separated budgets and therefore more difficult economic management. Extra-budgetary funds in one ministry is often used by other ministers to “justify” their right to earmark revenues and set up their own special funds. Therefore, environmental policy-makers should always limit earmarking arrangements to environmental programmes that cannot possibly be implemented without earmarked revenue. The arguments against earmarking and possible mitigation measures are summarized in Table 3.

Table 3. Weaknesses of Earmarking and Minimum Mitigation Measures

<i>Arguments against Earmarking</i>	<i>Minimum Mitigation Measures</i>
Undermines allocation efficiency	Transparent prioritization of environmental programmes based on objective rules (CBA), no internal earmarking
Spills-over to other sectors leading to budget fragmentation and disability to manage the economy	Only for unique environmental programmes (externalities, public goods, high social cost, irreversible impacts )
Segments some public expenditure outside the discipline of the budget and the jurisdiction of the legislature	Strict rules of expenditure control, accountability, transparency
Uncertainty of estimates of public sector expenditures, macroeconomic programming difficult	Transparency and accrual accounting system, medium-term financial forecasts including contingent and implicit liabilities
Breeds vested interests, increases the risk of corruption and waste	Strict expenditure control, accountability, transparency, auditing
Once created difficult to phase out	Binding termination dates, sunset clauses

### Earmarking for environmental expenditure

Public environmental expenditures in transition economies have not always benefited from earmarking. Almost all countries earmark pollution charges and other quasi-fiscal instruments for environmental purposes, but only few earmarked environmental funds succeeded in attracting significant revenues. Environmental authorities in transition economies have not yet tried the alternative of shutting down ineffective, "virtual" funds and improving budgetary expenditure management. The proposition that the volume of environmental expenditures could actually increase under general budget financing have not been empirically tested in transition economies, although the case of Mexico indicates that sometimes it may be the case. By the same token, there is no empirical basis to support the alternative proposition that public environmental expenditures would necessarily decrease without earmarked environmental funds.

The use of earmarked expenditure arrangements or extra-budgetary funds in the public sector entails social costs, which need to be explicitly acknowledged. Even if it may not always be a net welfare cost to society, earmarking introduces cumbersome disturbances for ministers responsible for public finance and for management of the economy. Therefore, when existing budgetary procedures are inadequate to manage certain activities, the optimal (first-best) choice is either to improve the budgetary procedures and/or to set up specific procedures for those particular activities, but not to place the activities themselves outside the budget. A menu of possible institutional options can be found in the concluding section. If environmental policy-makers find earmarked or extra-budgetary funds indispensable to achieve their policy objectives, they should always consider measures to mitigate the damaging effects to the fiscal system and to society in general and apply the good practices of public environmental expenditure management contained in the concluding section.

### C. Additional Conditions for Achievement of Public Expenditure Goals

Fairness and equity conditions imply that public expenditure schemes should not be discriminatory, and not regressive. When conflict between efficiency and equity occurs, compensation schemes for poor households should be well targeted exclusively to explicit beneficiaries and designed without undermining environmental effects (for example, lump sum transfers or income supports are usually better than blanket price subsidies).

Consistency (predictability) results primarily from the rule of law and regulations that are clear, known in advance, and uniformly and effectively enforced. Public finance schemes should not change erratically, discretion should be avoided, promises should be kept. Lack of predictability of financial resources undermines strategic prioritization and makes it hard for public officials to plan the provision of services (and is also an excellent alibi for nonperformance). Predictability of government expenditure in the aggregate and in the various sectors is also needed as a signpost to guide the private sector in making its own production, marketing, and investment decisions.

Non-intrusiveness calls for environmental finance schemes not to create excessive distortions in the economy. Public support should be targeted exclusively to the correction of externalities without distorting or threatening to distort competition by favouring certain undertakings or the production of certain goods. Public environmental expenditure should not distort trade, for example, by discrimination related to the origin of the products concerned or abuse as an export subsidy.

And last, but not least, additionality requires that public financing should be used only where finance from private sources is not available to support socially efficient objectives. Public finance schemes should avoid competition with, and crowding out, private sector and existing public sources.

## IV. WAYS FORWARD: GOOD PRACTICES OF PUBLIC ENVIRONMENTAL EXPENDITURE MANAGEMENT

### A. Need for Institutional Reform

Fearing the pain of fiscal consolidation, most environmental policy makers in transition economies have either established earmarked environmental funds or are considering to do so. These funds are sometimes consolidated with the budget, and sometimes are genuinely extra-budgetary.

In the second half of the 1990s, those few funds in the CEE countries that have made the greatest progress in implementing the OECD good practice guidelines are internationally recognised and often were able to attract significant external resources. However, these funds operate in the most successful market reform countries. The transition to a market economy, which was considered as the main, temporary rationale for earmarked, extra-budgetary environmental funds, is coming to its successful end. The funds find themselves under growing pressure to consider post-transition scenarios. The scenarios may include a wide range of options, from “privatising” and transforming into commercial banks, to being fully melted back into the budget and administration.

Other CEE environmental funds as well as almost all, NIS environmental funds have so far not succeeded to be effective tools of environmental policy nor efficient, transparent and accountable instruments of public finance. The great challenge facing these funds that can stay alive will be to improve their performance in terms of efficiency and cost-effectiveness. A great deal of improvement is needed in the area of transparency, accountability, and non-intrusiveness in the private sector.

So far, lessons learned from earmarking for the environment in transition economies are not conclusive. But evidently, earmarking itself has not protected the decline of public environmental expenditure. Environmental ministers are under pressure from their government colleagues and international financial institutions to reconsider if it is worth paying the social cost of earmarking in order to maintain this instrument of environmental policy which has brought so little value-added thus far.

The future of the earmarked funds is best considered in the wider context of environmental and public finance. Subsidies always distort markets and increase public sector deficits. Therefore, the need for environmental subsidies is to be carefully reconsidered in light of the generic “no-subsidy” principle that guides environmental policies in developed OECD countries. A deeper understanding of the scale and the nature of that need may help to target subsidies better so that the public sector funds can bring a

genuine value-added where and when it is really necessary, without obstructing the process of transition to an efficient market economy.

Public environmental expenditure systems in transition economies need several improvements. Adjustments towards the St. Petersburg Guidelines (OECD, 1995a) would be an important first step. Several efforts to strengthen institutions, including ministries and environmental funds, have been, and are still being, undertaken. In this paper we propose a more comprehensive package of good practices in the management system of domestic, public environmental expenditure. They are applicable to systems that may or may not include earmarked environmental funds or any other institutional arrangements, examples of which are listed in section B. Implementing these guidelines could provide for a more complete integration of environmental expenditure management with sound public finance in transition economies.

## B. Institutional Options for Special Public Expenditure Management

Different examples of special institutional arrangements for public expenditure management may include:

- (a) Direct purchase of goods and services by regular staff in government department.
- (b) Project implementation unit established within government departments to implement specific government expenditure programme included in the budget.
- (c) Autonomous/decentralized government agency financed from the budget and created in order to separate the delivery of services or administrative tasks from policy formulation.
- (d) Special purpose fiscal unit granted independent but restricted taxing powers (for example, a river basin water agency or forest agency may be organized along these lines).
- (e) Public utility with authority to collect user charges and responsibility to develop, maintain and operate collective infrastructure (for example, municipal water, solid waste or district heating company).
- (f) Budgetary fund with its own management structure and autonomous earmarked revenue source within the budget. Such a fund may be established within the government at the sector or region level, and sometimes is co-financed by transfers from the general budget. Some environmental protection funds in CEE and NIS countries belong to this category. Other examples include road funds, disability trust funds or social security funds.
- (g) Budgetary fund managed outside of the government, with its own autonomous earmarked revenue source. Such a fund may have independent legal status, although its revenue and expenditure plans are annually approved in the budget law. Its managerial autonomy versus government vary from country to country, ranging from a specialized team within the government department to an autonomous institution. Several environmental protection funds in CEE and NIS countries provide such an example.
- (h) Extra-budgetary fund managed outside of the government with its own, autonomous earmarked revenue source. Such a fund always has independent legal status, and its revenue and expenditure programmes do not require annual approvals in the budget laws, although its budget may be added to the general budget as an annex. Its control by, and managerial autonomy versus government may also vary from country to country. Most autonomous environmental funds in CEE countries (for example, Polish funds) belong to this category.
- (i) Special-purpose public fund (revolving or not) owned by the government, but established outside of government departments and capitalized by discrete budgetary transfers (for example, the Slovenian Environmental Development Fund).
- (j) Intermediary for the government (grant or debt) expenditure programme. Under this scheme, the intermediary bears a contractual obligation to disburse government resources on terms and conditions specified in the agreement with the government. Such expenditure programmes are usually funded by discrete budgetary transfers, but can also be contracted by special purpose fiscal units, autonomous agencies or autonomous funds. Many institutions may act as intermediaries. Government-owned entities (banks, funds or agencies) may be contracted to

disburse grants or soft loans. Private sector entities (banks, leasing companies or investment funds) may also be contracted to provide specific services related to implementation of government expenditure programmes. The range of services provided by the private sector may be very wide, extending from selected elements of project appraisal through full financial intermediation for loan financing (with or without co-financing) to concession for project implementation and operation. The contract may also provide for the interest subsidies paid by the government to cover part of the cost of the loans extended by a commercial bank to targeted beneficiaries and/or for specific types of projects.

- (k) Government owned public funds established to manage expenditure programmes co-financed from external loans or grants. Such funds usually receive matching financing from the general budget or from a specific domestic revenue source. A significant degree of managerial autonomy and insulation from politics is usually required by external financiers.
- (l) Counterpart funds generated by sales of commodity aid need to be managed under specific procedures, taking into account the requirements of the donors.

### C. Good Practices of Public Environmental Expenditure Management

All existing and newly established environmental expenditure institutional schemes, in particular extra-budgetary environmental funds or autonomous environmental funds, need to pass the test of good practices of public expenditure management. These good practices are necessary, but not sufficient conditions to be compatible with sound public finance. Passing each of these tests, however, should be considered as a prerequisite in all earmarking arrangements, autonomous funds, special public agencies or expenditure procedures. Without them such arrangements will inevitably turn into financial and environmental failures. Misuse of public money will be very likely.

#### 1. Public environmental expenditure institutions as environmental policy instrument

- (a) Institutions managing public environmental expenditure should have clear programmes and a set of rules regulating investment decisions. Programmes should have "SMARTT" objectives (specific, measurable, agreed, realistic, time bounded, tough). These programmes should be an integral part of wider environmental policy goals that need to be established through a political process led by the Ministry of the Environment. Environmental expenditure schemes should be effective in achieving their goals.
- (b) Environmental expenditure measures should not be excessively driven by equity considerations if it undermines their environmental effectiveness. For example, a targeted lump-sum compensation to those most affected by environmental policies should replace lowering or offsetting charges for pollution or for the use of environmental infrastructure.
- (c) Environmental expenditure institutions, procedures and criteria should be relatively stable and consistent. Rules should not change erratically over time.
- (d) No public environmental expenditure programme should be launched without solid analysis of whether it is necessary to achieve given environmental policy goals. If these goals are achievable with administrative or economic instruments, or with private expenditure, then public resources should be saved.

#### 2. Public environmental expenditure Institutions as instruments of public finance

- (a) Institutions managing public environmental expenditures should embody clear transparency and accountability systems according to acknowledged international standards even if such systems are missing in the entire fiscal system.

- (b) Public financial resources managed by environmental agencies should always be treated as public resources in the meaning of the laws of public finance, laws on public procurement and state aid as an important precaution against corruption and fraud.
- (c) Public environmental expenditure programmes should not distort competition in the financial market nor obstruct the development of the mature private financial markets (for example, banking sector). Environmental expenditure institutions should never compete with commercial banks and crowd them out of the environmental sector.
- (d) Environmental expenditure programmes should not be regressive, nor should they cause unequitable income redistribution.
- (e) The number of extra-budgetary financial institutions should be kept to a necessary minimum.
- (f) Extra-budgetary institutions should not be legally allowed to assume contingent and implicit liabilities without prior permission of the fiscal authorities.
- (g) No deficit of the extra-budgetary environmental expenditure system should be allowed without explicit prior approval issued by fiscal authorities.
- (h) A transparent system of prioritization of environmental programmes based on clear rules and objective criteria (CBA) should be applied. Internal earmarking should be avoided as it infringes on efficiency.
- (i) Earmarking should be limited to those environmental programmes where payers of taxes/charges are also beneficiaries of programme goals.
- (j) Strict rules of expenditure control, accountability and transparency with regular internal and independent external financial and performance audits should be enforced.
- (k) Strict financial transparency and an accrual accounting system (based on international standards) should be introduced and approved by the finance authorities.
- (l) Explicit liabilities and contingent liabilities should be disclosed in financial statements, and statements on debt and contingent liabilities of all environmental funds should be presented along with the budget of the Ministry of Environment to the Ministry of Finance. Medium-term financial forecasts, including contingent and implicit liabilities, should be regularly conducted and disclosed.
- (m) Regular ex-post reporting, according to a standard expenditure classification system, should be regularly conducted and disclosed.
- (n) Sunset or periodic review clauses for earmarking should be mandatory and need to be specified in legal acts.
- (o) An estimate of the revenue and the corresponding expenditures of all extra-budgetary funds and government controlled entities should be provided in the budget, at least as an annex.

### 3. Public environmental expenditure institutions as fund managers

- (a) Institutions managing public environmental expenditure should have a sufficient degree of managerial autonomy over the selection of specific projects and beneficiaries, as well as clearly defined lines of responsibility and strong accountability for performance (managers cannot be held accountable unless they have clearly defined responsibilities and clearly specified performance indicators).
- (b) Institutions managing public environmental expenditure should use objective criteria and a competitive framework for the choice of projects and beneficiaries. The criteria and procedures should be specified in the legal documents and/or operational documents and should be binding and accessible to the public.
- (c) Allocation/appraisal criteria for public support to environmental projects should be specified in the legal documents and/or operational documents; they should be binding and accessible to the public.

- (d) Environmental expenditure programmes should ensure cost-effectiveness (minimising costs of achieving environmental policy objectives) in allocation/appraisal criteria through legal requirements and/or incentives for institutions and persons. Cost-effectiveness should be a prominent performance indicator of individuals and organizations with respect to expenditure programmes and individual projects.
- (e) The amount of resources, sophistication of operations and financial instruments should be adjusted to the institutional capacity to manage associated risk. Unless capacity is developed, risky instruments and operations should be prohibited. External entities may be contracted to provide certain services through a competitive process.
- (f) Environmental expenditure institutions should monitor subsidy equivalents in all financial instruments and should not provide excessive subsidies more than absolutely necessary to make the project financially viable to beneficiary given prevailing market conditions.

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