Innovative Mechanisms to Manage Public Environmental Expenditure in the Countries Undergoing Transition to Market Economy (CEE, NIS, China)

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The views expressed in this paper are those of the author and do not necessarily reflect those of OECD or its Member countries. The work on this paper is still in progress and the author would welcome your comments to grzegorz.peszko@oecd.org.
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>Bln</td>
<td>Billion</td>
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<tr>
<td>CEB</td>
<td>Central Europe and Baltic (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia)</td>
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<td>CEE</td>
<td>Central and Eastern Europe</td>
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<tr>
<td>CBA</td>
<td>Cost-Benefit Analysis</td>
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<tr>
<td>CPPI</td>
<td>Center for Project Preparation and Implementation (Center for Preparation and Implementation of International Projects on Technical Assistance)</td>
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<td>EAP</td>
<td>Environmental Action Programme for Central and Eastern Europe</td>
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<td>EAP Task Force</td>
<td>Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe</td>
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<td>EBRD</td>
<td>European Bank for Reconstruction and Development</td>
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<td>EIF</td>
<td>Environmental Investment Fund</td>
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<td>ERM</td>
<td>Environmental Resource Management (UK Consultancy Firm)</td>
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<td>ERR</td>
<td>Economic Rate of Return</td>
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<td>EU</td>
<td>European Union</td>
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<td>EU PHARE</td>
<td>EU Technical Assistance Programme for Central and Eastern Europe</td>
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<td>EUROSTAT</td>
<td>Statistical Office of the European Communities</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>FEF</td>
<td>Federal Environmental Fund of the Russian Federation</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>IFI</td>
<td>International Financial Institution</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>IRR</td>
<td>Internal Rate of Return</td>
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<td>NEAP</td>
<td>National Environmental Action Programme</td>
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<td>NIS</td>
<td>New Independent States (12 countries of former Soviet Union except new Baltic states)</td>
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<td>NMCB</td>
<td>Non-member Countries Branch at OECD Environment Directorate</td>
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<td>NPAF</td>
<td>National Pollution Abatement Facility</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>PAC expenditure</td>
<td>Pollution Abatement and Control expenditure</td>
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<td>PIP</td>
<td>Public Investment Programme</td>
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<td>PPC</td>
<td>Project Preparation Committee</td>
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<td>PPP</td>
<td>Polluter Pays Principle</td>
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<td>PROEKO LTD.</td>
<td>Polish Environmental Consultancy Firm PROEKO</td>
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<tr>
<td>Abbreviation</td>
<td>Definition</td>
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<td>SEMARNAP</td>
<td>Secretaría del Medio Ambiente, Recursos Naturales y Pesca Ministry of Environment, Natural Resources and Fisheries of Mexico</td>
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<tr>
<td>SMART objective</td>
<td>Specific, Measurable, Accepted, Realistic, Time-Bound</td>
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<td>SMEs</td>
<td>Small and Medium Enterprises</td>
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<td>UN ECE</td>
<td>United Nations Economic Commission for Europe</td>
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<td>USA</td>
<td>United States of America</td>
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<td>USAID</td>
<td>US Agency for International Development</td>
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<td>USD</td>
<td>US Dollar</td>
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EXECUTIVE SUMMARY

1. In most countries undergoing transition to market economy, public environmental expenditures, measured by different yardsticks, are lower than in mature market economies. A number of explanations of this fact have been identified in the literature. It was observed for example, that poor people do not value clean environment high relatively to other goods. As the incomes grow in transition economy countries, their citizens are expected to allocate a larger share of their public budgets to improve environmental quality. Another standard argument points out that relatively immature governments commit a failure by not correcting market imperfections related to environmental externalities and not providing socially desirable levels of environmental public goods. This paper discusses these and other arguments but goes on exploring yet another possible explanation. It argues that public institutions managing public environmental expenditure in transition economies may have attracted few resources also because they have not always operated according to acknowledged standards of sound public finance.

2. The focus of the paper is on public, domestic mechanisms managing public environmental expenditure in transition economies. Special attention is paid to government controlled earmarked tax funds that have been established in almost all the countries of Central Europe and Baltic (CEB) and the New Independent States (NIS) and in China. These mechanisms have no close equivalent in mature market economies. Over the last decade, public debate on environmental financing in the CEBc and the NIS was concentrated on environmental funds due to their distinctive role played in a few countries of the region.

3. The annual disposable resources of these funds ranges between 1.5 – 2 Billion USD. The total volume of annual revenue of all environmental funds in CEE is estimated to exceed USD 1 Billion in 1997 (over USD 13 per capita). About two thirds of this amount account for Poland. In the NIS the aggregated revenue of all public funds probably exceeded USD 100 Million (USD 0.4 per capita), however part of it may still be in non-monetary form. The total revenue of Chinese environmental funds amounted USD 590 Million in 1998 (USD 0.5 per capita).

4. This paper reviews available empirical information on performance of environmental funds and concludes that a few funds can be called success stories. In the majority of the CEBc and the NIS, environmental funds remain insignificant, and sometimes problematic, players in financing environmental expenditure. The focus on funds in these countries has often been disproportionate to the role they actually play and may have prevented the development of more effective institutional arrangements for managing public environmental expenditure. This paper, however, does not advocate elimination of environmental funds as a matter of principle; rather it calls for the revision and more precise definition of their “niche” vis-à-vis other environmental financing institutions. It also calls for their institutional reform in the context of the broader system of environmental finance.

5. Despite acknowledged problems, these few “success stories” have demonstrated that government controlled environmental funds can be made economically efficient, fiscally sound and environmentally effective financing mechanisms in countries coping with environmental problems of transition. If properly designed and managed they can also be part of the process of building efficient market institutions. The essential design characteristics and minimum performance standards of successful public environmental funds were first outlined in the "St. Petersburg Guidelines on Environmental Funds in a Transition to a
Market Economy” prepared by EAP Task Force and endorsed in the framework of Environment for Europe process in 1995.

6. Five years after the endorsement of the St. Petersburg Guidelines, the situation in transition countries has evolved considerably. During this period, they have all struggled to achieve economic stabilisation and fiscal consolidation, though with different degrees of success. All countries, however, have painfully recognised the importance of establishing healthy and sound system of public finance, as an essential element in the successful transition to a market economy. Environmental funds are typically a small player in the national environmental finance system, which is an integral and typically small element of the public finance system. Therefore, at the end of the first decade of transition it is unnecessarily restrictive to limit the debate to environmental funds only. The fundamental challenge is to look beyond funds and to integrate all environmental finance institutions and mechanisms with the system of public finance. Environmental finance mechanisms will not be effective if they undermine the fundamental goals and principles of public finance; indeed in such cases they will eventually be abolished. Environmental authorities need to develop tools for managing public environmental expenditure which effectively improve environmental conditions and at the same time contribute to the solution, and not to obstruction, of the goals of the public finance.

7. The major goal of this paper is to provide a comprehensive framework for integration of mechanisms managing public environmental expenditure into the sound public finance. The focus of this paper is on the expenditure side of public finance, and not on the revenue side. Integration can be measured by applying checklists of Good Practices to mechanisms managing public environmental expenditure.

8. The paper has three sections. The first section provides an economic approach to environmental finance problematique. Its main goal of this section is to outline the conceptual framework for environmentalists and economists to understand each other. This chapter reviews the welfare economic arguments in favor of government intervention in environmental issues due to externalities and environmental public goods. It provides a rationale for the common approach to government intervention agreed among OECD countries, based on the “no-subsidy” philosophy of the Polluter Pays Principle (PPP). Exceptions to PPP, justified in particular in transition economies are acknowledged. The economic analysis of the distinct roles of the government and the private sector in financing environmental improvement is presented. This is followed by a discussion of the differences between public financing of environmental sector versus other socially important sectors, such as health care or education.

9. The second section provides a background for public environmental expenditure in transition economies. This sets the context for the operations of environmental funds. It describes the nature of environmental financing needs in transition economies as compared to developing countries. The priority environmental projects in transition economies are usually of a “brown” type and involve large capital investments in pollution abatement in industry or rehabilitation of large-scale infrastructure facilities. This contrasts with many developing countries where the level of industrialisation is low and urban infrastructure needs to be developed from very low levels of service. Thus the major challenge is to conserve rich biodiversity resources and develop infrastructure.

10. Section III contains an empirical analysis of the experience of transition economies with environmental earmarked tax funds. The geographical coverage of this paper includes countries of Central, Eastern Europe and the Baltic area (CEB), Newly Independent States of former Soviet Union countries (NIS) and China. This section is concluded by the remarks on lessons learned and implications for the future of environmental funds in transition economies.
I  ENVIRONMENTAL FINANCE IN THEORY OF ECONOMICS: THE ROLE
GOVERNMENT AND THE PRIVATE SECTOR?

A. Market Failures, Role of the Government and the Public Sector

11. Even in the most mature economies, the volume of environmental investments, hence the demand for financing of environmental projects, is usually sub-optimal on unregulated markets because the investors who have to bear all project costs and risks cannot 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 such 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 (the so-called "win-win" projects) (Peszko and Zylicz, 1998).

12. Public sector finance has different roles from private finance. Business invests 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. Government undertakes investments because it anticipates future social returns, which may or may not be pecuniary and may or may not necessarily accrue to the government. Government investment is successful when the social rate of return exceeds the social opportunity cost of public funds which is equivalent of the 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 etc., as well as the cost of using distortionary future taxes to service any debt incurred to finance the investment.

13. The public sector is essential in providing public goods and infrastructure in such environmentally and socially sensitive sectors as energy, transport and municipal environmental services as well as forestry and nature protection (Clements et al., 1995; World Bank, 1994). Under “normal” conditions a public good can only be provided by government intervention since a private enterprise would have no interest in products to which access cannot 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 \(^1\) (up to the point of congestion), or because it is difficult or socially undesirable to exclude non-paying users (Buiter, 1999).

14. 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 risk adjusted, financial rate of return exceeds also 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).

\(^1\) A good is rival in consumption if its consumption by one person decreases the amount available for other people.
B. Policy Response under the Polluter Pays Principle

16. The policy response to environmental externalities in OECD countries is guided by the Polluter Pays Principle (OECD, 1972; OECD 1974; OECD, 1992). This principle also provides the framework for environmental finance in market economies (OECD 1992). The Polluter-Pays Principle implies that in general it is for the polluter to meet the costs of pollution control and prevention measures, irrespective of whether these costs are incurred as the result of the imposition of some charge on pollution emission, or are debited through some other suitable economic mechanism, or are in response to some direct regulation leading to some enforced reduction in pollution. In 1991, OECD countries accepted that not only pollution prevention and control costs, but also pollution damage costs, should be borne by the polluter (OECD, 1992). 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 provision of environmental public goods and provide financial assistance in exceptional situations. Therefore, the PPP is essentially a principle of not-subsidising private environmental measures. In the exceptional situations, 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:

- not introduce significant distortions in international trade and investments;
- be limited to sectors which would otherwise have great difficulty complying with environmental requirements; and
- 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.

17. The PPP is a stated policy principle in many countries with economies in transition. Its implementation, however is uneven because it requires a clear separation of the roles the state plays as a source from a regulator of economic activity. In addition, in many countries in the region (e.g. in the Russian Federation), the PPP is becoming reinterpreted in a way that diverges from the OECD tradition. Virtually no attention is paid to the original, and still essential, "no-subsidy" concept of the PPP. Instead, major attention is paid to the 1991 extension to the PPP, which recognised that polluters should also pay the costs of damage caused by their pollution (CPPI, 1998). Making polluters pay the full cost of damages is an ideal, but a very challenging task to implement, in particular if effects of pollution are dispersed, long-term and synergistic. Therefore, environmental policies based on such a “pure” interpretation of PPP are likely to be ineffective. The original meaning of PPP is very pragmatic. It presupposes that governments establish some sort of pollution reduction targets for polluters, who are obliged to achieve these targets at their own cost. Under this original PPP regime, effectiveness of policies can be measured by whether or not these targets have been achieved. Under the “idealist” PPP regime, the underlying objective is “full compensation of all damages” – quite and unachievable task in the first place even in the most advanced OECD countries with very strong enforcement capacity. Idealistic objectives are then
translated into unrealistic requirements established for polluters. It is interesting to observe that often transition economy countries introduce and maintain excessively strict and numerous environmental standards irrespective of administrative capacity to enforce them and irrespective of the polluters’ costs to comply. This inevitably lead to “structural”, permanent state of non-compliance with government requirements. Governments pretend to be stringent, and polluters pretend to comply. Polluters easily demonstrate that government requirements are outrageous and claim subsidies to move ahead towards impossible. This is how “idealistiс” approach to PPP undermines the original, pragmatic stance of the principle. In such a framework any discussion about specific targets become irrelevant. Efforts become more important than effects. "Polluter pays" becomes equivalent to the notion that polluter should e.g. pay some pollution charges and receive their revenues as subsidies.

18. In industrial OECD countries mature financial and capital markets are expected to respond quickly to the demand for financing pollution abatement and to develop adequate financial products (Kwang, Brewer, 1997; Dasgupta et. al., 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, et al. 1997; World Bank and International Finance Corporation, 1996b).

19. In the transition economies, policy response fully consistent with the strict no-subsidy stance of Polluter Pays Principle is usually not feasible. Due to historical conditions, transitional distortions in public budget management and in the financial markets policy response must usually be realistic rather than ideal (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 require fast response in order to avoid severe human health effects or irreversible environmental damages (World Bank, 1998). Financial and capital markets do not become mature overnight, creating persistent barriers on the side of “supply” of money to infrastructure and environmental investments (Laurson, et. al, 1995). Development of a regulatory framework appropriate in the market economy and strengthening of institutions capable of implementing and enforcing it effectively also takes time (Shaughnessy, 1995).

C. Environment versus Other Public Goods

20. Environmental advocates often say that environment calls for a 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 with allocating budgetary resources to environmental projects, and not only in transition economies, is the lack of clearly defined political constituency for environment that could effectively take part in political bargaining over allocation of government budget (OECD 1995a). Environmental projects, unlike many other investments in social infrastructure (roads, hospitals, schools etc.), often benefit very dispersed individuals and communities (common good problem). Allocation decisions are additionally distorted by inter-community externalities. For example, hospital, roads and water supply benefit directly the community that invests resources. In contrast, wastewater treatment plant yields benefits to neighbouring communities down-stream. In addition, these benefits will accrue in very, sometimes extremely long time (Portney, Weyant, 1999). This intergenerational impacts is a multi-dimensional problem, with strong distributional equity dimension. Effective preventing or mitigating major global environmental problems seems impossible without rich countries bearing most of the costs now in order to provide most of the benefits to the poor countries in very distant future. This is a very unfortunate mismatch. Even without this spatial transfer when projects generate intergenerational benefits, potential constituency for environment can by no means take part in democratic institutions to bargain about them because it is not yet born.
II ENVIRONMENTAL EXPENDITURE IN TRANSITION ECONOMIES

A. Diverging Paths of Transition

21. Transition economies share the common legacy of planned, inefficient economy. However, after more than a decade of a transition period, at the beginning of the XXIst century this group of countries became very heterogeneous. Some of them, concentrated in Central Europe and Baltic (CEB) area, have made leapfrog to a market economy, parliamentary democracy and the rule of law. Most of them joined OECD and are in the eve of becoming a full member of European Union.

22. Access to capital in the CEB countries has improved in the last decade although these countries are also on the course of tight monetary policies and painful fiscal consolidation. However, not only the fiscal systems in CEB are stronger, but also municipal finance and utilities have undergone radical reforms and are now able to support financially operation, maintenance and increasingly also development of municipal and environmental infrastructure (EBRD, 1999b). CEB countries were often more successful than the NIS in providing liquidity to the economy by removing obstacles to trade and bank credit, barriers to entry, especially for small and medium enterprises (SMEs) and foreign firms, barriers to foreign direct investment (FDIs) and to long term foreign capital investments (OECD, 1999c).

23. The other countries of Central and Easter Europe (CEE) and the Newly Independent States (NIS) have made much slower progress in transition. (EBRD, 2001) Opening borders to foreign trade and investments have led to significant changes in the structure and direction of trade and the inflow of foreign capital. The change in the structure of production has been dramatic. Several countries in South-East Europe (SEE) have been struggling with the legacy of the military conflicts and the civil wars of the last decade. In Southern and Eastern Europe the infrastructure was often devastated by wars and requires massive reconstruction. Countries of the former Soviet Union, which are rich in natural resources (Russia, Ukraine, Azerbaijan etc.) have been struggling with ineffective structural reforms, macroeconomic destabilization, poor governance and capital flights, although in recent years they have seen a strong and increasingly broad recovery. Those former Soviet Union countries, which do not have access neither to natural resources, nor to foreign markets became dramatically impoverished. Examples are Moldova, Georgia, Armenia, Kyrgyzstan and Uzbekistan. Their income fell within a decade to the levels of the poorest countries in the World. The group of slow transition countries is challenged by weak fiscal position and severe public sector budget constraints reducing the availability of public finance to all social sectors, including environment (World Bank, 1998). The sovereign risk of these countries is still high, causing constrained access to foreign capital and very high cost of borrowing.

24. The transition path of China has many distinct characteristics. Having had similar to Soviet Union structural characteristics of economy and political system, the country has embarked on ambitious market reforms with less changes in a political system. Densely populated and more developed coastal provinces have attracted a lot of industry and foreign capital. Their regional economies was growing through 90-ties at impressive rates of the economy (8%-10% p.a.) driven mainly by the enterprises and emerging private sector. Southern provinces are traditionally agricultural. However, over 200 million Chinese, many in remote and resource-poor areas in the western and interior regions, still live on less than US$1.00 a day, often without access to clean water, arable land, or adequate health and education services (World Bank web site, 2002).
B. Environmental Expenditure in Transition Economies

25. The main difference in the environmental financing needs between typical transition economies and typical developing countries originates from the different nature of environmental legacy. Transition economies have been heavily industrialised in the past. Urban areas have enjoyed intensive municipal and environmental infrastructure, such as water supply and sanitation, waste management, public transportation and roads. It is common for cities to have centralised district heating systems. The rates of coverage by municipal infrastructure services are often similar to the most advanced OECD countries. On the other hand these countries host vast reserves of pristine nature including less intensive agriculture practices that have not destroyed biodiversity of rural areas as in most industrialised OECD countries.

26. The priority environmental projects in transition economies are usually of a “brown” type and involve large capital investments in pollution abatement in industry or rehabilitation of large-scale infrastructure facilities. This contrasts with many developing countries where the level of industrialisation is low, urban infrastructure needs to be developed from very low levels of service, and the major challenge is to conserve rich biodiversity resources.

27. The countries of Central Europe and Baltic area have been able to maintain and even increase already quite high level of municipal and environmental infrastructure services. Sub-national (usually municipal) authorities (re-) gained ownership of utilities and 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 budget allocated to utility services 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, 1997a). There is also a growing evidence that the affordability problem can be localised and a great part of population is both able and willing to pay more for better access to municipal and environmental infrastructure services.

28. In many countries of the former Soviet Union a combination of inferior design, poor construction quality and lack of funds for capital investments and maintenance during the last 10 years have resulted in accelerated depreciation of extensive and very inefficient municipal and environmental infrastructure inherited from communism. Most of these facilities, such as water supply and wastewater treatment systems, were carelessly designed by central planners with no consideration for the subsequent costs of operation and maintenance. NIS is probably the only region in the entire World where the level and quality of environmental infrastructure services has been dramatically decreasing in the last decade. Access to financing of municipal and environmental infrastructure (water, transport, district heating, waste management) has been further constrained by the little progress, which was made with the reform of utilities (mainly commercialisation) and their ability to cover the full costs of their services through user charges. 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 provision of services to non-paying customers.

29. China combines something of both Worlds. The level of municipal and environmental services has increased in the last decade, but from much lower levels than in CEE and the NIS. Take an example of urban waste and sanitation. In large cities most urban population is connected to the sewerage system, but collected wastewater is often discharged directly to surface waters without treatment. Centralised wastewater treatment by urban utilities is a relatively recent development in China. In the early 1980s, there were only about 20 small-scale wastewater treatment plants nation-wide that provided low levels of treatment. Since the late 1980s up to date, about 200 plants have been completed with a daily treatment capacity of about 15 Million tons. This notwithstanding the capacity of urban wastewater treatment facilities is still very low. Only less than one third of all urban effluents are treated. In recent years there has been a rapid increase in capital investments in wastewater collection and treatment – ten-fold between
Daily treatment capacity increased more than four-fold between 1990 and 1998. The ratio of urban wastewater treated increased from 16.2% to 29.9%. Despite these positive developments, wastewater treatment in urban areas remains inadequate. Urban water supply has increased far more quickly than wastewater treatment capacity. For example, between 1990 and 1998 the annual average daily capacity of urban wastewater treatment plants increased by 1.1 Million cubic meters while the urban water supply increased by 8.5 Million cubic meters in the same period, almost 8 times more.

30. In China urban water supply utilities rely mainly on government financing for their construction and management. These funds are mainly earmarked from the levy imposed on urban construction and maintenance projects and income collected by public utilities in cities, plus other financial sources. Only recently utilities began collection of fees from those connected to the supply network. Despite the utilities now having the authority to generate profits, many of them operate at a loss because of constraints on their pricing policies in relation to the level of local economic development, e.g. in poorer provinces. With the reform of these enterprises a priority for the government, the approach to management water supply utilities is changing. According to the “Regulations for Urban Water Supply” adopted in 2001 by the Government the pricing of water shall be determined on the principle that household charges should generate a small profit whereas water used in production and commercial activities shall be priced at a cost recovery level.

31. Inadequate funding of capital investments in sanitation and wastewater treatment is less of a problem compared to the NIS. However, little funding is available to maintain and operate those plants that have actually been built. After completion of construction, the WWT plants are registered as government institutions and funds for their operation and maintenance are allocated from local and central government budgets. Some cities have begun charging for sewage collection and treatment but the charge rates are too low to support the necessary operational and maintenance costs of the facilities, to say nothing of servicing debt. Many cities are unable to set aside sufficient funds from the budget and are unable or unwilling to raise user charges. As a result it is common for wastewater treatment plants -- even those recently built -- not to be operated.

32. Poor policy design, unrealistic investment and financial planning is still an Achilles heel across all transition economies. National Environmental Action Programmes (NEAPs) have been developed in most CEE and the NIS. These programs were often valuable in identifying priority environmental problems. NEAPs often contain specific lists of the most urgent measures required, including investments to address emergency environmental issues in the near term. Unfortunately, contrary to elevated expectations very few, if any, NEAPs have provided a framework for public expenditure management. In particular in the NIS they are not, and were usually not intended to be, implementation strategies to solve priority problems. NEAPs do not include specific, measurable and realistic targets. Estimates of costs and expenditure requirements are not made (with the exception of occasional rough estimates of investment expenditures), plans are not realistically linked to finance, and affordability issues are not addressed. NEAPs were often too ambitious. They were generally based on the assumption that finance would be available for all capital investments needed to meet the targets, even if the operation and maintenance cost of the action plan was unaffordable for the economy. As a result most government commitments, including environmental programmes remain chronically under-funded. This notwithstanding public agencies have continued to proliferate a great number of new expenditure programmes every year. This has led to institutionalisation of the practice of strategically overestimating expenditure requirements in anticipation that in the event of budget rationing, actual disbursement would be close to what was needed (or wanted).

33. Some transition economies have recently made some steps towards sound and realistic strategic investment planning. In the countries that are candidates to EU accession long term implementation and financing programmes are being developed for each EU environmental act that requires heavy investments. (Commission of the European Communities, 1998). Small Baltic countries established mechanisms of
Public Investment Programs (PIP) through which resources of the central budget are strategically allocated to large infrastructure investments in a mid-term framework. Several Cities in Poland are introducing multi-year investment planning and “task-oriented” budgeting into local government finance.

34. In the NIS, only Kazakhstan has introduced mid-term framework for capital budgeting through Public Investment Program. But some other countries have recently embarked on realistic, long term, investment and financing strategies for environmental infrastructure. Moldova, Georgia, Kazakhstan, Ukraine and two Oblasts in the Russian Federation: (Novgorod, Pskov, Rostov and Yaroslavl) began to elaborate realistic multi-year investment and finance strategies, focused first on the urban water supply and sanitation sector. The Danish Government and the EAP Task Force Secretariat at OECD provided assistance in these efforts. Environmental Financing Strategy is the standardized methodological framework supported by the computer model (FEASIBLE®) that serves as a realistic substitute for central planning and micro-management of project-specific pipelines of investment projects. Financing strategies provide a bridge between general environmental programs and every-day decisions about how to use next year’s budget for supporting individual infrastructure projects. They should be typically prepared together with implementation programs as the way of testing whether they are financially viable and whether the public sector and the households can afford them. Scenario analysis conducted as part of financing strategy can be used to correct the implementation programs if they appear to be unrealistic. The FEASIBLE® software helps simulate in quantitative terms the consequences of different policy choices. The model assesses the investment, maintenance and operational expenditure that would be required to achieve specific targets. These expenditure requirements are subsequently compared with current levels and sources of finance and the model calculates the resultant “financing gaps”. The financing strategies sensu stricto are put together through series of iterative model runs with different assumptions describing environmental or service level targets and policies to mobilise additional finance. The expenditure requirements are also compared with what the national economy, public budgets and the households could potentially afford to check which policy option is realistic. This exercise is helping decision-makers to assess how to use the limited funds of the public sector to achieve the biggest “bang for the buck” and to mobilise or leverage additional financing from private and foreign sources. It has proven to be a useful tool for dialogue between the Environment Ministries, Health Ministries, Ministries responsible for urban infrastructure and the Ministries of Finance and Economy.

35. 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 (OECD, 1998; USAID, 1996; Peszko and Zylicz, 1998). Foreign aid played a crucial role in selected countries (e.g. Estonia), but overall, transition economies in CEE have never been aid dependent countries (Klassen and Smith, 1995).

In the Central and Eastern European countries, budget transfers for environmental purposes have been gradually getting replaced by private financing and autonomous public environmental funds. For example, in the Czech Republic, government budget share in total environmental financing dropped by
more than half in 1997, compared with 44% in 1992 in 1997 (OECD, 1999d). In the Baltic States, substantial budget resources have been channelled through Public Investment Programmes (PIPs), primarily to support environmental infrastructure investments.

37. In the CEE countries the relative importance of national versus local budgets varies from country to country, reflecting among other the relative autonomy of local communities and the strength of municipal finance. In 1994, local government in Hungary provided 79% of budgetary pollution abatement and control (PAC) investments, compared with 21% from the central government. In 1996, local governments in Poland provided 84%, against 16% from the central budget. In Lithuania, however, local government provided only 3% of PAC budgetary investments and the central government 97%.²

Figure 1. Environmental Investment Expenditure by Source of Financing in Selected Transition Economies [TO BE UPDATED]

Sources: OECD ENV/NMHC common database; for Belarus: OECD 1997; for Ukraine: UN ECE 1999. For Czech Republic data for 1997, provided by the Ministry of Environment

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

38. In China traditionally municipal and environmental infrastructure (e.g. sewerage systems and the wastewater treatment plants) were regarded as public goods and were financed and built solely by the government. Now the majority of urban wastewater treatment plants are still funded by the government at different levels, but increasingly foreign government and IFIs loans are become a source of funding. Some provinces have also attracted foreign private equity and debt to finance construction and manage operations of water supply firms. Some sources report information on public-private-partnership schemes schemes in wastewater treatment, but this information needs to be confirmed.

² 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. Source: OECD 1999d.
III ENVIRONMENTAL FUNDS IN TRANSITION ECONOMIES

A. Typology of environmental funds

39. TO BE ADDED

B. Objectives, value added and the role of earmarked tax funds in environmental financing

40. Numerous barriers to adequate budgetary appropriation for environment purposes have motivated many environmental ministries in transition economies to turn to earmarking existing environmental charges and fines to environmental purposes and manage the expenditure side outside of the budget. 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. The stated mandate of environmental funds is focused on managing the expenditure (appraisal and selection of projects). However, most environmental funds in the NIS and China are predominantly preoccupied with collection of revenues or assistance in revenue collection. OECD reviews have identified the cases where a significant share of the fund budget is used for activities related to revenue collection, with little money left for supporting environmental improvements.

41. Comprehensive environmental earmarked tax funds are domestic public entities that use revenue of various compulsory payments for use of environmental resources to support a wide range of environmental improvements in both 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. In China there is a combined system of regional and local environmental funds. In the Czech Republic, in addition to comprehensive National Environmental Fund, there is an extra-budgetary National Property Fund. Its revenues are derived from the privatisation proceeds, and expenditures are used to co-finance clean-up of past environmental damages on the property that has been privatised. There is no exact equivalent to the CEEC/NIS environmental funds in "old" OECD countries. Some institutions have similar characteristics, although they are not comprehensive, but sector specific, with targeted mandates (e.g. the French or Dutch water agencies, the Superfund in the USA) and time limited (e.g. the French agencies, managing revenues from air pollution and noise fees, were phased out before 2000). The government of Austria has contracted a commercial bank and Germany - state-owned banks - to manage soft-loan programmes to support municipal environmental infrastructure investments.

42. 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 constraint, would augment the role of private financing (Panayotu, 1997). Also, tightening budget constraints in the public sector would contribute to improved cost recovery in provision of environmental services by utilities (Gentry, 1997). In particular, in the CEE countries, the main bottleneck to environmental finance is lack of 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.

43. In some CEE countries, environmental funds have played an important role in financing environmental expenditures. In Poland, they financed about 30% of environmental investments in 1998 (down from their earlier level of more than 50% in the beginning of the 90s) and in Hungary, Lithuania
and Slovenia about 20% (OECD, 1999d). In the Czech Republic in 1997 environmental funds have accounted for 7.5% of the supply of finance for environmental investments (information provided by Mr Hajek from the Ministry of Environment). In Bulgaria the share of funds in financing total environmental expenditure was negligible, only 0.13%-0.26%, although weak data were available on environmental investment expenditure (Ministry of Environment and Water of Bulgaria, 1999; COWIconsult, 1999).

44. In the NIS the role of funds versus other sources of environmental financing was rather small. For instance, they covered only about 6% of environmental investments in Russia (OECD 1999a; Goskomekologia, 1997), about 3% of environmental expenditure in Moldova (COWIconsult, 2000), and less than 0.5% in Ukraine (UN ECE, 2000). However, non-proportionally great attention has been paid to these funds in debates on environmental policies in the NIS.

C. Environmental Funds in CEE and NIS

1. Legal status

45. The legal basis of funds ranges from a decree of the Ministry of Environment (e.g. Lithuanian Environmental Investment Fund (EIF), through a Government Decree (Russian Funds, Latvian Environmental Investment Fund), to the Parliamentary Act (e.g. Poland, Czech Republic, Hungary). Funds established by the latter are generally stronger and more stable than those established by government executive 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 Environmental Development Fund is a joint-stock company registered under the Slovenian Commercial Code. The Lithuanian EIF has been registered under the Law on Public Enterprises as a non-profit enterprise and the Latvian EIF - 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 special parliamentary acts or by the Act on Environmental Protection. In most CEE and NIS countries the environmental agencies, supervising the funds, have faced growing pressures from Finance Ministers to consolidate independent funds into budgets and increase the financial scrutiny of their operations.

46. In some countries this has already occurred. For example, in Bulgaria, Ukraine and several regions in Russia environmental 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 subordinated to the administrative structure of environmental authorities, without independent management, staff and balance sheet. The Russian Federal Environmental Fund (FEF), for instance, is incorporated into the federal budget through an earmarked account and virtually all regional funds are consolidated into the budgets of regional administrations.

47. Apart from obvious drawbacks from the point of view of flexibility and operational efficiency, budget consolidation has brought a few advantages. In some regions of the Russian Federation, for example, consolidation has helped prevent the revenues from disappearing since tax authorities have become involved in collection of environmental fees and fines. Incorporation of the Funds into the budgetary cycle of regional administrations has also enabled the tax authorities to directly withhold charge payments from enterprises’ bank accounts if these payments were delayed. Budget consolidation has further enabled tighter supervision of the funds by financial authorities and has enhanced financial discipline in the public sector, which is not particularly known for accountability and efficiency (PROEKO, 1998).
2. Management

48. The legal foundation and institutional set-up of the funds have not always ensured their operational integrity, i.e. freedom from political interference in the 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 performance of institution. Violations of the principle that those who supervise should be separate 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, IFIs) have helped in effectively shielding the Funds from political interference in specific allocations. The Polish and Bulgarian debt-for-environment funds or the Slovenian Environmental Development Fund are usually quoted as examples of this phenomenon. Management autonomy of the funds that manage only domestic resources is 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 misuse of public funds.

49. In the most successful funds the role of the responsible government body (e.g. Ministry of Environment) is limited 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 funds. But the appraisal and financing of individual projects are vested with an independent management unit, strongly held accountable for performance.

50. Funds that are not legally independent usually have access to various departments of the environmental administration which carry out the day-to-day operational and project cycle management. Only rarely have the Ministry staff revealed high competence in project development and financing, as in the case of 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 Environmental Fund in the Russian Federation is perhaps an exception. Environmental funds in the NIS suffer from political pressures limiting their managerial autonomy and resulting in a low level of performance (OECD, 1998c; OECD, EU-PHARE, 1999). As the case of the Polish National Fund for Environmental Protection and Water Management shows, however, an independent legal status and extra-budgetary character do not per se shield the fund from political interference in the selection of individual projects.

3. Revenues

51. The amounts of revenues administered by the environmental funds give some illustration of fundamental differences between different institutions. 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 USD 720 Million, or 9.44 USD/capita. In contrast, the corresponding figures for the eight NIS “national” environmental funds surveyed, were about USD 36 Million, or USD 0.16/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 (~USD 18 Million), for instance, exceed the combined revenues of all other national funds in the NIS for that same year (~USD 17 Million). In the whole region, however

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3 These figures exclude the Polish and Bulgarian Debt-for-Environment Funds.
4 Some regional funds in the NIS were nominally larger than national funds. For example, the Environmental Fund of the Republic of Tatarstan reported nominal revenue of USD 48 Million (PROEKO, 1998).
Poland’s National Fund stands out with its 1997 revenues of about USD 403 Million, surpassing the aggregate revenues of all other national funds taken together.

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

53. Environmental funds are usually capitalised by current revenues from earmarked charges and fines on pollution (e.g. air emissions and wastewater discharges), as well as from charges on natural resource use (e.g. water consumption, mining) and particular products (e.g. fuel, packaging). For some funds (in Slovenia, Estonia and the Czech Republic), proceeds from privatisation have provided significant revenues. A few funds (e.g. in Poland and Russia) have generated substantial profits from their operations on 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% 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, Lithuanian and Latvian Environmental Investment Funds and the Polish National Environmental Fund have been used as intermediaries by foreign financing institutions (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 without having succeeded in disbursing most of the available resources, however.

54. The 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 despite extremely low charge rates. For example, according to the Ministry of Environmental Protection and Nuclear Safety of Ukraine, (1999b), only 19.4% of the revenue due to Ukrainian Funds was collected in 1998. The revenue base of the NIS Funds is further eroded by high inflation and ineffective indexing of the charge rates (Golub, 1998). Pollution charge offsets and the widespread use of money surrogates (See Table 1), as well as generally excessive discretion and opportunities for individual bargaining further undermine the disposable resources of NIS Environmental Funds creating in addition institutional vulnerability to corruption.

55. In CEE the revenue collection is conducted by fiscal or financial authorities assisted by environmental administration. The staff of Environmental Funds can be solely focused on expenditure management. In contrary, in the NIS the mandate of most environmental funds includes revenue collection, and much of the administrative resources and staff time is diverted away from project cycle management.

4. Expenditure

56. The expenditure focus of the funds varies among countries and institutions. Pollution abatement investments in the air and water sectors are accounted for the lion shares of the expenditures of funds in the CEE countries. 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.

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

58. Environmental funds in the transition economies of CEE and the NIS actually pose 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 case of small revenue). There were a few forewarning 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 funds obligations. Such implicit liabilities may stem from people’s expectations fuelled by the generally soft budget constraint in the public sector.

5. Disbursement Instruments

59. In CEE, grant financing, initially a principal disbursement mechanism used by CEE environmental funds has been increasingly 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.

60. 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 have been 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 was always dependent on whether servicing banks were selected through competitive processes. The Slovenian Fund and some Polish regional funds have selected the banks through competitive tenders and obtained better conditions at lower cost than for example Polish National Fund, which for 10 years was serviced by a single bank, of which the Fund was both founder and a major owner. This has changed in the end of 1990-ties. In order to improve its loan performance the Slovenian Fund maintains strong in-house human resources for loan management. The Polish Funds use "carrot" in the form of an option, offered to Funds’ clients, to convert a part of the loan principal into a grant at the end of the repayment schedule, if the loan servicing has been undisturbed. The limited experience with loan guarantees and equity has been mixed so far. For example, over-commitment of loan guarantees and forward commitments of grants (in lieu of expected revenue) has caused serious liquidity risk to the State Environmental Protection Fund of the Czech Republic and has triggered management replacement.
61. NIS funds have provided finance mostly in the form of grant. The stark exception is the Russian FEF investing almost half of its resources as equity in private, usually resource-recovery, firms (OECD, 1998d). Direct loans have been used by 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. The variety of disbursement instruments available to funds has potential advantages (like flexibility with respect to project needs and a potential to replenish the funds’ disposable resources) but it carries a high price tag as well. It is important for these instruments to be adjusted to the institutional and managerial capacity of the funds. Usually, it is best to first allow the fund to use simpler instruments, such as direct grants and interest subsidies so that it can accumulate experience with financial management, contracting, project appraisal and implementation monitoring. These instruments for disbursing subsidies are also the most transparent. Major financial failures have occurred when newly-created, understaffed funds have issued resource intensive financial products such as direct loans, equity or loan guarantees. Unless a loan department is created (at least 2-3 experienced credit analysts) to analyse the creditworthiness and collateral of borrowers, or this task is contracted to commercial banks (for a fee), a loan portfolio would usually, quickly turn into a stock of worthless assets. More sophisticated disbursement mechanisms are not so transparent and the ‘subsidy-equivalent’, offered to a beneficiary, is rarely calculated, which makes it difficult to measure and therefore, achieve cost-effectiveness.

62. It is important that these disbursement instruments are also adjusted to the needs of the projects that will be financed. Some funds have found it difficult to disburse their 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 also have been cases, when funds have sprinkled grants so thinly among various projects for equity reasons. And because of the lack of a full financing package only few of these grants have actually triggered projects’ implementation.

63. The experience of environmental funds in the CEE countries indicates that contracting due diligence to and sharing risk with commercial banks have been a good tool to mitigate hazards connected with issuing soft loans. The most successful environmental funds in Poland, for instance, retain full responsibility for appraisal of the environmental and technical feasibility of the investment projects they finance, including verification of the project’s cost-effectiveness and project’s (not borrowers’) cash-flows (Peszko and Zylicz, 1998). The banks are contracted (and paid) by the Funds only for the analysis of the borrowers’ creditworthiness and collateral. The typical risk sharing agreement between the bank and the fund has been 50%-50%, which has proven to provide sufficient incentive for the bank to use sound, conservative banking principles. Such an arrangement has also allowed the fund managers and stakeholders to retain control on the project appraisal, implementation and monitoring of environmental benefits.

64. Very few funds have been given explicit mandates to leverage private sector finance for environmental projects (Peszko and Zylicz, 1998). The Lithuanian EIF and the Polish Debt-for-Environment Fund are among the notable examples of a successful market creation by environmental funds introducing such instruments as matching grants (i.e. grants that cover not more than specified, small percentage of capital investments). The Polish National and regional funds have had a successful track record of leveraging bank credit (including micro-credit) to environmental investments through interest subsidies, despite the lack of explicit mandate. However, in most Funds in the region, and 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).

65. Several CEE 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 those countries that are most successful in market reforms and economic development, such as Slovenia and Poland. An important indicator of their successful transition is the growing maturity and stability of their
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

66. The absence of strategic spending programmes and of transparent, rigorous project selection criteria is often the Achilles’ heel of environmental funds in the region. In most cases the idea of creating an organization and setting aside a pot of money 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 SMART (where this abbreviation stands for Specific, Measurable, Accepted, Realistic and Time-bound). Instead, the funds typically have (far too long) lists of vaguely specified tasks, which cover almost all possible environmental issues. Only in very few cases (e.g. the Polish and Bulgarian debt-for-environment Funds, the Slovenian Fund and the Lithuanian EIF) the mandates of the funds are more narrowly targeted. The absence of SMART objectives makes it impossible to assign accountability for results and resource use and to evaluate fund’s 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. The 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 an ex ante analysis to determine that such a policy instrument, as an environmental fund, is an indispensable tool to achieve given policy goals. There has been no systematic ex-post evaluation either as to whether the funds have been indeed necessary for attaining any of the environmental results that have been achieved. Questions, such as what would have happened without the funds or could these results have been achieved with other policy instruments, remain unanswered. An interesting exception to this rule was an empirical study by Anderson and Zylicz on applications rejected by the Polish Ecofund and the National Environmental Fund. The authors concluded that without funds some projects would have been abandoned or significantly delayed. However, more disposable resources would probably not lead to more projects, but rather to higher shares of subsidies in the projects that would have been implemented anyway (Anderson and Zylicz, 1999).

67. The most successful funds have a two-stage appraisal process. First, simple appraisal "pass/fail" criteria are applied for initial screening to assess if projects are, in principle, eligible. Subsequently, scoring criteria are used for comparing and ranking all those projects, which have passed the eligibility test. This effectively "screens out" non-eligible projects and saves, both the fund and the applicant, resources. The 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 (the 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). Cost-effectiveness requires a system to measure, verify and allocate resources to those projects for which the discounted, lifetime cost of achieving a unit of environmental benefit over the lifetime of a project is the lowest. For instance, many funds claim they use the cost-effectiveness criterion in project appraisal but at the same time they do not even collect information on lifetime costs and do not use sound cost-effectiveness indicators to compare and rank different projects.

68. Post-project evaluation and monitoring is very weak in the funds in the NIS. Environmental benefits are even rarely measured and recorded (OECD/EU Phare, 1999). Hence, it is difficult to properly
evaluate environmental effectiveness of the Funds and justify them as necessary tools of environmental policies.

7. Environmental Funds and Non-monetary Transactions

69. CEE funds generally operate on cash basis. In contrast, the 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 also anecdotal evidence of using money surrogates. In Russia, often it has been very difficult to distinguish “real” flows of money which can be used to finance projects from “virtual” records of financial flows which actually never reached and never left the funds. Non-monetary transactions have been most common in local and regional funds. The Russian Federal Environmental Fund has maintained 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, involved accepting money surrogates as revenues (vecksels issued by enterprises, banks or some public sector entities) and complex chains of mutual settlements between fund's creditors and beneficiaries (involving barter). Many regional and local environmental funds in the Russian Federation have operated as brokers who clear mutual arrears through exchange of goods or services between enterprises which are Fund's debtors and those that are Fund's creditors. Some funds have accepted swaps of pollution charge arrears for 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 at their market values. Usually it is not possible to determine what are the maturity, liquidity and discount rates 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 in 1997 (in percentage)

<table>
<thead>
<tr>
<th>Fund</th>
<th>Cash</th>
<th>Vecksels</th>
<th>In kind and mutual settlements</th>
<th>Charge offsets</th>
<th>Non-cash total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Fund of Nizhniy Novgorod Oblast</td>
<td>69%</td>
<td>0%</td>
<td>10%</td>
<td>21%</td>
<td>31%</td>
</tr>
<tr>
<td>Government Environmental Fund of Vologda Oblast¹</td>
<td>75%</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>25%</td>
</tr>
<tr>
<td>Environmental Fund of Tatarstan Republic</td>
<td>20%</td>
<td>75%</td>
<td>4%</td>
<td>0%</td>
<td>80%</td>
</tr>
<tr>
<td>Environmental Fund of Sverdlovsk Oblast²</td>
<td>55%</td>
<td>30%</td>
<td>15%</td>
<td>0%</td>
<td>45%</td>
</tr>
<tr>
<td>Environmental Fund of Samara Oblast</td>
<td>71%</td>
<td>0%</td>
<td>0%</td>
<td>29%</td>
<td>29%</td>
</tr>
<tr>
<td>Environmental Fund of Rostov Oblast³</td>
<td>71%</td>
<td>29%</td>
<td>0%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Total revenue³</strong></td>
<td>38%</td>
<td>52%</td>
<td>4%</td>
<td>5%</td>
<td>62%</td>
</tr>
</tbody>
</table>

¹ For Vologda the figure is a consultant's (PROEKO) estimate based on on-site interviews.
² Data for Sverdlovsk and Rostov Funds for 1996.
³ Weighted average.

Source: PROEKO, 1998

70. In many NIS environmental authorities can waive payments of environmental charges if the money is used for internal environmental investments. In general such charge offsets simply reduce the revenue base of environmental funds. Some funds, however, record offsets as their "virtual" revenue (e.g. 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's spending decisions by environmental authorities is very restricted. Few regional authorities – for example in Sverdlovsk Oblast - have made an attempt to control the procedures of fee
allowances but without much success, however. Anecdotal evidence suggests that at least some investments, "financed" through pollution charge offsets, are not environmental by international standards (OECD 1998f; OECD/Eurostat, 1998).

71. Some analysts (e.g. Golub in OECD 1998d; Golub and Kozeltsev in ERM, 1998) have defended offsets on the grounds that they give environmental authorities at least some leverage over firms’ environmental performance. They argue 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 NIS-specific understanding of the PPP (see chapter I) and provide perverse economic and environmental incentives.

E. Environmental funds in China

There are three types of environmental funds in China (Chazhong Ge, Jintian Yang and Jinnan Wang 2000). The first type is represented by environmental protection funds set up at the sub-national levels with the revenue from pollution charges and non-compliance fines. Second type is represented by the funds set up with the loan from the World Bank in a few provinces and cities. The funds in Tianjing and later in Changsha and Shashi belong to this type. The loan is paid back from the revenue collected from pollution levy in these places. The last type has a status of government owned investment company. The Shengyang Environmental Protection Investment Company is one example. Being the governmental institution, the company is not a legally and operationally independent organisation. Since the focus of the paper and the workshop is on domestic environmental financing institutions we will focus on environmental funds of the first type.

72. The origins of the first type of funds date back to the year 1982, when the system of pollution charges and fines was established through the Provisional Regulation of Collecting Pollution Levy, issued by the State Council. Although called "provisional" it has been effective for more than 17 years. Since the beginning, the management of the revenues from the charges and fines was entirely integrated within the government and the state budget. Chinese environmental funds have neither legal entity nor operational independence or autonomy from the governments at the local, provincial, city or county levels. They have status of special budgetary funds. Circular on Adding Accounts for Pollutant Discharge Levy to Balance Sheet, issued by the Ministry of Finance on April 9, 1982, stipulates that revenue account, Item 93: "Revenue from Pollution Levy" should be added to "Other Revenues" on the revenue side of national accounts. On the expenditure side of national account an expenditure account, Item 136-2: "Subsidies for Environmental Protection" was added to "Urban Maintenance Fees" (Department of Laws and Regulations of SEPA, 1993). The circular also stipulated that the revenue from pollution levy belonged to the treasuries of local governments.

73. The role of environmental funds in total environmental financing in China has been significant, but has relatively decreased over time, due to the rapid increase in investment financing made available from other sources. The figure below indicates these trends.

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5 During the Environmental Performance Review of the 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, only 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.
The overall fund created from pollution charges and fines is divided into two main parts: the Fund for Pollution Abatement by Polluters (FPAP) and the Fund for Environmental Management (FEM).

74. **Fund for Pollution Abatement by Polluters (FPAP)** can be used to support pollution abatement projects undertaken by polluters who pay charges. SFPAP can not generally be used to support capital investments in municipal environmental infrastructure such as wastewater treatment plants, water supply or solid water management undertaken by municipalities or municipal utilities. At the beginning, all FPAP resources were provided to polluters as grants. In 1988, on the basis of another temporary decree issues by the State Council, a portion of FPAP (20-30% of non-compliance fine) was set aside to establish soft loan facilities.

75. The loan facilities, established by almost all provincial, city and county government, provide loans to pollution abatement projects of polluters, at preferential interest rates. Loans are registered under investment account of the state budget. The maximum maturity of the loans offered by the soft loan facilities is 3 years with annual interest rate of 2.88%. Commercial interest rates for capital construction projects in 1988 were 9.00% per annum for one-year loans and 9.90% for 1-3-year loans (Handbook of Expenditure Standards, Charge Rates, Interest Rates and Tax Rates for Enterprises and Institutions, 1997). These rates increased later to 12.24% and 13.50% respectively in 1995 and have fallen down to 5.85% and 5.94% respectively in 2000 (Chazhong Ge et. al, 2000).

76. Both revenue collection and project cycles are similar for both windows of FPAP (i.e. for grant and loan facilities) and are linked to the annual budgetary cycle. However, resources that are not spent in a given budgetary year can be carry over to next years. The cycle of collecting and disbursing money looks as follows:

1. Environmental Protection Bureaus (EBSs) at the relevant level of the Government issue monthly payment orders to polluters, according to the monitoring data

2. Polluters to pay transfer the payments to the accounts of Environmental Protection Bureaus (EBSs) within a given period after receiving the order.
3. EPBs transfers all the revenues collected to fiscal institutions (called Financial Bureaus) of different levels according to the ratios determined by regulation;

4. EPBs prepares annual expenditure budget based on the received project proposals from polluters and from administration and submits it for approval by the Financial Bureaus at the respective level

5. Financial Bureaus at all levels verify the expenditure plans each quarter and allocate the corresponding amounts of money to the environmental protection agency after approving the fund utilization plan;

6. EPBs appropriate grants or loans to polluters and environmental institutions according to the expenditure plan;

7. Polluters and environmental institutions spend money according to the budget they submitted;

8. EPBs supervise and evaluate how the allocated resources were used and submit evaluation report to the Financial Bureaus at the same level.

Polluters, who are typically state owned enterprises, submit grant or loan applications not directly to EPBs but to their Sector Administration Institutions for preliminary screening. Screening criteria vary from sector to sector and province to province. There is no standard application form. Each province or city makes its own form. The form normally contains very general, and rather procedural information, such as the name of enterprise, the name of bank for the enterprise and its account number, amount of loan applied, repayment schedule, sources for the repayment in the case of loan, estimates of benefits, periods of project implementation, etc. EPBs finally select projects on the basis of lists submitted by the Sector Administration Institutions and prepare draft budget plans for FPAP.

Private enterprises normally follow the same process, however, they rarely (if at all) receive funding.

Administrative rather economic or environmental appraisal tools and criteria are used in the selection process. Usually very limited information is available to EIBs and Financial Bureaus to make decisions. Individual grants or loans are considered too small (normally tens to hundreds of thousands RMB with exchange rate of about 8 RMB to USD) to require polluters to prepare feasibility study. In making project selection EIBs use rather non-transparent and subjective considerations, such as engineering issues or pollution control priorities. Financial Bureaus do not perform economic or financial analysis. Their role is simply confined to a symbolic of approval of projects if the operations are in accordance with the regulation.

Polluters often perceive FPAP, as extension of their property which should be automatically recycled to them, as grants, without necessarily reducing pollution (Chazhong Ge et. al, 2000). That was the major reason for launching loan facilities. However, loans often are not paid back. If polluters, who are normally state-owned enterprises, have difficulties in paying back loans, they often ask for writing the loan off and Environmental Protection Bureaus usually agree.

During the eighth five-year, FPAP accounted for 19.5% of total investment for industrial pollution control in China. Overall 89,430 pollution abatement projects were supported, which accounts for 69.2% of total number of projects implemented at the same period. The average share of environmental funds in the project capital cost was 20% indicating quite high leverage effect (Yang et al., 1998, and Environmental Yearbooks). The funds have also contributed to the enhanced capacity of environmental agencies, including training and equipment. About 30,000 government people were supported through the environmental funds (Yang et al., 1998).
Table 1. The national trends in using environmental funds from 1991 to 1998 (Billion Yuans, fixed 1998 prices)

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<tr>
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</thead>
<tbody>
<tr>
<td>Total amount of revenue collected</td>
<td>3.9</td>
<td>4.4</td>
<td>4.3</td>
<td>4.0</td>
<td>4.1</td>
<td>4.2</td>
<td>4.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Total amount of funds used (billion yuan)</td>
<td>3.5</td>
<td>4.0</td>
<td>4.0</td>
<td>3.5</td>
<td>3.6</td>
<td>4.0</td>
<td>4.5</td>
<td>4.9</td>
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<tr>
<td>Of which:</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>FFAP (billion yuan)</td>
<td>2.4</td>
<td>2.6</td>
<td>2.4</td>
<td>2.1</td>
<td>2.0</td>
<td>2.3</td>
<td>2.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Direct grants for pollution abatement by polluters</td>
<td>1.2</td>
<td>1.3</td>
<td>1.3</td>
<td>1.1</td>
<td>0.6</td>
<td>1.1</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Loans</td>
<td>1.0</td>
<td>1.1</td>
<td>1.0</td>
<td>0.9</td>
<td>0.4</td>
<td>0.8</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Loan waivers</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
<td>0.4</td>
<td>0.2</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>FEM (billion yuan)</td>
<td>1.1</td>
<td>1.4</td>
<td>1.6</td>
<td>1.4</td>
<td>1.6</td>
<td>1.8</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>including infrastructure projects</td>
<td>0.14</td>
<td>0.16</td>
<td>0.13</td>
<td>0.10</td>
<td>0.04</td>
<td>0.09</td>
<td>0.12</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Source: (Chazhong Ge et. al, 2000 after Yang et al., 1998 and China Environmental Yearbooks)

Table 2: Trends in percentage allocation of environmental funds available for pollution control projects in China

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Total amounts used for environmental investments (billion yuan, constant 1998 prices)*</td>
<td>2.6</td>
<td>3.0</td>
<td>2.9</td>
<td>2.5</td>
<td>1.1</td>
<td>2.3</td>
<td>2.6</td>
<td>2.7</td>
</tr>
<tr>
<td>Direct grants for pollution abatement by polluters</td>
<td>47%</td>
<td>45%</td>
<td>45%</td>
<td>46%</td>
<td>50%</td>
<td>46%</td>
<td>48%</td>
<td>57%</td>
</tr>
<tr>
<td>Loans</td>
<td>37%</td>
<td>36%</td>
<td>34%</td>
<td>36%</td>
<td>35%</td>
<td>32%</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Loan waivers</td>
<td>10%</td>
<td>14%</td>
<td>17%</td>
<td>15%</td>
<td>13%</td>
<td>15%</td>
<td>16%</td>
<td>15%</td>
</tr>
<tr>
<td>Grants for infrastructure projects</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

* infrastructure projects financed through FEM are included here

Source: (Chazhong Ge et. al, 2000 after Yang et al., 1998 and China Environmental Yearbooks)

77. **Fund for Environmental Management (FEM)** is used for two main purposes. The first is environmental infrastructure. The second is capacity building of environmental protection agencies. Environmental infrastructure grants include those that benefit many polluters, and are provided for such projects as river basin water pollution control or centralized wastewater treatment plant. Capacity building of environmental protection agencies normally includes staff training, procurement of facilities and equipment, environmental awareness raising, construction of administration facilities (normally office buildings, apartments and labs). But the money is also used for salaries of personnel of environmental agencies that cannot be paid through budget and other welfare benefits of environmental protection personnel. SFEP is controlled and used by local EPBs subject to budget plan. Financial discipline is checked and approval is done by the Financial Bureaus at the same level.

There are clear **trade-offs between using the money of environmental funds for pollution abatement by polluters versus capacity building of administration**. According to the 1982 national Temporary Regulation of Collecting Pollution Levy, 80% of all revenue of pollution charges and fines should be used for pollution treatment by polluters and only 20% for capacity building. However, in reality the ratio has been changed in favour of administration. Revenues of non-compliance fines were totally diverted for administrative capacity building. In addition, some provinces and cities have allocated even more for themselves. Since all revenues belong to local treasury, local governments have right to change allocation patterns. For example, Anhui province and Sichuan province have adjusted the proportion of FFAP from 80% to 70%(Yang et al., 1998). As a result more than half of all the funds are now allocated to administration rather than to polluters. For the entire country the share of FFAP has declined from 67.5% in 1991 to 53.9% in 1998, whereas that for FEM increased from 31.5% to 43.1% respectively.
Table 3: Trends in allocating resources of environmental funds between pollution abatement by polluters and capacity building of administration

<table>
<thead>
<tr>
<th>FPAP (%)</th>
<th>67%</th>
<th>65%</th>
<th>61%</th>
<th>60%</th>
<th>55%</th>
<th>56%</th>
<th>56%</th>
<th>54%</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEM (%)</td>
<td>33%</td>
<td>35%</td>
<td>39%</td>
<td>40%</td>
<td>45%</td>
<td>44%</td>
<td>43%</td>
<td>46%</td>
</tr>
</tbody>
</table>

Source: (Chazhong Ge et. al, 2000 after Yang et al., 1998 and China Environmental Yearbooks)

78. Environmental Protection Bureaus play essential function in managing all environmental funds. They both select projects and benefit from them. They both allocate resources and control their allocation. These multiple roles clearly involve conflict of interests, and may be a potential source of concern for Chinese authorities.

79. The main areas for improvement of performance of environmental funds, identified by Chinese experts include (Chazhong Ge et. al, 2000):

- Avoid excessive fragmentation of resources; focus money on fewer, larger projects
- Divert more expenditure from industrial pollution projects implemented by individual enterprises to environmental infrastructure projects
- Separate institutionally revenue collection from expenditure management; discontinue (informal) practices and expectations that environmental charges and fines must be recycled back to individual polluters who paid them
- Strengthen expenditure management; introduce transparent and less political project appraisal system, based on objective criteria, with prominent role of cost-effectiveness; strengthen capacity of fund staff in professional environmental, engineering, but in particular financial analysis of environmental investment projects
- Strengthen capacity in loan management
- Develop new regulatory framework for managing the revenues form pollution charges and other budgetary resources for environmental projects. Clarify roles and responsibilities of different institutions, introduce programming and project cycle rules and procedures according to the best international practices, such as those contained in OECD "Good practices of public environmental expenditure management".

A. Evaluation of Environmental Funds in Transition Economies and lessons learned for their future

80. The traditional focus of the environmental finance debates in transition economies was on comprehensive earmarked, earmarked tax funds due to their distinctive role played in a few countries of Central and Eastern Europe (CEE). The empirical analysis however, indicates that the focus on funds in the transition economies has often been disproportionate to the role they actually played in environmental financing. Only a few funds in Central Europe can be called success stories. The majority of the CEE funds and virtually all the NIS and Chinese environmental funds remain insignificant, and sometimes problematic, players in financing environmental expenditure. They have often provided important financial support to environmental administration affected by frequent budget cuts, but their role in financing environmental investments is negligible. In fact one may argue that this disproportionate attention paid to environmental funds by policy makers may have prevented the development of more effective institutional arrangements for managing public environmental expenditure. Several funds are actually disappearing. In
Kazakhstan Environmental Funds have been gradually phased out. Funds in Russian Federation and in Ukraine face very uncertain future.

81. This paper does not advocate elimination of environmental funds as a matter of principle. Rather it calls for the critical, case-by-case revision of their value added and for more precise definition of their "niche" vis-à-vis other environmental financing institutions. Where the value added can be convincingly identified it recommends their reform and strengthening in line with internationally recognized performance standards and in the context of the broader system of public finance.

82. Earmarked tax funds manage public money. As such they are an integral part of the public finance systems. To be successful they should not be dis-functional to the vital process of reforming and strengthening the fiscal position of the public sector. Fiscal discipline, efficient allocation of public funds, operational efficiency, accountability, transparency and comprehensiveness of the budget are internationally recognized essential elements of healthy public expenditure management and arguably the conditions for development to be sustainable. The framework for integration of environmental funds into the sound system of public finance is presented in the background paper for session III.1 at this conference (Good practices of public environmental expenditure management in transition economies).

83. The future of the funds is best considered in the wider context of environmental and public finance. Subsidies always distort markets and increase public sector deficit. Therefore, the need for environmental subsidised finance is to be carefully reconsidered in the light of the generic Polluter Pays Principle (the "no-subsidy" principle) that guides environmental policies in developed OECD countries. Better understanding of the scale and the nature of that need may help to target subsidies better so that the funds can bring a genuine value added where and when it is really necessary without obstructing the process of transition to a market economy.

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