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EAP Task Force

**TENTH MEETING OF THE EECCA ENVIRONMENTAL FINANCE
NETWORK**

22 – 23 February 2007, Paris, France

**HANDBOOK FOR APPRAISAL OF ENVIRONMENTAL PROJECTS FINANCED
FROM PUBLIC FUNDS**

Document 5

This document will support the discussion under session 5 on Managing Public Environmental Expenditure.

ACTION REQUIRED: For discussion and endorsement.

Environmental Finance

HANDBOOK FOR APPRAISAL OF ENVIRONMENTAL PROJECTS FINANCED FROM PUBLIC FUNDS



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This report is also available in Russian under the title:

Руководство по оценке экологических проектов, финансируемых за счет государственных средств

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FOREWORD

The EAP Task Force has long worked on strengthening environmental expenditure management in economies in transition. As part of this work, and on the basis of practical experience, the EAP Task Force has developed the Good Practices for Public Environmental Expenditure Management. These Good Practices provide policy-makers and managers of public resources for environmental investments with a framework for mainstreaming environmental expenditure programmes in the core of public finance. They provide guidance on what is needed to design and implement public environmental expenditure programmes. They address the principles, procedures and organisational frameworks that are likely to be most acceptable for Ministers of Finance and foreign sources of financing.

The Handbook, on the other hand, is intended to show how to implement some of these major principles and procedures in practice. To further translate these principles into operational procedures, the EAP Task Force has developed detailed training materials published as a Toolkit for Managers of Public Environmental Expenditure Programmes. In addition, a simple excel model for calculating cost-effectiveness of environmental investment projects was developed and detailed instructions for its use designed.

This project was managed by Nelly Petkova (Environment and Globalisation (EG) Division, OECD's Environment Directorate) with the valuable support of Grzegorz Peszko (former Team Leader of the Environmental Finance Team at the EAP Task Force and current World Bank officer). It has benefited from detailed comments by Xavier Leflaive (Environmental Finance Programme Manager at the EG) and Brendan Gillespie (Head of the EG at the OECD's Environment Directorate).

The Handbook was made possible due to the significant contributions of experts from different countries. We would like to especially acknowledge the contributions of Gottfried Lamers and Michael Aumer from the Federal Ministry of Agriculture, Forestry, Environment and Water Management of Austria, Barbara Koszulap from the National Fund for Environmental Protection and Water Management of Poland, Prof. Maciej Nowicki, Stanislaw Sitnicki and Adam Zakrzewski from the Polish EcoFund, Milojka Jerse from the Environmental Development Fund of Slovenia. In addition, several consultants have contributed significantly to the project: Glen Anderson (USA) and Jan Raczka (Poland): Grzegorz Moorthi, Rafal Stanek, David Toft, Andrzej Gula (from Poland) and Vladimir Morozov (Ukraine) have provided valuable comments at different stages of the draft.

Special thanks go the Austrian Ministry of Environment and the Polish EcoFund for hosting the experts' workshop where the contents of the Handbook was discussed and agreements on proposed tools and approaches reached. The project would not have been possible without the generous support of the governments of Denmark (the Danish Environmental Protection Agency), Austria (the Federal Ministry of Agriculture, Forestry, Environment and Water Management) and the UK (Department for the Environment, Food and Rural Affairs). All these contributions are gratefully acknowledged.

The views expressed in this publications are those of the authors and do not necessarily reflect the views of the OECD or its member countries.

LIST OF ABBREVIATIONS AND ACRONYMS

AC	Annualised Cost
ACC	Annualised Capital Cost
BAT	Best Available Techniques
CBA	Cost-Benefit Analysis
CCE	Central and Eastern Europe
CEA	Cost-Effectiveness Analysis
DCF	Directed Credit Funds
DGC	Dynamic Generation Cost
EAP Task Force	Task Force for the Implementation of the Environmental Action Programme of Central and Eastern Europe
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EECCA	Eastern Europe, Caucasus and Central Asia
EU	European Union
FMAFEWM	Federal Ministry of Agriculture, Forestry, Environment and Water Management of Austria
FNPV	Financial Net Present Value
GDP	Gross Domestic Product
GEF	Global Environmental Fund
I	Investment
IFI	International Financing Institution
IRR	Internal Rate of Return
ISPA	EU Instrument for Structural Policies for Pre-Accession
KfW	Bank Kreditanstalt für Wiederaufbau (German Bank for Reconstruction)
MDG	Millennium Development Goals
NEAP	National Environmental Action Programme
NGO	Non-Governmental Organisation
NPAF	National Pollution Abatement Facility (a World Bank facility for Russia)
NPV	Net Present Value
O&M	Operation and Maintenance (costs)
OECD	Organisation for Economic Cooperation and Development
PE	Population Equivalent
PEEM	Public Environmental Expenditure Management
PIU	Project Implementation Unit
PNFEPWM	Polish National Fund for Environmental Protection and Water Management
R&D	Research and Development
UAC	Unit Annual Cost
UIC	Unit Investment Cost
UNFCCC	United Nations' Framework Convention on Climate Change
UOP	Unit Operational Cost
USD	US Dollar
WHO	World Health Organisation
WTO	World Trade Organisation
WWW	World Wide Fund
WWWT	Wastewater Treatment Plant
CO ₂	Carbon Dioxide
BOD	Biological Oxygen Demand
COD	Carbon Oxygen Demand
N	Nitrogen
P	Phosphorus
Kg	Kilogramme
M ₃ /d	Cubic meters per day

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EXECUTIVE SUMMARY

Background

There are good reasons to provide practical guidance on the implementation of international best practices for the management of public environmental expenditure programmes.

Recent trends in EECCA countries confirm that the public sector remains a major source of finance for environment protection and pollution abatement and control (see OECD, 2007, forthcoming). In addition, EECCA governments are increasingly aware of the benefits they could gain from improved management of public environmental expenditure programmes; this is part of their recognition that a healthy and sound system of public finance is a cornerstone of social well-being and sustainable economic development. It also stems from the understanding that improved expenditure management can leverage additional resources for environmental investments both from international and private sources.

As part of its work programme on environmental finance, the EAP Task Force has accumulated (and disseminated) significant experience in the area of the management of environmental expenditure. Some of the major tools developed in the EAP Task Force framework include:

- The St. Petersburg Guidelines on Environmental Funds in the Transition to a Market Economy, 1995;
- The Sourcebook on Environmental Funds in Transition Economies, 1999;
- Performance Reviews of Selected Environmental Funds (Kazakhstan, Moldova, Ukraine);
- Good Practices of Public Environmental Expenditure Management in Transition Economies, 2003, endorsed at the Kiev “Environment for Europe” Ministerial Conference;
- Toolkit for Appraisal of Environmental Projects Financed from Public Funds, 2006.

In addition, the Secretariat has reviewed a variety of institutional arrangements used in OECD countries to manage environmental expenditure financed from public funds that provide useful benchmarks and insights to challenges and related institutional solutions. Hence, the Handbook has a number of companion publications:

- Good Practices for Public Environmental Expenditure Management (PEEM) (OECD, 2006) adopted as a Council Recommendation by the OECD¹. The report provides guidance to environmental agencies on how to design and implement public environmental expenditure

¹ The OECD Council comprises Ambassadors of the 30 member countries to the Organisation. It is the main decision-making body of the OECD. Council Recommendations are not-legally binding on member-states but their acceptance by the OECD countries suggests willingness to implement them.

programmes in line with international good practices and according to the principles of sound public finance;

- OECD experience on PEEM (OECD, 2007). The report analyses alternative institutional set-ups adopted by selected OECD countries/regions to design and implement environmental expenditure programmes in the water sector. It provides a useful discussion of common principles and diverging approaches to the issue, including the role that the private sector can play in the management of such programmes.

This Handbook reiterates the rationale for public expenditure in the environment sector and highlights the main decisions that governments should make to define and manage public environmental programmes. It identifies a set of core principles which the implementing agencies, in charge of the management of such programmes, should adhere to. The Handbook also identifies the essential tools that are necessary for the smooth implementation of public environmental programmes; each tool comes with an illustration from a variety of (well-performing) agencies and environmental funds in OECD and CEE, with a focus on the institutions set up in Poland which have had a particularly good track record over the years.

The Handbook is a practical tool that proposes a step-by-step approach and guidance to resolving various practical challenges that implementing agencies face in their everyday operations. It also offers a menu of options and management tools and techniques that different agencies can choose from, depending on the needs and the maturity of the individual institution.

Economic rationale for public environmental expenditure

This Handbook is about good implementing good international practices in managing subsidies for environmental investments (with a focus on wastewater investment projects). Subsidies however are only a second best instrument of environmental policy. The policy framework of environmental finance is first and foremost based on the Polluter-Pays Principle (PPP) and User-Pays Principle. Both these principles require avoiding/reducing the use of public environmental expenditure.

The PPP requires that all compliance costs should be borne by polluters in both the competitive (enterprise) and non-competitive sectors without any subsidy. While it is rightly so for the competitive sector, the pure public goods character² of environmental infrastructure investment projects justifies demand for public support. In addition, such projects generate significant external positive environmental and social benefits (such as the minimum amount of drinking water required for health and wellbeing) that make them economically viable. For these reasons, government intervention and public subsidies are needed to encourage investments. Thus, in certain cases, the PPP, provides for exceptions to its no-subsidy philosophy.

In such cases, subsidies can help make economically (environmentally) efficient projects financially viable. Due to the nature of environmental infrastructure investments (including low or no profitability), the private sector alone will never be interested in financing such projects. Without public support, many of these socially important investments will remain unfunded.

At times of recession, environmental investments are the first expenditure which enterprises cut off in order to remain competitive. Subsidies are necessary to keep up socially important

² Pure public goods exhibit the nature of nonexcludability and nonrivalry. Nonexcludability means that nobody can be excluded from profiting from the service, therefore the private sector may not be able to provide the good. Nonrivalry means that the private sector will not provide the good efficiently, even if it can provide it profitably.

environmental investments particularly throughout the recession periods when other sources of long-term finance are even less available. In this context, when the banking system is underdeveloped, the cost of credit is very high. Subsidies can provide cheap financing and bridge the gap. Subsidies however should not compete with the banking sector and when changes in banking conditions are observed, the subsidy scheme should be terminated.

One additional reason for providing subsidies is their ability to mobilise facilities' own resources through co-financing requirements and contribute to the overall increase of the level of resources for environment.

Thus, if a market operates smoothly and there are no externalities, there is no need for government intervention - all investments that are economically efficient will be financially viable and will be financed from commercial sources. Once there is a market failure (an externality), the market is not efficient. In order to improve social welfare, the government may correct the market mechanism by providing public support to socially profitable investments.

Table 1. Golden rule for providing public support to investments

Project characteristics		Financial viability	
		Yes	No
Economic efficiency	Yes	-	+
	No	-	-

Source: Żylicz et al. (2000).

As Table 1 shows, the government should not co-finance investments that are not economically efficient because their implementation will lower the social welfare. Economically efficient projects should be understood as project which create benefits for the society as a whole and not only to the project beneficiary. Also, financially viable investments should not be co-financed with public resources since they can rely on commercial financing. **The golden rule of public funding implies that the government should support only these investments that are economically efficient but are not financially viable.**

The rate of assistance (or aid intensity in the EU language) is a critical issue in subsidised financing that requires close monitoring. By providing state aid, governments should ensure that these subsidies do not distort competitiveness and should seek to encourage restructuring of and innovation in the industry/sector by supporting investments which result in buying more environmentally-friendly assets and activities.

In the EU candidate countries where the construction of environmental infrastructure is already mandatory, subsidies are needed to comply with the EU environmental requirements. In other economies of transition though, the major purpose of public support is to provide incentives to local communities and enterprises to undertake environmental investments by spending more of their own resources. Therefore, the rate of support should be set in such a way as to ensure that it does not replace the recipient's spending. Thus, implementing agencies should be seen as a source of the last resort for covering the financing gap of priority environmental projects. Projects that can be financed by the state or local budgets and those that can be financed by enterprises themselves or by commercial financial institutions should not be financed by the agency (principle of additionality). For this reason, the level of the subsidy should be kept at the absolute minimum. This minimum can be defined as the rate of assistance which makes potential environmental projects economically viable.

Main decisions to be made by the governments regarding an expenditure programme

When considering to set up or to reform a programme for environmental expenditure, at either a national or sub national level, governments should:

- Set few and unambiguous priorities (in terms of environmental media, economic sector, or region supported) and define, clear, time-bound and measurable objectives they want to achieve;
- Define eligibility criteria, in terms of types of projects, projects owners, and eligible types of costs which will be supported;
- Assign revenue sources for the programme, identify financing mechanisms and the assistance rate per type of project/beneficiary they deem proper;
- Define the application cycle (time-bound versus on-going) which is best adapted to the priorities they have identified.

Consultation with stakeholders, including the civil society and the business sector, are needed to make sure these decisions are consistent, applicable, and will be acknowledged and understood by the parties, including project owners.

Only when these decisions are made (when all elements of the expenditure programme are defined), should governments consider the most appropriate institutional set-up for the implementing agency. In doing so, they should make sure that this agency be needed, keep its structure as simple as possible, and ensure it adapts over time, including providing for the programme to be terminated when its objectives are achieved.

Core principles to be considered by the implementing agency when appraising projects

Ten major principles have been identified, which should help agencies avoid common mistakes. These principles aim to translate in practical terms the main goals and conditions of the public expenditure management systems (transparency, accountability, cost-effectiveness of resources spent):

1. Programming is a political process, focused on defining priorities and objectives and setting the rules for the project cycle while appraisal is conducted by professional technical staff, held accountable for their decisions. Responsibilities for programming and project cycle management should be separated;
2. Transparency is key. Information (on project cycle procedures, eligibility criteria, and achieved results and benefits) should be disseminated widely and all potential applicants should be treated equally; decisions should be explained on time; stakeholders should be invited to participate;
3. Active project identification (in contrast to the passive “sit-and-wait” approach) is preferable to make sure all potentially good projects have a chance to be identified;
4. A two-step appraisal process is preferable (particularly with big investment projects), as it allows preliminary screening on the basis of eligibility criteria, thus saving time and resources to both applicants and the agency;

5. Simple and traceable appraisal procedures and criteria should be preferred; typically, cost-effectiveness analysis is preferred to cost-benefit analysis and multi-criteria analysis in assessing projects;
6. The agency should be ready to help applicants prepare projects; a unit specialising in project preparation could be set-up, as a distinct entity;
7. Data provided by applicants should be carefully checked and verified. Applicants, not only projects, should be appraised as well, although this could be outsourced to banks;
8. The financial sustainability of the project should be checked: bankable projects do not need public support, but projects which are not sustainable should be rejected as well;
9. The process does not stop once a decision has been made: contracting, monitoring project implementation and assessing project outcomes are also essential, as the agency will learn from this experience;
10. Attracting and retaining qualified staff is key; the capacity to challenge project owners, to facilitate project preparation and to manage the complex process of project appraisal requires experience in the field.

Essential management tools

The appraisal process relies on a number of tools and procedures, which facilitate its management:

- An information package for applicants. It reiterates the agency's mission, priorities, and eligibility criteria;
- A questionnaire for eligibility screening, along with instructions to applicants and a checklist for agency's staff to summarise results from the eligibility screening of projects;
- A full application form with detailed instructions to applicants on how to fill in the application form, along with certain indicators that should be provided by the agency (such as a discount rate, input prices, inflation coefficients. Detailed instructions to agency's staff on how to handle data and information that enter the appraisal process;
- Methodological guidelines for conducting cost-effectiveness analysis;
- A project fiche, prepared by agency's staff, to synthesise information and to report to the decision-making body;
- A manual of operational rules and procedures for staff;
- A database for project cycle management.

Illustrations based on concrete experience of well-performing institutions in CEE are included in the Handbook. All these tools aim at ensuring transparency and efficiency of the agency's operations as well as accountability of staff for decisions made. In addition, they help prevent the mismanagement and misuse of public resources provided by the agency. Thus, the Handbook help implement in practical terms the recommendations developed as part of the Good Practices for PEEM.

INTRODUCTION

Strengthening public environmental expenditure management, in general and institutions managing public environmental expenditure, in particular, has been one of the major objectives of the work on environmental finance of the EAP Task Force over the past several years. One of the main conclusions, emerging from this work, has been the need for practical management tools and operational procedures that can be used by these institutions in their daily operations as a benchmark to improve their effectiveness and efficiency.

Objectives and scope of the Handbook

To respond to this need, the EAP Task Force has developed a number of tools aimed at helping decision-makers and managers of public environmental expenditure programmes to improve the performance of their programmes. The OECD Good Practices for Public Environmental Expenditure Management (adopted as a Recommendation by the OECD Council) provide guidance to environmental agencies on the design of such programmes in line with internationally-recognised standards and in accordance with the principles of sound public finance. The Good Practices also provide a framework for the evaluation of individual expenditure programmes. A number of EECCA environmental funds have been reviewed and their performance assessed using the methodology developed on the basis of these Good Practices.

This Handbook has been prepared as a supplement to the Good Practices. It aims to show how to implement the good practices of programming and project cycle management in real life. The Handbook explains not only what should governments and implementing agencies do but also why they should do it. To this end, the Handbook proposes a step-by-step approach and guidance to resolving various practical challenges that implementing agencies face in their everyday operations. It also offers a menu of options and management tools and techniques that different agencies can choose from.

The Handbook is focused on investment projects. Given the need for public support for investments in the water sector, most of the examples and management tools are linked to projects of the wastewater collection and treatment sector. This sector is used as an example to demonstrate the value of proposed approaches.

Target audience

The Handbook is first and foremost targeted at managers of public environmental expenditure programmes, such as environmental funds, who work on appraisal and selection of individual projects which will receive public support. Decision-makers and politicians responsible for designing public environmental expenditure programmes and supervising the performance of implementing agencies may also be interested to learn from the experience of other countries and other well-functioning agencies.

Although the main audience is managers from CEE and EECCA, the main principles, tools and approaches to programming and project cycle management identified in the Handbook are relevant for any developing country striving to strengthen and improve its public environmental expenditure management practices in line with international standards.

In addition, managers of technical assistance programmes from different donor agencies, IFIs, international organisations concerned with the practical implementation of good practices in this area, consultants working on public finance issues may find the Handbook useful in their professional work.

Last but not least, the Handbook is not intended for project developers, private financiers or IFIs. The Handbook is developed from the point of view of the public financier who is not involved in project preparation and project development but is concerned with ensuring the selection and financing of the most cost-effective projects, proposed by project developers. However, the Handbook does not intend to deliver a complete, “ready-to-use” toolkit that could be directly applied by any implementing agency. The tools and approaches proposed here need to be further adjusted and tailored to the needs of the individual institution. Which of these tools and approaches will the implementing agency choose to use in its daily practice will depend on the governance structure in the country as well as the maturity of the institution.

Structure of the Handbook

The Handbook is divided into 5 main chapters. The first chapter discusses issues related to programming. The chapter defines the essential elements of a well-designed expenditure programme, it presents different approaches for developing a realistic rationally-prioritised and well-focused multi-year programme, it identifies different tools for preparing good financial plans and budgets. Last but not least it discusses the main institutional issues related to the management of public expenditure programmes.

Chapter 2 looks into the major stages of the project cycle with a main focus on project identification, appraisal, ranking and selection. It covers, among others, issues related to setting eligibility and appraisal criteria as well as identifies tools and mechanisms for assessing environmental and cost-effectiveness of investment projects.

Chapter 3 deals with issues related to the after-project selection process. These include such topics as negotiations between the agency and beneficiaries before signing an agreement, actual contracting and financial transfers to the beneficiaries. The chapter identifies the main tools and approaches which can help protect the implementing agency from misuse and mismanagement of its public resources.

Monitoring of project implementation and subsequent evaluation are the major issues discussed in Chapter 4. This chapter provides a menu of possible checks and balances that need to be in place in order to ensure smooth project implementation as a prerequisite for achieving stated projects’ objectives.

Finally, Chapter 5 focuses on cash-flow and loan portfolios management, both essential for the good financial state of the implementing agency.

Developing the Handbook

While many Project Cycle Handbooks already exist, most of them look at the project cycle management from the perspective of a project developer. To date, there have been very few practical tools that address project cycle management from the point of view of a public financing organisation which evaluates and finances environmental investment projects using subsidies. Such tools are usually dispersed among various institutions, their quality varies, and each has a comparative advantage in some aspects of project cycle management.

This Handbook has extracted available tools and practices from some of the best internationally-recognised government authorities and public financial agencies. These include some Polish environmental funds (The National Fund for Environmental Protection and Water Management, the Polish EcoFund), the Slovenian Environmental Development Fund, the Czech State Environmental Protection Fund, the Austrian Ministry of Environment. A number of consultants with substantial hands-on experience in this area have been instrumental in shaping the Handbook. The Handbook is the result of the concerted efforts of all these practitioners who have significantly contributed to this work,

More recently, on the basis of the Handbook, the EAP Task Force has developed a toolkit of training materials and delivered training on the Handbook tailored to the needs of an individual EECCA environmental fund. In addition, a simple model for calculating cost-effectiveness has been designed (using the Dynamic Generation Cost approach) and instructions for its use prepared. This model is part of the Handbook and a CD-Rom is attached containing information in both English and Russian.

CHAPTER 1 PROGRAMMING

In the context of public finance, programming is the process by which decisions are made with regard to which priority government areas need public support. Programming also includes defining the rules that will govern the allocation of resources across different areas. Effective programming should be based on a systematic economic, financial and market analysis which is used to establish the objectives of the programme and identify related solutions. In addition, a participatory approach, involving major stakeholders who will have a role in implementing the public expenditure scheme, is key to designing a successful programme. This both improves design quality and promotes stakeholder ownership over programme's implementation. This participation also facilitates the development of national capacity in programme design.

Introduction

A **programme** is a group of activities intended to contribute to an identifiable set of government objectives with a clearly defined budget and a timeframe for achieving these objectives. A **public expenditure programme** is a mechanism to allocate subsidies to priority areas. In practice, programmes are implemented through specific projects. Therefore, programming involves setting the rules that will govern the implementation of the expenditure programme with a specific focus on the procedures and requirements related to the identification, appraisal and selection of individual projects for financing, necessary to achieve the programme's stated objectives.

While project cycle management is a technical concept and is usually conducted by professional staff, programming is a political process which sets the main elements and rules of the expenditure programme. Clear and consistent rules and procedures are of utmost importance for the sound governance of the expenditure programme and for the optimal allocation of scarce public resources to those sectors where they are most badly needed. The appraisal process alone, even if conducted in accordance with the best international practices, cannot ensure optimal results if politicians have set unclear and vague objectives or made erroneous choices. Hence, the role of programming in providing the "rules of the game" and ensuring that public resources are spent in a cost-effective and efficient manner.

Responsibilities for programming should be separated from responsibilities for project cycle management, and specifically, appraisal in order to ensure accountability and transparency of the two processes. Ideally, the government agency responsible for implementing national environmental priorities should develop a realistic expenditure programme and choose an implementing agency (public or private) to manage it. In real life, however, and particularly in economies in transition, government agencies often fail to prepare such realistic programmes and provide implementing agencies with only vague guidance as to what priority sectors they should support. Implementing agencies have to find a way to substitute for this failure of politicians. How this can be best done is one of the issues discussed in this chapter.

This chapter provides guidance on the design of public environmental expenditure programmes. The main objectives of this chapter are first, to define the essential elements of a well-designed public

environmental expenditure programme; second, to present different approaches for developing a realistic rationally-prioritised and well-focused multi-year expenditure programme; third, to identify different tools for preparing good financial plans; and fourth, to discuss some of the main institutional issues related to the management of public environmental expenditure programmes.

The context for developing public environmental expenditure programmes

Public environmental expenditure programmes stem from **national strategies and policies**. Most countries in Central and Eastern Europe, Caucasus and Central Asia (EECCA) have developed a number of such strategic documents. These documents (e.g. Sustainable Development Strategies) provide the long-term (5-10 year) framework, taking account of a range of economic, social, environmental and development priorities (e.g. Millennium Development Goals (MDGs), European Union (EU) Directives, World Health Organisation (WHO) directives). Environmental policy is established to be consistent with the country's sustainable development strategy and includes the elaboration of environmental priorities and basic principles that guide implementation of policies, related to compliance responsibilities and the roles of implementing agencies.

The **implementation programme** for the environmental policy defines priority environmental objectives and actions designed to meet those objectives, as well as policy tools, and the resources required to implement them. The implementation programme also describes the necessary laws and regulations that need to be in place for this purpose. These objectives can be achieved with or without subsidies. The implementation programme can be subdivided into **non-expenditure** and **expenditure actions**. Where no subsidies are necessary, non-expenditure actions include the typical mechanisms of environmental policy – standards, taxes, fees, permits, and other regulatory tools. In each case, facilities and other regulated entities respond to incentives by taking actions (making investments) to promote environmental goals. If objectives cannot be achieved without subsidies, **public expenditure programmes** need to be set up to provide financial assistance to support facilities and other regulated entities in carrying out investment projects.

On the basis of identified objectives for the expenditure programme, the government will need to identify the best institutional set-up to manage the programme's resources. A multi-year financing strategy will need to be developed. Ideally, the financing strategy should be approved by the parliament. This strategy will clearly state the objectives of the programme and the timeframe for their attainment as well as set priorities among different environmental media (e.g. reducing local air pollution vs. tackling trans-boundary air pollution, improving wastewater treatment, etc.). Within each area, a priority list of problems, eligible for funding should be identified. In addition, the **financing strategy** should identify the main sources of financing, the main rules and procedures (including eligibility, appraisal and selection criteria) for selecting the most cost-effective projects to be supported with public resources. However, the financing strategy should not identify specific solutions, this is the task of the project cycle. In short, the financing strategy is the key document that describes the main elements of the expenditure programme.

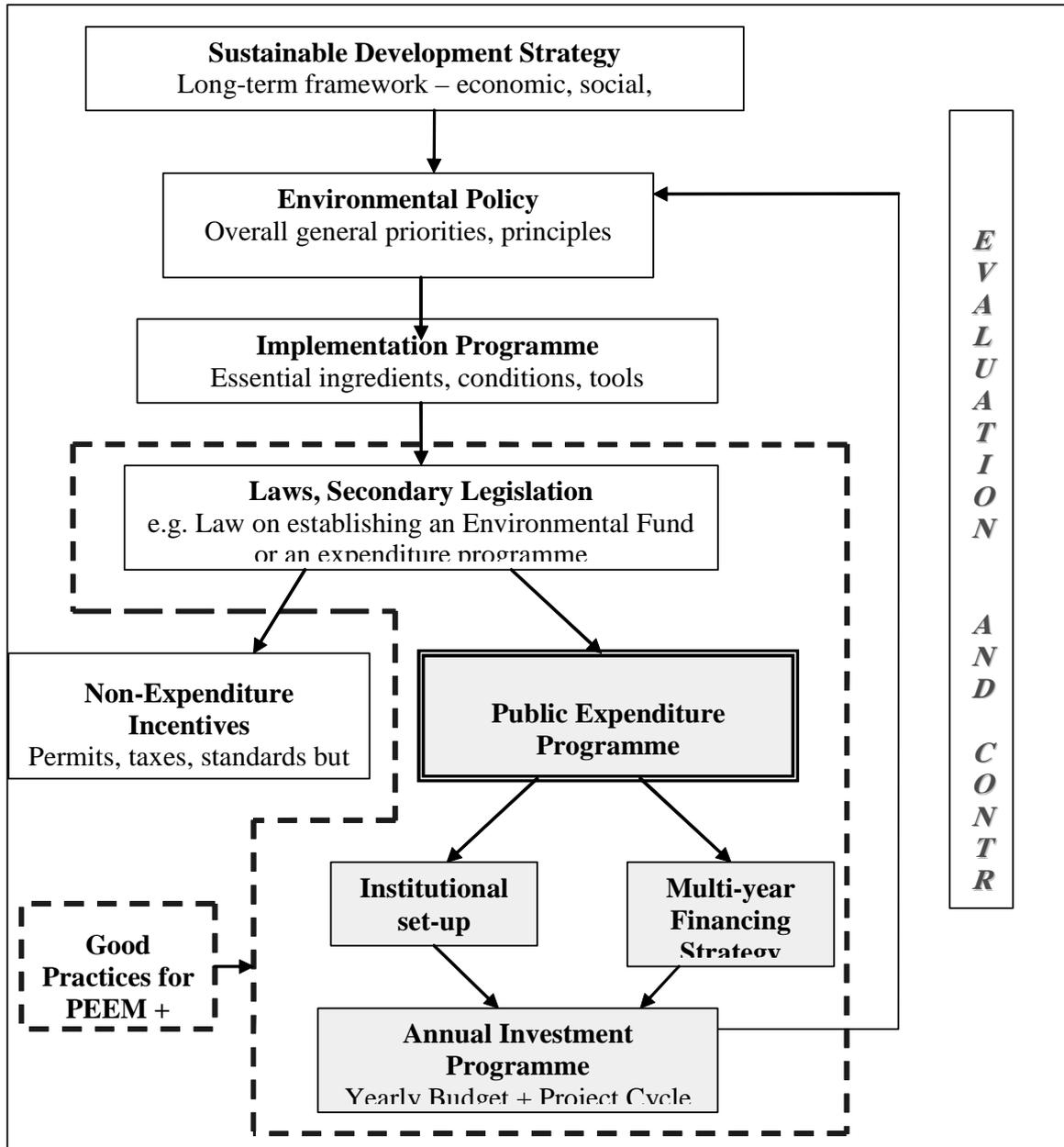
The financing strategy should provide the basis for developing yearly investment programmes and related yearly budgets. An environmental investment programme is the implementation component of an overall financing strategy designed to promote sustainable development objectives. Figure 1 below describes the process linking strategy and policy development to the investment programme.

The overall implementation of the investment programme needs to be carefully monitored and evaluated by the government agency responsible for the expenditure programme. *Ex-post* evaluation is

crucial in ensuring transparency and accountability as well as learning from experience in order to improve the management of future expenditure programmes.

In addition, upon review by the government and attainment of the stated objectives, the expenditure programme should be closed. Hence, the legislation on the agency should include a “sun-set” (or a termination) clause.

Figure 1. Links between strategy and policy development and the environmental investment programme



Essential programming elements and eligibility criteria

In most EECCA countries which have set up institutions for managing public environmental expenditure, investment programmes are often missing or where they exist they contain long wish-lists of projects or centrally-planned project-specific pipelines. Most of these often remain under-funded or unfunded altogether and are carried over from one year to another due to the lack of resources to implement them. An alternative to such long lists of investment projects is an expenditure programme which aims to identify projects which can achieve the stated programme's objectives at a least cost.

Programming activities can be broadly divided into two groups:

- those decisions that define the expenditure programme elements, including rules and procedures; and
- those decisions related to the agency's revenue and cash flow (the yearly investment programme).

The essential elements of a well-designed realistic expenditure programme are provided below.

Box 1. Essential elements of the expenditure programme

An expenditure programme should be an integral part of a larger environmental programme aimed at achieving specific priority objectives. Each public expenditure programme should have:

- Clearly defined objectives and priorities – these objectives should be specific, measurable, realistic and time-bound and priorities should be few, unambiguous and sharp;
- Clearly defined timeframe of the programme;
- Specified cost estimates of achieving the objectives;
- Specified sources of financing;
- Specified eligible project types;
- Specified eligible beneficiaries;
- Clearly defined terms of financing, including among others, financial instruments (eligible form of subsidy), co-financing requirements, maximum/minimum level of support, aid intensity;
- Well-documented principles, rules, operating procedures for project cycle management;
- Clearly-defined and robust criteria for appraisal, selection and financing of investment projects;
- Clearly-defined procurement rules;
- Indicators of performance of the institution managing the expenditure programme; and
- Selection of the best institutional arrangement for managing the expenditure programme, equipped with sufficient resources to meet its objectives, qualified staff and instruments to implement the programme.

These main elements should be elaborated by the government agency/ministry responsible for implementing the expenditure programme and contained in the **financing strategy** of the implementing agency (e.g. objectives and priorities, project appraisal criteria, profile of eligible beneficiaries and types of projects to be supported). Most of these **elements also constitute the eligibility and appraisal criteria** which will be discussed at length in the chapter on project appraisal.

For the expenditure programme, the key decisions concern the types of environmental expenditures that will be funded and the characteristics of the funding provided. Expenditures can be categorised according to the types of projects (e.g. investment, research, education and public awareness), the sectors addressed (e.g. air, water, waste, biodiversity and nature protection), the

geographical focus (e.g. local, regional, national, transboundary, global), or in thematic terms such as demonstration of innovative technologies, waste minimisation, or pollution prevention. The implementing agency should also be clear on the type and amount of funding provided for each group of projects. The most common mechanisms used to disburse funds are grants and loans, but other options such as interest rate subsidies and loan guarantees can be also considered. Other funding decisions include maximum or minimum levels of support and share of project costs funded (co-financing requirements).

In terms of revenue, most implementing agencies have limited discretion in selecting the types of instruments that can be used or the amount generated from each financing source. The primary exception relates to revenue earned from loan repayments and other investments (if allowed) undertaken by the agency. Thus, the main focus of programming on the revenue side relates to making revenue projections, aligning these to the expenditure programme, and managing cash flow.

It is important that the expenditure programme should be developed first and only then should the institutional arrangement be selected and the institution established.

Box 2. Example of an expenditure programme

In developing an expenditure programme, the agency should gather and analyse sufficient information before determining the type of beneficiaries and the type of projects it will support. This example is based on the experience of the Polish EcoFund.

The Fund launched a programme aimed at protecting underground water reservoirs exposed to surface pollution. It did research on reservoirs susceptible to contamination, studied underground tables. Out of 50 reservoirs identified and studied, the EcoFund selected 28 as seriously affected by surface pollution. The Fund then sent letters to the municipalities on whose territory these reservoirs were asking them to inform the Fund about the status of their wastewater treatment plants. This inventory showed that 14 of these municipalities did not have WWTPs. Then the Fund chose 13 municipalities where the worst cases were based on a number of criteria, such as: size of reservoir and water resources available, aquafire type and quantity of infiltration, pollution discharged and its pressure on water quality in reservoir. The Fund invited these municipalities to prepare projects which were then appraised and ranked by the staff of the Fund and the most cost-effective ones were granted financing.

- Objective: Protect underground water reservoirs exposed to surface pollution;
- Information gathering: Collection of documentation of reservoirs susceptible to contamination, inventory of wastewater collection and treatment facilities, selection of eligible agglomerations;
- Ranking of agglomerations: Size of reservoir and water resources available, aquafire type and quantity of infiltration, pollution discharged and its pressure on water quality in reservoir;
- Ranking of project locations and verification of investment plans.

Setting multi-year expenditure objectives and priorities

The premise for setting expenditure priorities is that the implementing agency is unlikely to have adequate resources to support all environmental projects. Thus, priority setting provides a way to guide the allocation of these limited resources in a way that, ideally, is most beneficial to the environment as well as cost-effective. In addition, by stating its priorities, the agency may discourage the preparation and submission of a large number of low priority projects, thereby allowing the agency to use staff resources more effectively to review and select projects for funding.

The real challenge in establishing a realistic expenditure programme is to translate broad policy documents into meaningful and clear priorities and objectives. While the primary document for codifying priorities is an annual investment or expenditure plan, the development of this plan is often

guided by a longer term strategy. Long term strategies may cover a broad spectrum of environmental and natural resource problems, or be focused on a set of problems for one medium such as water or waste. In some cases, strategies are developed in response to and tailored to the requirements of international or regional treaties or agreements. In the extreme case, there may not be a strategy to serve as a guide for setting expenditure priorities. Even if there is a strategy, it may be too general or overly optimistic, or lack an implementation plan.

What to do if the government has failed to prepare a good expenditure programme? In the lack of a (well-focused) expenditure programme, the implementing agency needs to find a solution to setting clear priorities and all other related elements for its work. One way is to take the process in its own hands and launch a dialogue within the government. If such a broad dialogue is not possible, the agency may need to do its own priority-setting, supported by its governing body where often most of the major stakeholders in the country will be represented anyway. On the other hand, if the government agency responsible for overseeing the implementation of the expenditure programme recognises the capacity and expertise of the implementing agency, the programming task can be delegated to the implementing agency from the outset.

When the implementing agency is not in a position to launch a broad political process on setting priorities for its expenditure programme, this can be done by the staff of the agency alone with support by the members of the agency's governing body which will often consist of representatives of the major stakeholders in the country.

Prioritisation can be defined in terms of:

1. the type of environmental or natural resource domains promoted (see Annex I);
2. the types of projects (investment, research, education, etc.) (see Table 2) ;
3. the type of project owners;
4. the region or locality targeted for support from the agency;
5. types of specific national or international objectives promoted.

It is important that there be a precise definition of the limits to the priority areas, in such a way that during the appraisal process all well-prepared projects lying within the scope of a priority field are able to gain support, while others do not. These **sharp boundaries are then used as eligibility criteria** and allow potential applicants to quickly decide if their projects can pass the eligibility test. Box 3 below provides a good example of what clear priorities and sharp boundaries could look like. These are in use at the Polish EcoFund. The Polish EcoFund rarely receives applications which fall outside of these categories, thus saving time and resources in processing such project proposals.

It is important that priorities are defined neither too broadly, nor too narrowly. If priorities are too broadly defined, some of the most beneficial projects may not be funded and the agency's resources may be spread too thinly among a great number of projects. In contrast, if priorities are defined too narrowly, the agency may receive only few proposals and will not be in a position to disburse all its available resources. If unspent resources revert to the state budget, or the next year's allocation is reduced because of perceived carryover, there may be an incentive to lower the qualitative requirements for projects capable of obtaining support.

Box 3. Polish EcoFund definition of priorities within sectors

The Polish EcoFund is an institution that manages resources generated by debt-for-environment swaps conducted between Poland and some of its creditors. Most of these swaps were made in the early 1990s and the revenue will continue to flow to the Fund until 2010. The main tasks of the Polish EcoFund are to:

- Provide financial support for projects in environmental protection and nature conservation areas;
- Provide assistance in fulfilling Polish obligations to international conventions and meeting EU standards;
- Ensure facilitation of the transfer of the best technologies from donor countries onto the Polish market.

The EcoFund supports investment projects within five priority environmental protection sectors:

- Reduction of transboundary pollution of sulphur dioxide and nitrogen oxides and elimination of the low sources of such emissions;
- Reduction of pollutant and eutrophying flows into the Baltic Sea and protection of drinking water resources;
- Reduction of emission of gases causing global climate change (global warming and stratospheric ozone);
- Protection of biological diversity; and
- Promotion of waste management and contaminated soil reclamation.

The EcoFund has defined sharp boundaries for each priority area.

In the air protection sector:

- the highest chimneys (modernisation of power plants);
- the lowest chimneys (elimination of low emission sources);

In the water protection sector:

- wastewater treatment plants for towns located up to 50 km from the Baltic seashore;
- wastewater treatment plants crucial for the improvement of water quality in big cities;
- preservation of high quality water in the most valuable lakes;

In the climate protection sector:

- energy savings in buildings;
- utilisation of waste energy in industry;
- promotion of renewable energy sources;

In the nature protection sector:

- renaturalisation of endangered ecosystems (i.e. wetlands);
- active protection of plants and animals threatened with extinction;
- tourist infrastructure in national parks and reserves of a biosphere type.

In the waste management sector:

- comprehensive systems of utilisation of communal waste for 50 000 - 250 000 inhabitants;
- elimination of hazardous waste from industrial processes.

If priorities are set by the type of project, some of the major project types are provided in Table 2 below.

Table 2.Types of projects

Type of activity	Description
Investment	Support for projects that involve construction and installation of process or abatement control equipment
Equipment procurement	Purchase of equipment used in environmental and natural resource management
Research	Support for environmental research, typically to universities, research institutes, and NGOs
Education and awareness	Support for environmental education and awareness-raising programmes, administered by agencies, local governments, NGOs, universities, and schools
Training	Support for natural resources training to increase capacity of institutions and stakeholders
Land acquisition	Purchase of land for parks and protected areas, habitat protection, buffer zones; could also include purchase of development rights to keep land in current undeveloped uses
NGO capacity	General support for staff, buildings, and equipment, capacity building of staff through training
Management support	Direct support for staff and equipment needed to manage parks, protected areas, restore habitats, provide complementary infrastructure
Habitat restoration and protection	May involve some capital and infrastructure investments, species propagation, etc.
Contamination cleanup investments	These cleanups involve removal of contaminated material from sites that may impact protected areas

For investments, the major project category from both an expenditure perspective and in terms of the concentration of public resources, additional differentiation of priorities can be examined. A brief discussion of the following types of investment project priorities is provided below:

- large and small investment projects. The agency should analyse the potential benefits from supporting a few large projects versus the benefits of supporting many small projects. Often the agency can find some balance between small and large projects, partly by limiting the share or total amount of funding provided;
- commercial and non-commercial projects³. If commercial investments are to be supported, the agency needs to conduct a thorough analysis of capital markets and review rules that may apply to the provision of subsidies to private firms;
- innovative investment projects. These are projects for which no reference installations exist in the country, or that are even a novelty in international terms. It is obvious that such projects present much more risk of failure to achieve anticipated environmental benefits than typical projects do. This also applies to the transfer of the best foreign technologies to the country. A number of comprehensive engineering, economic, and marketing studies should be carried out before a decision is taken to provide support or not for such cases;
- new versus ongoing projects. Generally, support for ongoing projects should be discouraged.

³ Commercial projects are those projects which when completed, are capable of generating profit relatively rapidly (in not more than a few years) in excess of the investment costs incurred. Non-commercial but socially viable projects do not necessarily yield profits and then only if the discount rate applied is zero or very low and the timeframe more than 10 years.

Choice of form of subsidy

An important element of the expenditure programme and a major eligibility criterion is the form and levels of financial support provided to various environmental sectors and various groups of beneficiaries. The clear and unambiguous definition and dissemination of funding rules in advance of the project cycle is essential in guiding applicants in developing their proposals and determining the level of co-financing support to seek from the agency.

Two major issues are discussed in this section:

- The concept of additionality and co-financing requirements; and
- Different forms in which the agency can disburse the subsidies it manages and their respective advantages and disadvantages.

The “additionality” of implementing agencies

Ideally, the agency should provide no more project support than is absolutely necessary for the beneficiary to proceed with the project. This principle – referred to as *additionality* – means that the agency’s resources are complementary to the financing the beneficiary can secure from other sources. In practical terms, additionality is ensured through the co-financing requirements imposed by the agency. To the extent that the agency can establish rules consistent with the concept of additionality, it will enhance its capacity to support the greatest number of projects.

In order to better determine the level of co-financing as well as the types of financing that will catalyse investments, the agency can carry out an analysis of economic trends, the state of financial and capital markets, and applicants’ own sources of financing.

Economic trends

Each agency operates in changing economic and social conditions of its country as well as changing legal and regulatory environmental framework and standards. The overall macroeconomic situation in the country has a direct impact on the funding rules of the agency. If, on the one hand, the country’s economic situation is deteriorating, many investors will be unable to make even the most essential investments in environmental protection measures. This can also be the case when after several years of intensive investment activity to improve product quality and/or reduce production costs, many businesses and local authorities remain trapped in debts so severe that they are not able to undertake new environmental investments until they have repaid their loans. In this case, the agency may need to offer more attractive financing terms to encourage investors to undertake environmental projects. On the other hand, at times of economic growth, public assistance – especially in the form of grants – should be provided with particular care in order to ensure that the polluter pays principle is not violated. In either case, the financial terms and products offered by the agency should be regularly reviewed and adjusted accordingly.

Tracking changes in banking conditions

The government should make sure that the agency does not compete with the banking sector. A commercial bank raises its capital on the commercial market while the agency disburses public resources, hence their transaction costs are not comparable and such a situation creates unfair competition. If there are signs that this is happening, the financial terms of the agency should be

modified. In addition, the government should encourage the development of the banking system as a viable source of financing.

In Slovenia, the Slovenian Environmental Development Fund was originally established and mandated to provide loans at near market terms. Over the years, with the development of the banking and financial sector in the country, commercial bank interest rates were considerably lowered and the Fund's loans ceased to be attractive. As a result, the Fund's charter was modified and for the last several years, the Fund has been providing grants to projects which cannot be implemented without public support.

Financing sources of the applicant

Another important area of ex ante analysis concerns the financing sources of applicants. In other words, what share of project costs can be co-financed by applicants? Such analysis can be useful in establishing co-financing rules for the agency; if certain groups of applicants have better access to capital, other grants, or can use own resources, the agency may offer to finance a smaller percentage of project costs for a class of applicants. While it is difficult to anticipate the needs of individual applicants, some general factors can be considered in determining the financing capabilities for the two major groups of applicants: private sector firms and municipalities or municipally-owned facilities.

(i) Support from other agencies/funding sources

Where a number of funding options exist, it is necessary to examine the priorities, typical support levels, and the number of projects supported by the respective agencies. Such analysis will help the agency determine the level of support to offer for certain types of projects and applicants.

When there are different funding sources available to finance projects in the country, the organisation of the application process and setting co-financing rates for individual projects is an important issue. The following scenarios might be considered: (1) applicants submit requests to different funding sources at the same time, indicating the share of project financing requested from each agency; (2) by agreement among the various funding sources, an application sequence can be established (e.g. submit application to regional fund first, determine if support is forthcoming, then submit the application to the national fund).

Under the first scenario, due to the level of uncertainty with regard to receiving support from one or more of the funding sources, the project may end up with a financing gap for which additional resources will need to be sought. In this case, applicants will need to develop a contingency financing plan using alternative sources. Under the second scenario, there is a clear increase in the time required for the applicant to secure project funding because of the sequencing of the application to different funding sources. This second approach reduces the uncertainty in the financing plan since the level of support from the first agency is already known when the application is submitted to the second agency. However, if the second agency rejects the application, a contingency financing plan will still be needed.

(ii) Own resources: public sector facilities

For municipalities and municipally-owned companies, the major own revenue sources are budgetary resources generated from local taxes, direct transfers from the state budget and user fees. These own resources may be used directly for investments or more typically, to service debt associated with loans from commercial sources or environmental funds. For large investments in wastewater

treatment, solid waste, and district heating, significant increases in user fees for households and businesses are often necessary to recover the costs of investment.

Depending on the relative wealth of the population and, possibly, of the region concerned, a decision has to be taken with regard to the share of the costs to be borne directly by the households receiving the services and the share to be financed from other sources. Minimum and maximum values have to be stipulated by policy makers within the framework of the assistance/financial instrument. Measures of affordability (e.g. percentage of household income devoted to public services) may be used to evaluate ability-to-pay.

(iii) Own resources: private sector firms

For private firms, the major sources of own resources include savings, current revenues/profits, capital that can be raised on financial markets, and commercial loans. As a programming issue, it is difficult to anticipate what share of project financing private sector firms can raise from own sources. However, the general economic situation within various sectors, as well as the strength of capital markets can be useful factors in assessing private sector firm resources. In addition, the agency may track the trends in co-financing amounts requested in applications. This will be a good overall indicator of the capacity of private firms to finance projects from their own retained earnings. For example, while the agency may have established a maximum co-financing level of 50%, applicants may be requesting a lower level of support, particularly if the share of project costs requested is used as a criterion to evaluate applications. These levels need to be monitored and regularly adjusted. Hence, the agency needs to follow closely how the average co-financing amounts requested by applicants change from one year to the next.

Annex II suggests possible options for the range and type of co-financing rates that can be provided to different recipients for different types of projects. In addition, an example of the levels of funding offered by the Polish EcoFund across different types of beneficiaries is added.

Financial instruments

There are different types of financial instruments that the agency can use. These include:

- matching grants;
- “soft” loans;
- interest rate subsidies;
- loan guarantees;
- equity investments.

Of these mechanisms, grants and soft loans are by far the most common forms of disbursement used in the EECCA region so far. Brief descriptions of each mechanism are provided below. The choice of the financing instrument should be primarily driven by pragmatic considerations. Financial products should be designed to make the project happen on the ground and should send right signals, encouraging efficient and result-oriented behaviour. It should be noted that all above instruments provide subsidised financing as they contain a grant element in one form or another.

Financing instruments should be selected and designed so as to overcome the major bottlenecks to financing certain environmental investments. These bottlenecks can include, for example, interest rate mismatch, maturity mismatch, project preparation costs, or access to finance for a particular group of borrowers. **Instruments should be tailored to the profile of project owners and the cash flow profile of projects.**

Grants

The most attractive source of financing for environmental investments from the perspective of the applicant is a grant. A grant represents a direct transfer of funds from the source to the recipient. It is transparent and does not require repayment by the recipient, although other conditions may be attached to the grant by the source (e.g. repayment if the recipient does not apply the grant for the intended/contracted purposes if the project fails to reach the initial objectives). Virtually all conservation trust funds and most environmental funds in CEE/EECCA disburse all or some of their resources as grants. Grants are simple to administer and involve little financial risk for the agency. Because they are so attractive from the recipient's perspective, they can be effective in leveraging other sources of project financing if they are used selectively to cover only a portion of project costs. However, for some types of projects (e.g., support for research, NGOs, education programmes), it may be necessary to provide 100% of support because co-financing may be difficult to secure.

The major drawback of grants is the "moral hazard" sometimes associated with "free money"⁴. Because grants do not provide sufficient incentives to beneficiaries to save the resources, projects that receive grants require special monitoring of the results achieved. In addition, applicants often expect that if they pay pollution charges they should automatically be entitled to obtaining grants no matter what the quality of their project proposals.

Matching grants are transparent and easy to manage. They can be most precisely targeted at the non-revenue generating projects or project components. Grants can be easily blended with private finance and leverage sustainable commercial funding to environmental projects.

Soft loans

Soft loans are used by many of the environmental funds in CEE countries and feature loan terms and conditions that are more attractive than those prevailing in the commercial market. These loans are "softened" in one or more of the following ways: reduced interest rates, allowance for grace periods, and longer payback periods.

Soft loans are the preferred instrument in countries with underdeveloped financial markets, e.g. with short maturities, high spreads⁵ or credit rationing⁶. Soft loans generate revenues as borrowers repay principal and interest, thereby enabling funds to "revolve" provided default rates are low and the real value of repayments is not eroded by inflation. Implementation is often faster because loans are believed to send the right signals to project owners. Soft loans tend to engage more stakeholders to

⁴ In economics and ethical theory, the term moral hazard is used for any situation where a person or organisation does not bear the full adverse consequences of its actions.

⁵ The difference between interest rates on deposits and interest rates on loans.

⁶ A concept in economics and banking which describes the situation when a bank limits the supply of loans, although it has enough funds to loan out, and the supply of loans has not yet equalled the demand of prospective borrowers. Changing the price of the loans (interest rate) does not equilibrate the demand and supply of the loans. The bank finds that raising the interest rate beyond a certain level actually reduces its profitability.

hold recipients accountable for project results, because debt has opportunity cost to firms as opposed to grants. Soft loans also address the moral hazard associated with grants and encourage greater financial discipline on the part of borrowers.

Soft loans have some drawbacks. Most importantly, there is the risk of default on loans. While agencies can require borrowers to provide collateral to secure their loans, public environmental funds/implementing agencies are not usually established to accept property in the case of default. Soft loans also entail higher administration costs than grants because of the added burden of conducting the full evaluation of applicants as well as managing repayments.

Theoretically, soft loans compete with commercial loans and could severely attenuate the demand for commercial loans for environmental investments. Whether such crowding out is observed in practice depends on the size of the market for credit and the relative number and magnitude of soft loans provided by the agency. Another issue related to soft loans is their suitability for financing large investments in infrastructure for which costs are recovered over a period of 15-25 years. For revolving funds, such long repayment periods would seriously limit the level of working capital. As a result, most funds offer soft loans only for much shorter payback periods of 3-5 years.

Interest rate subsidies

An interest rate subsidy is a special case of a direct grant. The interest rate subsidy is used to reduce the effective interest rate on a loan. Its value may be stipulated as a fixed amount (e.g. percentage of investment, or absolute amount established by the agency) or more typically, as the difference between total interest payments over the life of the loan at prevailing commercial interest rates minus interest payments for a lower subsidised rate. In some cases the interest rate subsidy is pegged to a particular target interest rate (e.g. 5% or 10%) or specified as a percentage reduction such as 2% or 5% below the commercial rate.

The interest rate subsidy can be viewed as a rebate granted by the creditor or - more typically - by a third party such as an environmental fund or donor. The crucial difference between an interest rate subsidy and a grant is that the latter can be extended independently, or even in the absence, of additional financing. On the contrary, the interest rate subsidy is conveyed only after the project has already met financial and creditworthiness criteria leading to a lender's willingness to invest in it. Thus, the main prerequisite for using an interest rate subsidy is the existence of a well-developed commercial banking sector in the country.

Loan guarantees

A loan guarantee is a mechanism by which a third party assumes a legal responsibility to compensate a lender if the borrower defaults on a loan. Theoretically, loan guarantees can be provided by any legal entity with the necessary financial resources deemed acceptable to the lender. Depending on the credit risk associated with the proposed loan, the guarantor may be required to reserve or hold only a portion of the loan amount. From an environmental agency's perspective, the provision of guarantees enables the agency to support a volume of investments that is four to five times the amount of resources required for the guarantee. Loan guarantees have been provided by the Czech State Environmental Fund, but other CEE or EECCA funds have not yet used this mechanism. In CEE countries, facilities/enterprises have often experienced difficulty in securing commercial loans to finance environmental investments, because the project and/or applicant fails to satisfy the lender's financial criteria. However, if the borrower can provide a loan guarantee, the lender may issue the risky loan.

Loan guarantees reduce the risk of loan default and can be beneficial in lowering the interest rates charged for lower risk commercial loans. They may provide the only effective mechanism by which environmental agencies can support large infrastructure loans with long repayment periods. However, such guarantees require the agency to maintain a reserve and may limit its current capacity to support projects. As with soft loans, the issue of collateral must be considered, as the agency, acting as the loan guarantor, agrees to repay the loan if the borrower defaults. Consequently, the agency needs to have skilled and qualified staff who are able to analyse risks properly.

Equity investments

For private enterprises, equity can be viewed as a source of capital that is used for a variety of purposes such as expansion of operations, modernisation, or short-term debt financing. Environmental equity refers to capital that is earmarked for environmental purposes rather than general operations of the company. As a result, the equity may be available on more attractive terms than for other capital. This mechanism is most common for start-up businesses that plan to manufacture environmental control equipment or provide consulting services. Equity is most often used in providing support to new or innovative environmental protection businesses.

In providing support to equity investments, the agency buys shares in the enterprise. These shares can then be sold later on at a profit. A serious problem related to this instrument is the choice of the time when the agency decides to sell its shares. The right choice of the exit strategy requires knowledge which is not readily available in most of the CEE and EECCA environmental funds. So far, a few CEE funds have made equity investments (e.g. the Polish National Fund).

Table 3 below shows a possible mix of subsidy instruments with regard to different types of projects.

Table 3. Mix of subsidy instruments

	Grants	Soft Loans	Interest rate subsidy	Loan guarantee	Equity investments
Non-revenue projects	X			X	
Non-commercial projects		X	X		
Innovative projects		X			X

Considerations on the size of projects

Whatever type of financial instrument is chosen, this should be done in line with national legislation. In addition, the choice should take into account other financial sources and products in use in the country.

One more dilemma is related to the amount of resources provided to individual projects. This applies to both the **lower and upper limits of financial aid**. A lower limit should be fixed, inasmuch as the agency's costs of servicing a project may even exceed the level of financial aid granted if the latter is too small. It should be pointed out that processing small projects often requires the same level of labour (and sometimes even more) as for large projects. It is therefore strongly recommended that a

lower limit of financial aid be determined empirically by reference to the labour cost for processing an average project. On average, such costs should not exceed 20 to 25% of the amount granted in financial support of a project. A lower (as well as an upper) limit can be set for certain types of projects or even to distinguish clearly between activities of different funding sources (to harmonise funding policy countrywide).

On the other hand, the administration unit should try to reduce the costs of processing small projects by unifying and simplifying the procedure. For instance, in the case of a large number of small similar projects usually undertaken by private investors, opening a credit line with a bank is a convenient way to process such projects. The usual division of labour between the agency and the bank is: the agency covers part of the costs of servicing the credits (thus giving them a preferential character), or even funds the interest on such credit in full, whilst the bank provides the full scope of servicing for the beneficiaries. In the case of the Polish EcoFund, the lower limit for a single grant cannot go below PLN 50 000 (about Euro 13 000).

At the other extreme, there are huge investment projects (e.g. those implemented in the power-supply sector or the construction of wastewater treatment plants for large urban agglomerations) where the general rules for providing financial support are not applicable because of the limited amounts of money at the agency's disposal. Such situations should also be provided for in the agency's operational programme, also because such projects are among national priorities and should be given financial support from various sources.

Developing financial plans

Developing annual financial plans constitutes the core of programme budgeting and good financial management. Programme budgeting has two major aspects: **revenue forecasting** and **expenditure planning**. This section will look at more detail into these two issues and will offer a number of tools that can be used in budget formulation.

Revenue sources

Implementing agencies and other types of environmental expenditure programmes may generate annual working capital from a number of sources. Table 4 provides an overview of the most common revenue instruments used in CEE and EECCA environmental funds and expenditure programmes. For each instrument, a short description and examples are provided, along with a synthetic analysis of the revenue principle, strengths and weaknesses, sustainability, and the non-revenue benefits (usually because of the incentives for reducing environmental harm provided by the instrument) resulting from the implementation of the instrument.

Table 4. Revenue instruments

Budget allocations	
Description:	Transfer of state treasury resources to account of agency; may be general or earmarked revenues
Examples:	Budget allocations (Slovak Republic, Mexico, Austria); Proceeds from privatisation sales (Czech Republic, Estonia, Germany, Slovenia); Austrian environmental funding system
Revenue principle:	Political Prioritisation
Strengths:	Source is available on annual basis and the amount is known and reasonably certain
Weaknesses:	Access to resources is competitive with other sectors, many of much higher political priority
Sustainability issues:	Government commitment to sustain support for agency's expenditures
Non-revenue benefits:	Improved accountability, performance basis for sustained allocations
Pollution charges	
Description:	Levies on air pollutant emissions, water pollutant discharges, waste disposal
Examples:	Air, water, and waste fees and fines (Polish National and Regional Funds, Hungarian Environmental Fund); Marine damages (Egyptian Environmental Protection Fund)
Revenue principle:	Damages/Negative externalities (Polluter-Pays-Principle)
Strengths:	Credible with public because of clear link between payment and damage to the environment; annual and permanent source of revenue
Weaknesses:	Amount is not known and subject to collection and enforcement effort; usually collected by local officials without incentive to attain high collection rate. Where tax authorities are involved, results can be much better (e.g. Ukraine)
Sustainability issues:	Increase per unit rates and/or expand collection base to maintain revenues as pollution per facility declines
Non-revenue benefits:	If rates are high enough, may create incentives to reduce pollution
Pollution fines	
Description:	Fines on amounts exceeding allowable levels and often levied at a higher rate than charges; fines for illegal or accidental discharges
Examples:	Land Use Fines (Slovenia), air/water pollution fines (Bulgaria, Czech Republic, Hungary)
Revenue principle:	Damages (Polluter-Pays-Principle)
Strengths:	Annual source of revenue
Weaknesses:	Amount is not known and subject to collection and enforcement effort; collection rates usually very low, in EECCA in particular not easy to enforce
Sustainability issues:	Increase per unit rates to maintain revenues as pollution per facility declines
Non-revenue benefits:	If rates are high enough, may create incentives to reduce non-compliance violations
Natural resource taxes	
Description:	Levies on the consumption/extraction of renewable and/or stock resources
Examples:	Mineral extraction charges (Estonia, Polish National Fund)
Revenue principle:	Benefits Principle
Strengths:	Once rates are established, reliable source of revenue
Weaknesses:	Weaker link between revenue source and environmental projects than for environmental charges and fines; amount collected annually depends on economic factors outside control of the agency
Sustainability issues:	Renewable versus Stock resources; indexing of nominal tax rates
Non-revenue benefits:	May encourage improved efficiency, substitution of less expensive alternatives, recycling
Product charges	
Description:	Levies on products that contribute to excessive levels of pollution or waste
Examples:	Fuel charges (Bulgarian National Fund, Hungary, Moldova, Austria); charges on packaging (Latvia); other product charges (Hungary)
Revenue principle:	Damages (Polluter-Pays-Principle)
Strengths:	For most products, easy to assess and collect, particularly at the producer level
Weaknesses:	Weakly linked to environmental investments; may create or exacerbate trade distortions depending on applicability (domestic products versus imports)
Sustainability issues:	Charge rate must be sensitive to changes in demand, GDP growth, and technological change
Non-revenue benefits:	If rates are high enough, may induce use of substitutes that create less pollution or

	waste
User fees	
Description:	Fees assessed on users of parks and tourism facilities, environmental services such as water supply, wastewater treatment and waste collection
Examples:	Tourism tax (Belize)
Revenue principle:	Benefits Principle, Ability-to-pay
Strengths:	Easy to assess and collect, best used where service is linked to investment
Weaknesses:	In poorer countries, may not be affordable or generate acceptable revenues as acceptable user fee rates
Sustainability issues:	Depends on availability of substitutes
Non-revenue benefits:	Users may demand higher quality products (e.g., waste collection services, park facilities)
Permitting and licensing fees	
Description:	Fees assessed for the services provided by agencies issuing permits and licenses
Examples:	Administrative fees (Bulgarian National Fund); Permitting fees (new Romanian National Fund)
Revenue principle:	Benefits Principle, Ability to Pay (if fee related to value of asset for which license required)
Strengths:	Easy to assess and collect
Weaknesses:	Limited revenue potential, weak link to environmental investment
Sustainability issues:	Maintaining fees at levels that cover costs of providing these services
Non-revenue benefits:	Facilities may demand improved regulatory process (e.g., fewer delays, improved review)
Donations	
Description:	Individual and corporate gifts
Examples:	Individual donations (Egyptian Environmental Protection Fund)
Revenue principle:	Willingness-to-pay, Ability to pay, Benefits Principle
Strengths:	Voluntary nature makes them acceptable to all groups
Weaknesses:	Generate limited revenue, may require considerable expense to generate
Sustainability issues:	Public awareness campaign, maintenance of collection sites, favorable tax treatment for large donations, installation of a revolving fund
Non-revenue benefits:	Creates fewer distortions in markets, mechanism for soliciting donations can increase public awareness
Grants	
Description:	Bilateral and multilateral assistance in form of grant or debt forgiveness; private sector or NGO debt forgiveness
Examples:	Grant for agency start-up (EU to Lithuania and Latvia); Endowment grants (Global environmental Fund (GEF) to numerous countries); Debt-for environment swaps (Switzerland to Bulgaria, U.S., France, Italy, Switzerland, Sweden and Norway to Poland; private debt-for-environment swaps (brokered by the World Wide Fund (WWF) in Philippines)
Revenue principle:	Political prioritisation
Strengths:	Doesn't displace other domestic spending
Weaknesses:	Limited application, often only for start-up activities; may include numerous conditionalities that must be approved by the State
Sustainability issues:	Not sustainable, typically one-time or limited term
Non-revenue benefits:	May encourage more accountable and transparent procedures
IFI loans	
Description:	Loan from World Bank, European Bank for Reconstruction and Development (EBRD) or other IFI for initial capitalisation of agency
Examples:	World Bank loans to set up a National Pollution Abatement Facility in Russia and Slovenian Environmental Development Fund
Revenue principle:	Willingness-to-pay, ability-to-pay, political prioritisation
Strengths:	Can provide substantial start-up capital; useful for establishing revolving funds, particularly if provided with grace period and favourable interest rates
Weaknesses:	Upfront administrative costs, sovereign guarantee may be required to secure loan
Sustainability issues:	Generally, not sustainable, typically one-time or renewable
Non-revenue benefits:	May encourage more accountable and transparent procedures

In addition, Table 5 illustrates the different sources that are used to generate annual working capital for selected CEE environmental funds. Box 4 describes the trend in revenues for the Polish EcoFund.

Table 5. Revenues and disbursements for selected CEE Environmental Funds

Country and funds	2000 Revenues (mln USD)	Major sources of revenue (% of revenue)		Major disbursement mechanisms (% of funds)	
		Leading source	Second source	Major mechanism	Second mechanism
Bulgaria: National Environmental Protection Fund	23.8	Product charges (Charges on liquid fuels) - 83%	Non-compliance fees – 4.5%	Grants - 60%	Interest-free loans - 30%
Bulgaria National Trust Fund (1999)	3.3	Debt swap – 94.6%	Financial operations – 5.4%	Grants – 98.2%	Interest-free loans – 1.8%
Czech Republic: State Environmental Fund	90.2	Pollution charges – 50.3%	Loan repayment (incl. interest) - 40%	Grants – 69.3%	Soft loans - 26%
Hungary: Central Environmental Protection Fund	102.2	Product charges (lubricants) - 51%	State budget transfer – 30.5%	Grants – 94.8%	Interest free loans – 5.2%
Poland: National Fund for Environmental Protection and Water Management	364.6	Loan repayment (incl. interest) -59.2%	Pollution charges and fines – 27.8%	Soft loans – 72.2%	Grants – 25.6%
Poland: Eco Fund	38.5	Debt swap - 81.1%	Financial operations – 9.7%	Grants - 100%	-
Poland: Krakow Regional Environmental Protection Fund	24.6	Pollution charges- 46.7%	Loan repayments (incl. interest) – 39.9%	Soft loans – 84.7%	Grants – 15.3%
Slovak Republic: State Environmental Fund	32.4	Pollution charges – 61.9%	Privatisation proceeds – 25.4%	Grants – 94.2%	Soft loans – 5.4%
Slovenia: Environmental Development Fund	21.4	Loan repayment (incl. interest) -60%	Foreign grants – 25.9%	Soft loans - 100%	-

Source: Environmental Funds in the Candidate Countries, REC, 2001.

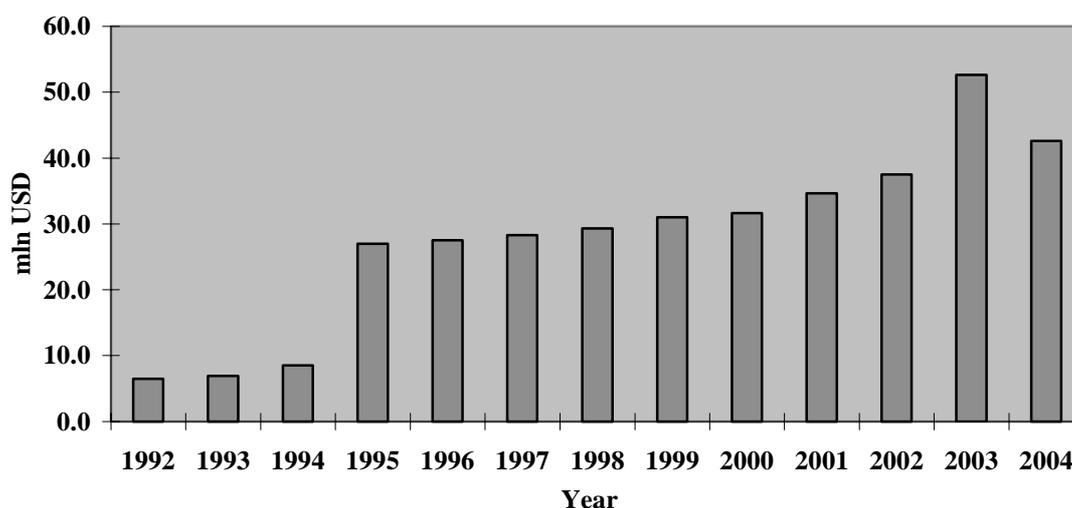
As can be seen from the Table 5, the most commonly used revenue instruments among the CEE Environmental Funds are pollution charges, product charges, and loan repayments. These are followed by privatisation proceeds, financial operations, state budget transfers, foreign grants and/or IFI loans.

Box 4. Revenues of the Polish EcoFund

Thanks to the Polish-debt-for-environment-swap scheme implemented by six creditor countries (the USA, France, Switzerland, Italy, Norway Sweden (Sweden participated in the scheme till 2003), the EcoFund Foundation has had a stable and certain source of revenues. Pursuant to the agreement signed by Poland in 1991 with the creditors of the Paris Club, half of the debt of Poland was cancelled and the other half was agreed to be paid back by 2010. A part of that paid-back money is now transferred to the EcoFund's bank account.

During the planned period of its existence (1992-2010), the Polish EcoFund expects to receive revenues in amount of USD 571 mln. By the end of 2004, the EcoFund had received the amount of USD 350 mln in total from the debt-for-environment-swap scheme, i.e. 60% of the total amount that has to be transferred to the EcoFund. The figure above shows the trend in EcoFund's revenues from that source over the period 1992 to 2004, in US dollars. It should be stressed, however, that the EcoFund actually receives the money in Polish currency, in amounts calculated according to the exchange rates adopted by the National Bank of Poland on the days when individual instalments become due and payable, as stipulated in the debt-for-environment-swap agreements concluded between Poland and its individual creditor countries.

Figure 2. EcoFund's revenues from the Polish DFES, 1992-2004, M USD



In order to achieve its objectives and meet its commitments as well as prepare realistic budgets, the agency needs a predictable and stable revenue stream. Hence, the revenue composition is of utmost importance. The stability of the revenue flows is sometimes even more important than the amount of revenue. The composition of revenue sources should ensure a flow of resources in amounts sufficient to achieve agency's objectives on time, and without creating distortions or destabilisation in the economy. Ideally, the revenue sources should not compete with, or crowd out, revenues of the state budget. Pollution charges, as a specific instrument of environmental policy and **additional** to the instruments of raising revenues for local or national budgets, presents such an option.

Experience shows that whenever other bodies are involved in the collection of revenue from pollution charges they need some incentives to do so effectively. Otherwise, it is just an additional burden for them and the revenue collection may be sluggish. So, if the tax authorities were to be involved it is worth considering some revenue sharing arrangement with the budget. The budget share could be diminishing over time. It could be as high as 60% in the first year to help motivate tax authorities to establish strong revenue collection procedures up-front. The legislation can postulate

that progressively, this share should diminish and reach an ultimate target of 20% for example, 3 years after the instrument is implemented.

Precise planning of revenue will be a very important condition for the agency to implement effective spending strategies. Therefore, the revenue sources that are highly erratic and unpredictable will bring little benefit to the agency. The experience of the CEE and EECCA Environmental Funds indicates that non-compliance fines contribute very little revenue and are very hard to predict. In addition, the cost of their collection is very high and not even sufficient to cover the costs of monitoring and enforcement of Environmental Inspectorates to inspect facilities.

Undertaking risky investments on financial markets with the aim of generating additional revenue is not commendable either. Bank deposits and state securities, such as government bonds or treasury bills, are few instruments the agency could invest in, although experience shows that in some regions and under certain conditions even these instruments may be risky. By the same token, investments on the capital market should not be allowed to the agency. Acquiring or receiving enterprise shares or securities (bonds, veksels) may diminish the agency's profile and credibility and may easily wipe out its resources. Trading these securities against cash on the market also requires a great deal of management time and human resources.

Product charges are payments on products that at one point of their lifecycle (production or consumption) pollute the environment. Usually they provide a stable and predictable flow of resources. Product charges have relatively low administrative costs and are easy to collect. Product charges are spreading further in both CEE and EECCA countries and more experience is being gained with their application.

Whatever the sources of revenue for the agency, these should be clearly indicated in its enabling legislation. The revenue should only be received in cash. No surrogate money should be accepted from polluters. In short, the sources of revenue should:

- ensure a predictable and stable revenue stream and be consistent over time;
- keep up the level with the increase of inflation;
- introduce a diverse revenue base;
- have a low cost of administration – administrative simplicity and low monitoring cost;
- have a low probability of evasion;
- not introduce economic distortions with regard to impact on competitiveness of industry.

Budget planning

Once the agency has decided on the programmes that will be supported and the revenue sources have been identified, the agency staff can start planning the budget – the revenues needed and the expenditure to be made.

Budget planning involves the elaboration of estimates of revenues and expenditures to ensure there is no shortfall during the planning period. The budget planning period is typically of greater than one year's duration, reflecting the fact that many environmental projects will take several years to implement (e.g. wastewater treatment plant construction, landfills, etc.). A frame of 3-5 years is

normal and includes individual annual budget plans for the next year and subsequent years. Generally, the out-year budgets are less detailed and include estimates for new projects and commitments for projects already approved but still in implementation. In most countries, guidance on the process and scope of the budget plan is formalised in the legal hierarchy. Such a legal status for budget planning imparts a level of predictability onto the process and ensures accountability. Ideally, the first step in budget planning is to secure funding for the expenditure programme. The amounts determined and politically agreed in the overall programme should also be guaranteed in a legally binding form, i.e. in acts of parliament. At any rate, this legal certainty should be achieved at least for the medium term.

The main goal of financial planning is to bridge the gap between the available sources of revenues on the one hand and the investment plans on the other hand. It should also aim to ensure that expenditures are smoothly financed throughout the year and that all targets from the operational plan are met. The annual financial plan is usually set up in the third quarter of the year for the following year, which is also a fiscal year. For adequate financial planning, it is essential to know how much money can be expected in the next year and if the revenues are guaranteed. The availability of the source is usually determined by the legislation and other operating acts of the institution, and yet the revenue forecasting remains the difficult part of financial planning.

The main elements of the budget include:

- balance of the previous year;
- income from revenue sources;
- project implementation costs (for on-going and new projects with subsidies paid in the current year)
- administrative costs (good practices require that these are not higher than 4-5% of all expenditure, in the case of the Polish EcoFund – they amount to 3.5% per year).

Long-term planning is an essential part of good management, necessary for setting up a good investment policy, while a short-term financial plan and budgeting are important for the day-to-day operations, i.e. for balancing of the revenues and expenditures for the next year. Both revenue and expenditure should be recognised according to the cash flow principle.

Tables 6 and 7 below offer simple management tools for annual revenue and expenditure planning.

Table 6. Plan of revenues

Type of revenue	Amount of revenues				
	Previous year	Current year budgeted	Current year estimated	Following year budgeted	Following + 1 year budgeted
National budget					
Interest on loans given					
Pollution Charges					
<i>Air</i>					
<i>Water</i>					
<i>Waste</i>					
<i>Other</i>					
Repayment of loans granted					
Borrowing abroad					
Total revenues					

Such a table helps to recognise the source and the amount of revenue on a yearly basis. It is also recommended to add columns to compare the changes in percentage or by index between the budgeted and the achieved values. This is a good starting point for forecasting the expenditures.

As a minimum, the expenditure plan should include:

- Estimation of fixed expenses (those that cannot be delayed, such as payment of loan interests, payments referring to labour costs, costs of material and other costs of goods and services, which have to be performed daily);
- Forecasting the repayments of debt (if appropriate);
- Forecasting the purchase of fixed assets;
- Determining available amounts for eligible financing mechanisms: grants, soft loans, interest subsidies, loan guarantees.

Apart from the fixed expenses (the first three ones in the above list), necessary for performing the adopted operational plan, there are other fixed costs related to different financial products, especially loans provided by the agency, such as:

- costs for establishing the collateral (evaluation of the property for mortgage purposes, lawyer's fees, etc.);
- fees for environmental and financial monitoring of the investments (bank charges, fee for billing the statement for each loan, other fees for bank services, technical assistance in environmental monitoring, etc.).

Table 7. Plan of expenditure

Type of expense	Amount of expenses				
	Previous year	Current year budgeted	Current year estimated	Following year budgeted	Following + 1 year budgeted
Fixed expenses					
• Salaries and other labour costs					
• Expenses for goods and services					
• Repayments of debt					
• Purchase of fixed assets					
Σ fixed expenses					
Type of financial product					
• Grants given					
• Loans granted					
...					
• Variable costs related to the products					
Σ investments					
Total expenses					
Remaining revenues (total revenues – total expenses)					

Institutional structures for managing environmental expenditure

Once all other essential elements constituting the expenditure programme have been clarified, the government agency with a responsibility for the programme implementation can move to selecting the most appropriate institutional arrangement. There are a number of different institutional forms that can be established to manage public environmental expenditure programmes. Regardless of the institutional form, public environmental expenditure management should involve institutional structures and procedures that promote environmental effectiveness, embody fiscal prudence, and utilise financial and human resources efficiently.

Institutional forms

There are a number of different institutional arrangements that can be employed to manage public environmental expenditures. These arrangements vary according to the type of institution, the relationship of the institution to the government, and the source of funds. Three basic institutional forms can be distinguished among these arrangements: 1) governmental implementation units; 2) environmental funds; and 3) directed credit or line of credit financial intermediaries.

Governmental implementation units mainly manage government budget resources, although one of these institutional forms – project implementation units – may also manage multilateral or bilateral grant resources. Governmental implementation units include the following institutional forms:

- *Government department* with responsibilities for procuring goods and services or financing specific projects within the state budget;

- *Project implementation unit* established within a government department to implement projects within a specific government expenditure programme included in the budget;
- *Autonomous/decentralised government agency* financed from the budget but created to decouple the delivery of services or administrative tasks from policy formulation;
- *Special purpose fiscal unit* created as an independent institution with restricted taxing powers (e.g. river basin water agency or forest agency);
- *Public utility* with the authority to collect user charges and the responsibility to develop, maintain and operate collective infrastructure (e.g. municipal water, solid waste or district heating company).

Environmental funds are the predominant institutional form for managing public environmental expenditure for a diverse group of project proponents in CEE and EECCA countries. Funds vary in terms of their legal status, their relationship to the government, the range of projects they support, the mechanisms used to disburse funds, and their sources of funding. Environmental funds may take one of the following forms:

- *Budgetary fund with its own management structure and autonomous, earmarked revenue source within the budget.* Such funds may be established within the government at the sector or regional level, with a portion of the working capital typically provided through transfers from the general budget;
- *Budgetary fund managed outside the government,* with its own autonomous, earmarked revenue source. Such funds may have independent legal status, although their revenue and expenditure plans are approved annually in the budget law;
- *Extra-budgetary fund, managed outside the government,* with its own, autonomous, earmarked revenue sources, independent legal status, and assets. Their revenue and expenditure programmes do not require annual approvals in the budget laws, although their budgets may be added to the general budget as an annex;
- *Special-purpose government-controlled fund* (revolving or not) owned by the government, but established outside of government departments and capitalised by one-time budgetary transfers (e.g. formerly the Slovenian Environmental Development Fund);
- *Independent intermediary for the government (grant or debt) expenditure programme.* The intermediary bears a contractual obligation to disburse government resources on terms and conditions specified in the agreement with the government. The types of institutions which may act as intermediaries include banks, leasing companies, and investment funds;
- *Government-(co)-owned public fund established to manage expenditure programmes co-financed from external loans or grants.* The legal status can take the form of a trust fund, a foundation, an association or a commercial code company. The Polish and Bulgarian debt-for-environment swap funds belong to this category.

Directed credit or line of credit financial intermediaries, at least in CEE and EECCA countries, typically disburse resources provided by donors or IFIs. These financial resources are usually earmarked for specific types of projects such as energy efficiency, waste minimisation, greenhouse gas reduction. The two main forms are:

- *Directed credit funds* (DCFs) established as financial intermediaries by either government, donor organisations or the IFIs, such as the World Bank. They are designed to finance small commercial or municipal pollution abatement projects. DCFs typically operate on a revolving basis, often for a predetermined period corresponding, for example, to the disbursement period of IFI or donor lending;
- *Counterpart funds* generated by sales of commodities or services provided through official assistance. They are managed under specific procedures and take into account the requirements of the donors.

Roles and responsibilities

In general, programming and project appraisal should be strictly separated. Programming is the responsibility of the government agency that is responsible for the oversight of the management of the expenditure programme (i.e. ministry of environment). Project appraisal is a technical process conducted by competent technical staff. However, some roles and responsibilities may be assigned or delegated to other institutions. Major reasons for this sharing of responsibility include the following: 1) management oversight; and 2) facilitation of participatory processes.

Management oversight

In real life, the implementing agency may have limited powers in setting expenditure policies and selecting projects. For legal reasons, contracts with beneficiaries may be approved and signed by senior managers in the environment or finance ministries. For CEE and EECCA environmental funds, for example, the management oversight is often provided by a supervisory board featuring representatives from key ministries, the parliament, scientific institutions as well as NGOs. IFIs or donors may provide management oversight in those instances where foreign funding is provided. Day-to-day activities are a responsibility of the agency's staff. In larger agencies, there is also a board of directors, with specific responsibilities, usually referred to as a Management Unit. Table 7 below provides an overview of the division of roles/responsibilities between the supervisory board and the management unit in accordance with good international practices.

The law or the statute of the agency should specify the number of the members of the supervisory body, the principles of their appointment and dismissal, their voting rights and the intensity of meetings. A compromise will have to be made between the principle of having an operational body and the principle of adequate representation of the main stakeholders. International experience of well functioning, similar institutions shows that the supervisory body may consist of 11-15 persons. Such a size is conducive to efficient deliberation or decision-making (however the size may vary in relation to the financial size of the expenditure programme). All members of the governing body will be appointed individually for a fixed term (e.g. three years). It is important that the supervisory body have a balanced representation of the agency's clients and public at large, such as municipalities, government administration at different levels, environmental NGOs, business organisations and Parliament, making sure that no single stakeholders' group dominates the process.

Table 8. Possible division of roles and responsibilities in the Implementation Unit

Role/Responsibility	International Good Practice
Internal Policies: <ul style="list-style-type: none"> • Preparation • Approval 	Management Unit, external consultants Supervisory Body
Establishing spending priorities	Supervisory Body
Budget: <ul style="list-style-type: none"> • Preparation • Approval 	Management Unit Supervisory Body
Internal documents and external reports: <ul style="list-style-type: none"> • Preparation • Approval 	Management Unit Supervisory Body
External communications	Agency Director, Agency's Communications Department
Project cycle management: <ul style="list-style-type: none"> • Identification • Processing of applications • Appraisal • Ranking of projects • Selection of projects • Contract preparation • Signing of contracts • Implementation / monitoring of projects 	Management Unit Management Unit Management Unit, consultants Management Unit Agency ranks and selects projects for financing and provides recommendations, Supervisory Body takes final decision Management Unit Agency Director, Chair of Supervisory Body, Minister (only in special cases of strategic importance) Management Unit
Financial Activities: <ul style="list-style-type: none"> • Approval of expenditures (signing of banking documents and invoices) • Financial monitoring and record-keeping 	Agency Director, Chair of Supervisory Body Fund's Financial Department

The supervisory body could be administratively liable for ensuring an appropriate use of agency's financial resources overall. But it is very difficult, under the legal order of most European countries, to make the supervisory body members liable for decisions on financing projects in the meaning of the civil law. There is a practical reason for this, too. Members of the supervisory body cannot practically have access to sufficient information on individual projects to take fully informed decisions on a case-by-case basis. For this, they will have to rely on the information provided by the management unit.

The management unit (including regular technical staff) should consist of highly qualified professionals recruited on a competitive merit basis and held responsible for their decisions. The management unit should be operationally independent and shielded from political pressures through the rules and procedures developed for the staff of the agency.

Participatory processes

To promote transparency and improve accountability, some of the programming activities may involve a variety of participants. For example, identifying project priorities may be vetted with local or regional authorities as well as central ministries and agencies. Comments on priorities or other programming issues may be solicited from the public, trade associations, NGOs. This is particularly important when the implementing agency lacks a well-formulated expenditure programme and needs broader public and political support for its development. Supervisory bodies for many CEE and EECCA environmental funds include members representing NGOs, trade associations, and local or regional governments. This also encourages and facilitates dissemination of information about the activities of Funds. Practical considerations of time, expense and achieving consensus will often

determine the extent to which other institutions and governmental entities, or stakeholder groups are involved in providing inputs to the programming process, taking decisions, or commenting on decisions.

Selection of the institutional form for environmental expenditure management

In selecting the form of the implementing agency, a number of factors need to be considered. These include, among others:

- the sizing of expenditure institution;
- the degree of management control;
- staffing requirements;
- lifecycle of the expenditure programme;
- nature of funding;
- types of disbursement mechanisms; and
- conditionality.

The first and most obvious factor is the **sizing** of the expenditure institution, based on the expected amount of financing and the number, type, and size of projects to be funded. For very simple expenditure programmes, involving a uniform type of good or service and a limited amount of implementation oversight, existing government institutions may be able to absorb the additional workload and responsibilities into their regular activities. As the expenditure programme grows in complexity and magnitude, institutional structures dedicated solely to the management of expenditure will be more appropriate.

A second factor concerns the **degree of management control** to be exerted by the institution over programming and project cycle activities. Generally, implementing agencies have primary responsibility for day-to-day operations but may share management control with other institutions. For example, most of the government implementation unit options are subordinated to management control by a higher governmental authority or governmental board that is responsible for establishing or approving priorities, and approving the expenditure budget. On the other hand, CEE environmental funds have greater management autonomy, although some of the programming and project cycle tasks may be guided by a supervisory body.

A third factor relates to **staffing requirements** to execute the expenditure programme. If there are significant differences in salaries between civil service positions and the salaries required to attract staff of appropriate skills, it may be prudent to establish an expenditure programme with the legal status of a non-governmental organisation, institution, or foundation, as is the case of the Polish EcoFund which was established on the basis of the Law on Foundations. On the other hand, remuneration at the Polish National Fund is also a par with the best paid government offices in Poland so that the Fund can retain highly qualified professionals.

A fourth factor concerns the anticipated **lifecycle** of the expenditure programme. For limited term programmes, it may be more appropriate to delegate expenditure programme functions to an existing institution.

A fifth factor is related to the nature of the **funding**. If revenue sources are stable and sustainable for a considerable period of time, institutional forms such as environmental funds may be most appropriate. However, if funding is associated with revenue sources that are uncertain and unpredictable, it may be desirable for existing institutions to execute the expenditure programme.

A sixth factor relates to the type of **disbursement mechanism** to be employed in the expenditure programme. If a programme envisages only the use of loans, it may be appropriate to implement the programme using existing banks or other financial institutions. Otherwise, the agency needs to develop strong in-house skills (as was the case of the Slovenian Development Fund). A third option could be, if for several years, loan portfolio management is outsourced to a bank while in-house capacities are developed. In any case, if outsourcing, in one or another form, is the preferred option, the implementing agency will need to pay a fee to the bank or the institution that will share this function with it.

Finally, there may be **conditionalities** imposed on the selection of the institutional form by suppliers of funding. For example, IFIs and donors may require an expenditure programme to be managed by an existing financial institution or stipulate that the expenditure programme be either under the direct supervision of a government agency, or alternatively, completely independent.

In the case of long-term expenditure programmes, the institutional form may undergo changes over time to adjust to changing demand for financing or shifts in priorities. One institutional form may be acceptable for a given funding level or to manage similar types of projects, but inefficient or unsuitable if substantial changes are made in expenditure programme parameters. Box 5 below describes the changes that were made in the institutional form used to finance environmental and water projects in Austria.

Box 5. Evolution of Austrian institutions for PEEM

In its evolution, the Austrian institutional system has gone through different stages over a period of approximately 50 years. The public Water Management Funding system in Austria was launched after the Second World War in 1948. It was established as a funding system within the Ministry of Trade and Reconstruction. Until then, all decisions concerning the financing of large investment projects (mainly water supply) were made by this same Ministry.

Eleven years later, the funding system was legally outsourced and handed over to the Water Management Fund. Although the Fund had its own legal identity, it was represented by the Ministry of Trade. Within this administrative framework, the "Fund" (in the sense of a legal entity) could respond more quickly and effectively to the changing needs of applicants. The Fund was fully restructured in 1978. Its main sources of revenue came from the Austrian system of sharing income generated through taxes which determines the division of revenue from taxes and fees between the federal, regional and local authorities. In 1984, a similar funding system was established with the purpose of financing air and soil protection measures in enterprises.

In 1987, both Funds were merged to form the Austrian Environment and Water Management Fund, which continued to exist as an independent legal entity, albeit institutionally integrated into the Federal Ministry of Agriculture, Forestry, Environment and Water Management (FMAFEWM). Until 1987, subsidies for water management projects were provided in the form of soft loans because commercial interest rates were very high (due to poorly developed capital markets), while air and soil projects were financed in the form of grants.

In 1993, after the collapse of the IT-system in the loan administration which caused a number of problems related to the loan portfolio management, the system was fundamentally changed. The Fund itself ceased disbursement activities and since has only existed as a financial body administrating "old" loans.

The responsibility for overseeing the funding system for all sectors is with the FMAFEWM but project appraisal and contracting have been fully outsourced to the Kommunalkredit Austria AG, a private bank. Furthermore, as capital markets reached their maturity, it became obvious that for decades the funding system providing loans actually absorbed a huge amount of resources. As a result, the water sector now is supported through grants only. In addition, the scheme was designed to link grants to commercial loans as applicants were required to cover the financing gap on their projects with credit from the banking sector. This increased the demand for bank credits. Thus, the public financing system helped facilitate the development of the private capital market.

In 2002, this last restriction on obligatory bank credits has been removed so that since then the beneficiary has been absolutely free to raise financing for his projects as he likes. The beneficiary can choose the cheapest form of financing. In addition, since 2002, the expenditure programme for the water management sector has been merged with the programme for the air and energy sector or the clean-up of contaminated sites and has continued to disburse resources in the form of grants.

Summary and guidance for decision-makers

The public environmental expenditure programme should be an integral part of a larger environmental policy and should support the implementation of strategic national objectives. Effective programming should be based on a systematic economic, financial and market analysis in order to establish the priorities of the programme. Programming and priority-setting is a major responsibility of the government however involving major stakeholders in designing it could significantly improve its chances for success.

The expenditure programme should have clear priorities and objectives. Programming also includes defining the rules that govern the allocation of resources across different priority areas. A well-developed and a realistic expenditure programme should also be specified in terms of sources of financing, types of projects and types of beneficiaries to be supported, financing instruments and terms of financing. Appraisal and selection criteria are clearly identified and specified in the financing strategy of the programme. The optimal institutional set-up for managing the resources of the expenditure programme should be selected only after all elements of the programme are clarified and consensus on the priorities it will support has been reached.

CHAPTER 2 PROJECT APPRAISAL

Project appraisal constitutes the main function of any implementing agency and the core of the management of the project cycle. The project cycle is an integral part of the programme cycle presented in the previous chapter. Unlike programming, which is mostly a political process and a responsibility of the government, the appraisal, selection and financing of individual projects is a technical process which should be conducted by a professional management body, held strongly accountable for its performance.

Figure 3 below presents in a schematic way the inter-relations between the programming and project cycles that shape the management structure of an implementing agency. It is a generic structure and there could be modifications in individual elements, depending on the specific circumstances in a given country/institution.

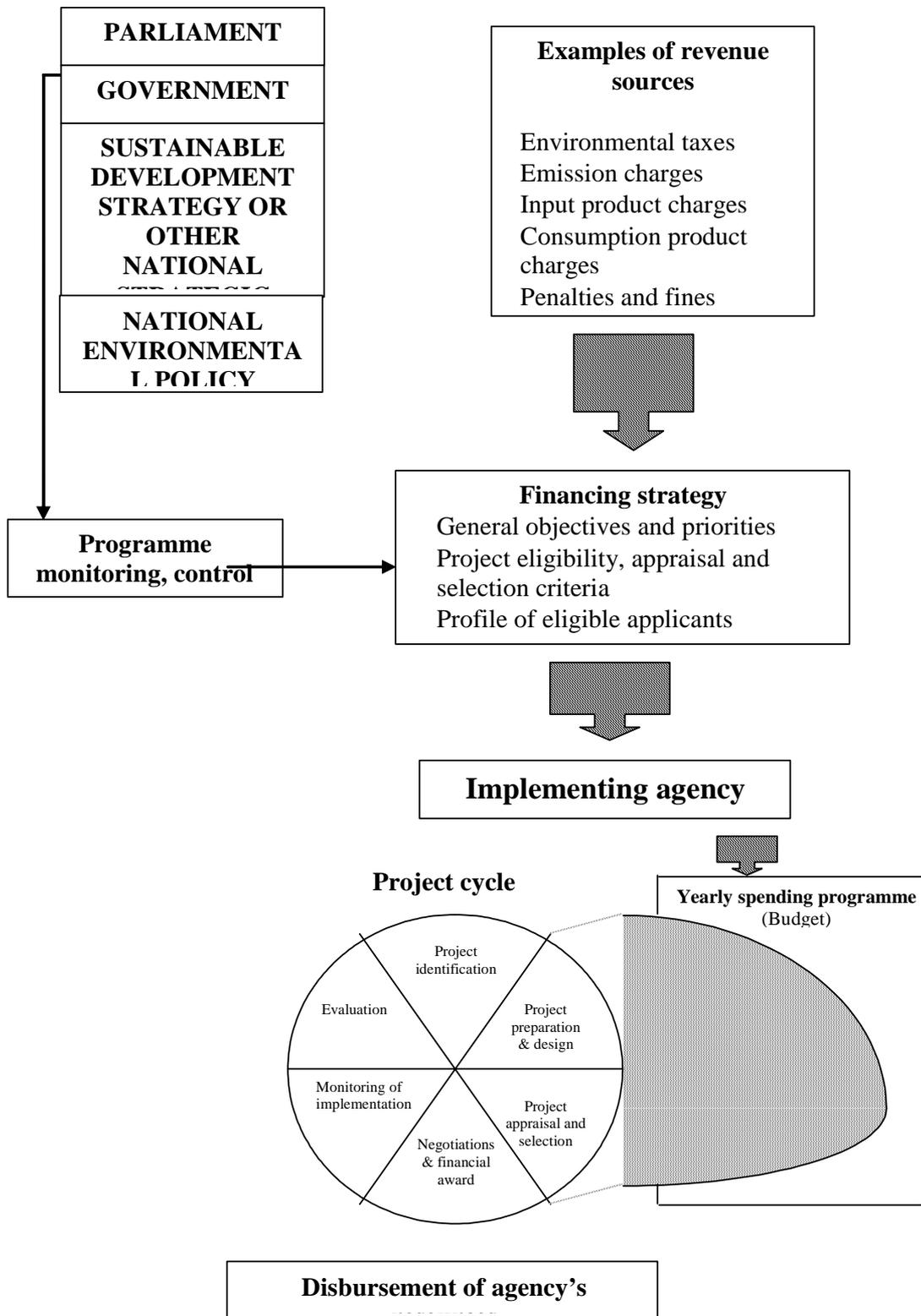
This chapter looks at the major stages of the project cycle. It aims to provide managers of public environmental expenditure programmes with practical guidance for addressing problems and issues that occur at each stage of the project cycle as well as suggestions for possible solutions. It seeks to present different options that could be most appropriate under a given set of conditions for programme managers to choose from.

Project cycle framework

The project cycle represents the critical path for selecting projects for financing. From the point of view of the public financier, the project cycle consists of several major phases: project identification, appraisal, selection, financing, implementation, monitoring and evaluation. Project preparation and design are a responsibility of the applicant and are not subject of this Handbook although certain aspects are touched upon.

For the purpose of this Handbook, a project will be defined as an economically indivisible series of works fulfilling a precise technical function and with clearly identified objectives from which to judge, if the project complies with the eligibility and selection criteria of the implementing agency (adopted from the EU Commission, CF: Art. 1, Reg. 1265/1999). For the sake of this Handbook, applicants, project developers, project owners and project proponents are used interchangeably. An applicant becomes a beneficiary only after his project receives support from the agency.

Figure 3. Programme and project cycles



Overview of the main stages of the project cycle

The project cycle consists of the following main stages.

Project identification is the first part of the project cycle. At this stage, the objective for the agency is to reach as many potential project owners as possible and to identify the most promising projects in each of its priority areas that could be potentially supported. In order to avoid receiving too many project proposals that might be inconsistent with the agency's objectives or coming from applicants/regions/sectors that are not eligible for support, the agency needs to provide potential applicants with sufficient information on its eligibility criteria. The agency could develop an information package, consisting, as a minimum, of information on procedures for submission of applications, an application form and instructions to applicants on how to fill in the form, the criteria that projects should meet. This information package should be widely disseminated and published.

At this stage, on the basis of formal and transparent eligibility criteria, the implementing agency selects for appraisal only those projects that meet these formal requirements (pre-appraisal).

Project appraisal is the stage at which a detailed evaluation of those projects that have successfully passed through the eligibility screening (pre-appraisal) is conducted. Such evaluation requires providing additional information and data by the applicant. Ideally, each project needs to be subjected to technical, environmental, economic and financial analysis.

The aim of project appraisal is to ensure that a pipeline of best projects is established. To this end, it is crucial that appraisal criteria be clear and unambiguous as well as applied non-discriminately across all projects. Some implementing agencies develop scoring systems, also unified into a single value indicator which is used to rank projects with similar objectives; ranking lists are developed showing the order in which projects in the pipeline will be financed.

Project appraisal can follow a pattern that depends on the type and the size of the project. This means that different sets of appraisal procedures may be needed for different types of projects.

The **selection of projects** to receive support from the agency takes place after project appraisal is completed and a ranking list of projects developed. It is crucial that only cost-effective projects be selected for financing, i.e. those projects whose cost of achieving a unit of environmental benefit is lower compared to a benchmark.

During the **implementation stage**, particular attention should be paid to the disbursement procedures. Support is provided for specific tasks and in principle resources should be disbursed only when these tasks are completed and approved by the agency. This practice ensures better control over the expenditure incurred within the entire budget. The implementing agency could play a very important role, contributing and encouraging an efficient and timely implementation of individual project tasks. The more financially attractive the agreement conditions, the stronger the catalytic impact of the agency on the project implementation process. **Monitoring** of project implementation and evaluation of results can contribute to the success of the project.

The project cycle begins and ends with the **evaluation** of project results. These results are considered twice – first during the identification stage and second upon project implementation, when stated and actual results are compared.

Successful projects with significant environmental benefits provide information on effective project implementation methods and unit costs needed to achieve the environmental effects (i.e. the

necessary cost-effectiveness ratio). Such data, stored as archival information, constitute a permanent reference database used to appraise projects that are at earlier stages of the project cycle. Ideally, upon project completion, the project's cost-effectiveness is re-calculated against initial assumptions as well.

While most institutions managing public environmental expenditure in transition economies apply some kind of project cycle management procedures, often these procedures do not lead to the identification of the most cost-effective solutions. Some of the major conditions ensuring an effective and well-functioning project cycle are listed below.

Box 6. Conditions for an effective project cycle

Some of the major conditions ensuring an effective project cycle are:

- availability of information on the agency's project cycle to the public at large;
- well-designed and standardised application and appraisal forms;
- clear and understandable eligibility and appraisal criteria and procedures tailored to the specific needs of the agency;
- professional staff capable of conducting project appraisal and selection;
- clearly divided and defined lines of responsibilities among technical staff, agency's management and supervisory bodies;
- effective communication with potential applicants.

An effective project cycle requires a careful design of both eligibility and appraisal criteria and procedures applied at each stage of the project cycle. The procedures should be well-described and documented in operational documents. This is crucial, as these procedures are in fact the major tools used by the agency in its work. Therefore, they should be formally approved by the supervising body. Information on the criteria and procedures adopted by the agency should be made available to the public. The procedures used to screen out and appraise and select projects require that applicants provide specific project information. Precise and verifiable information provided by applicants is a major precondition for an effective identification and appraisal process. As data and information collection for certain types of projects might be highly time- and resource-consuming, it is essential that potential applicants be aware of all information requirements well in advance. In addition, well-designed and standardised application and appraisal forms could significantly contribute to increasing the effectiveness of the project cycle for both the agency and the applicant.

The procedures that ensure high quality and efficiency of the project cycle run by the agency should be valid for all staff. Staff competences are critical for the success or failure of the agency. Well-prepared and experienced specialists are not easily available on the labour market. Formal qualifications are not sufficient. These should be supplemented by practical skills and experience in the field. Personal characteristics of individual staff members, their understanding of the agency's mission, objectives, and priorities, and the degree to which staff members identify themselves with the agency are also important for the success of particular projects. The friendly but professional attitude of staff to applicants could further contribute to a healthy working relationship with clients. When the performance of staff members is routinely and rigorously evaluated based on actual work results, there is no danger that such behavior might lead to lobbying or protectionism of individual project owners.

In addition, clearly divided and defined roles and responsibilities among all levels of management and staff are also crucial for the effective project cycle. These should be laid down in the legal and operational documents of the agency. Responsibilities should go hand-in-hand with accountability and liability for individual decisions.

Decision-making process

The project cycle requires an intense communication and interaction among agency's staff and between staff and applicants. The clearer the timing needed for each of these interactions and clearer the responsibilities of individual staff in charge of making decisions at each step, the more transparent and efficient the project cycle.

The **flowchart of decisions** should reveal the sequence of actions, actors responsible for them and time limits for each action. The flowchart should provide, as a minimum, clear answers to the following questions:

- What task is done?
- When is it done?
- Who does it?
- How much time is needed for its completion?
- How it is done?
- Why is it done?

Comprehensive and detailed explanations on these issues should be provided in the operational documents of the agency.

An example of a flowchart of decisions is given in Figure 4 below. This example is based on the decision-making process in use at the Polish EcoFund. This flowchart presents the five phases, four of which end with interim decisions (phases 1 through 4). It also shows the major four participants in the appraisal process, namely the applicant on the one hand and the agency, through its Executive Office, Management Board and Supervisory Council, on the other. Figure 4 shows the respective phases in the project appraisal process down to signing a contract with a beneficiary and can be explained in the following way:

1. Phase 1 - The applicant submits a project questionnaire which is subjected to project screening against formal eligibility criteria by the agency's staff (Executive Office). The Management Board reviews the project and makes a decision if the project is eligible or rejected. A letter is sent to the applicant for information.
2. Phase 2 – If the project is accepted as eligible by the Management Board, the agency's executive staff prepare an invitation to the applicant to submit a complete Application. Between the Initial Review by the Management Board and the submission of the Application by the applicant, the executive staff of the Fund conduct a preliminary project appraisal (environmental, technical and financial analysis). The Management Board provides the applicant with their opinion on the project scope and feasibility and specifies requirements for modifications in the project scope as well as additional information. If such modifications are not agreed, the project is rejected.
3. Phase 3 – The project is subjected to full appraisal by the Executive Office, on the basis of the application received. This includes: environmental, technical, economic, legal and organisational analysis of the project proposal. In the case of complex projects or when

innovative technologies are proposed, the agency may seek external advice and assessment from independent experts. At this stage, the Management Board decides if the project will be supported, if further amendments to its scope will be necessary in order to make a decision or if the project will be rejected. The agency informs the applicant of its decision.

4. Phase 4 – If the project obtains a positive opinion by the Management Board, the agency executive staff prepare information on the project to be submitted to the Supervisory Board for a final decision. The Supervisory Board discusses the project and makes a final decision. The applicant receives a letter from the Fund with relevant explanations.
5. Phase 5 – This phase consists of negotiations between the Fund and the applicant on the terms of the agreement and the actual signature of the agreement.

The relationship continues after the selection, via the monitoring of project implementation and the assessment of project outcomes. These stages contribute to the performance of the project owner, and to that of the agency, which is able to learn lessons from experience.

A time limit for each phase of the project appraisal process should be set in order to induce staff discipline in processing applications and meeting strict deadlines as well as making the applicant compelled to adhere to the time schedule. Applicant should be encouraged to stick to the time limits for each specific phase in order to ensure smooth processing of the application. In the case of the Krakow Fund, screening of project proposals for eligibility takes about 2 weeks from the time of submission. After submission of the full application form up to signing financial agreement with the applicant, the process may last up to three months.

How to communicate with potential applicants?

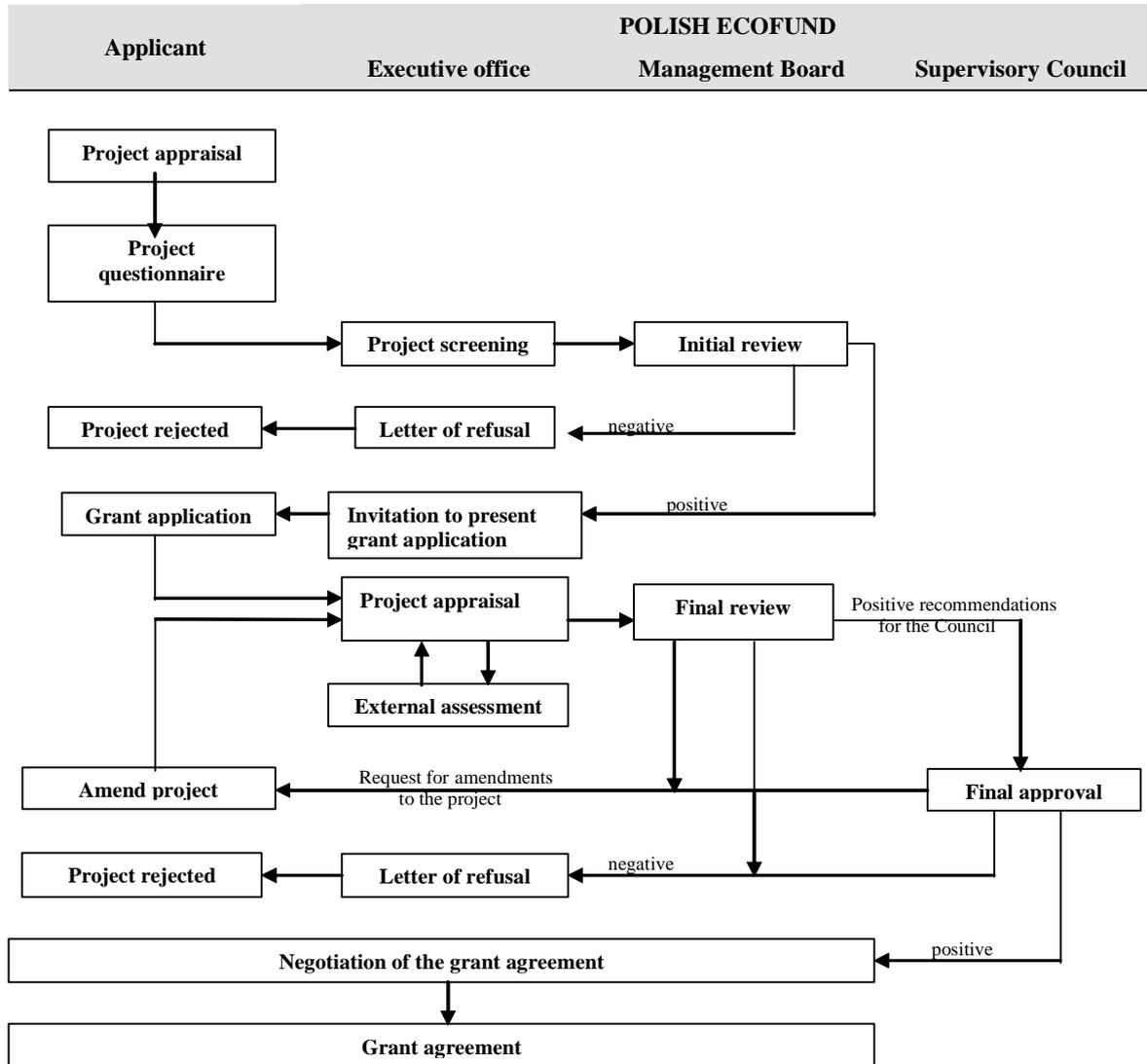
The complexity of the procedures applied by the agency, and the special requirements with regard to information needs may hamper the agency's access to well-prepared projects, i.e. projects proposed by less experienced or less financially affluent applicants. The agency's rules of operation, criteria and procedures, application forms and the instructions for filling out these forms need to be well communicated and explained to potential applicants.

There are different channels for the agency to communicate its agenda to potential beneficiaries. These include among others:

- seminars and workshops;
- targeted visits;
- direct contacts;
- hot lines.

Figure 4. Flowchart of decisions in the project appraisal process

Example based on the Polish EcoFund practices



Direct contacts with customers and any interested parties remain the best way of communication and promotion of the agency’s agenda. Such direct contacts could include open seminars, training, and workshops. The main principle is that such events should be open to everybody who is potentially an eligible project owner and no group of beneficiaries or regions should get a preferential treatment. Such group meetings rather than contacts with individual applicants should be the practice as they limit the scope for corruption on the part of the agency.

Such an open policy could help increase the agency’s credibility and is a guarantee for developing good and honest working relations with applicants from the outset. In addition, agency’s staff should use the opportunity of meeting potential clients and seek their opinion on agency’s requirements and make respective adjustments, if necessary. Targeted visits to potential clients from a specific sector or region could also help potential applicants to get a better understanding of the

financing opportunities the agency provides. Hot lines can be opened to respond to clients' questions for clarification.

The main principle in communicating with clients is that all potential applicants should receive the same information from the agency and should have equal access to information.

Box 7. Essential elements of a communication strategy with applicants

- Develop a clear policy on information provision
- Provide all applicants with equal access to information
- Use direct contacts as appropriate and within reasonable limits
- Avoid providing support for project preparation, or alternatively, open a grant programme for project preparation
- Use external consultants when necessary and introduce conditions for using external expertise

Well-structured and well-presented information provided to applicants is key in the first interaction between the agency and its potential clients.

Box 8. Information package for applicants

The information package provided to potential applicants should contain, as a minimum, the following components:

- description of the agency's eligibility requirements (including priorities in terms of environmental media, sectors, regions, types of beneficiaries and projects to be supported, level of support per type of beneficiary/project, duration of the programme);
- standardised application form with detailed instructions to applicants on how to fill in the form (for large investment projects a two-stage application form may be introduced – preliminary application form and application form proper);
- framework conditions of the financial agreement between successful applicants and the agency;
- information on procurement procedures;
- decision-making flowchart.

The agency should prepare and disseminate information on its eligibility requirements. These include, among others, priorities in terms of environmental media, sectors, regions, types of beneficiaries and projects to be supported, level of support per type of beneficiary/project, duration of the programme.

Standard application forms reduce time to process applications and help staff to more efficiently check information provided by applicants. The agency should require that project proposals be prepared in compliance with its standards. In order to help applicants better understand information and data requirements, the application form should be supplemented by detailed instructions on how to fill it in. The degree of complexity of the application form depends on the type of project proposed. Examples of specific forms used by Kommunalkredit, Austria are available under www.kommunalkredit.at.

Box 9. Handbook for Kommunalkredit to manage public environmental expenditure

The Handbook on public funding was developed by the Ministry of Environment of Austria, the Kommunalkredit and external experts. After the governmental funding act and the ministerial guidelines, this handbook is the third level of rules for the agency. The Handbook is a flexible instrument and it undergoes revisions after a certain period of time in order to adapt rules to changing realities in the environmental market in the country. Every effort is made to ensure stability, objectivity and transparency of the decision-making process on financing. Rules are published in order to inform potential applicants of conditions under which support is provided by the agency. The Handbook varies by the different funds (water and wastewater management, restoration of old dump sites, JI/CDM, environmental protection). An example of the content of the Handbook is provided in Annex III.

To avoid time-consuming and costly preparation of an application form for a project that may not qualify for financing (particularly for large investment projects), the agency may introduce a **two-stage appraisal procedure**. The application form proper may be preceded by a preliminary application form (project questionnaire or project information form). The preliminary application form requests information which will allow the agency to define the project eligibility. Additional information and data are required only if a project passes this eligibility test. Such a procedure is convenient for both the agency and the applicant. If the agency chooses the two-stage approach, it is recommended that the preliminary application be standardised and made the same for all projects.

When **hot spots** are used as an eligibility criterion, the preliminary application stage may be skipped. With **calls for projects to competitions**, only one application proper may be required. The agency may design the criteria in such a way that a project meeting these criteria would automatically be selected for support (for more information on this issue see the section on eligibility screening). On the other hand, pre-defined calls can cause some serious problems. Due to the short timeframe of a call (even if the information phase is reasonably long, the project development takes time), there is a risk that the agency can get quite old projects instead of good ones. Another issue is the need to design the call very narrowly in order to get similar and comparable projects (e.g. wind projects, WWTP without sewer in the size of .. to ..). In addition, it is often difficult to improve an application within the same call. Also, the heavy workload (all projects arrive at the same time) can bring administrative problems within the agency. Given these restrictions and challenges, the system of calls is suitable only for specific measures.

Information concerning the procurement procedures for purchasing goods and services with support provided by the agency could also be very helpful to potential applicants. Similarly, the procedure of negotiating and concluding a financial agreement as well as the terms of disbursement of agency's resources in successive tranches should be explained in its operational rules.

The public information prepared by the agency for dissemination can be posted on the agency's internet page. Thus, the information is made equally available to everybody. In addition, information placed on the internet may be easily updated at a very low cost, reducing both the workload of the agency's staff and its administrative costs.

Database to support the project cycle

A computer database of projects is one of the major project cycle management tools. The key function of the database software is to assist the agency's management in making the project cycle more efficient. A project database could be a convenient tool for collecting, systematising and storing information and for supervising the project cycle. **The type and degree of sophistication of the computer database depends first and foremost on the needs and capabilities of staff that will be using it.**

The simplest computer database serves mainly as a **catalogue of projects** processed by the agency, at various stages of the project cycle. Thus, the information on projects is given the form of computerised data enabling the user to search for information by specific categories or to prepare different lists, comparisons, or compilations of available data according to various implementation, supervision or reporting needs. A review of the current stock of projects gives the user the possibility to determine the involvement of the agency in pursuing a particular objective (priority), to follow the progress in the implementation of a project, to estimate the work load of individual staff members. Records of anticipated and actual environmental benefits enable the evaluation of the effects of the financial support provided by the agency.

The **historical information on unit costs and environmental effects achieved in different groups of similar projects** (e.g. sewage treatment plants and transfer collectors, energy saving, waste recycling, etc.) provides a basis for estimating the cost-effectiveness values typical of investment tasks of various kinds. Such data may be useful as a benchmark when determining the minimum expected cost-effectiveness ratios for new project proposals for the purposes of preliminary economic appraisal of projects.

The projects tracking database may cooperate with other databases used in the agency (on correspondence, decisions, etc.), providing possibilities for integration, transfer and use of data within the computer system. The database may be designed to generate periodic reports on the structure of projects, the cost-effectiveness of particular investment tasks, expected environmental benefits and current status of progress in project implementation, in material and financial terms. Similarly, it may generate a standard financial agreement as well as financial tables presenting the time schedule of payments to be made by the agency. Such reports could help improve management efficiency. The database may also be used for supervision and inspection purposes.

The database should be perceived as a user-friendly tool by staff. Therefore, it is strongly recommended that the **database be developed gradually**, with modules options built in, with the participation of, and in accordance with, the suggestions of its users.

Box 10. Main uses of a projects tracking database

- serve as catalogue of projects;
- allow a quick and easy search for data and information by categories;
- help prepare lists by various items (quantities, prices) and generate management reports;
- help track progress in implementation of individual projects;
- allow comparisons between expected and actual benefits from a project;
- help generate standard financial agreements;
- help generate financial tables and reports;
- allow to determine the workload of individual staff members.

Outsourcing

Outsourcing or contracting out is an arrangement whereby the agency can enter into a contract with a supplier from outside that agency for the provision of goods and services which typically have previously been provided internally. Outsourcing should be carried out through competitive tendering. While governments have always purchased some goods and services externally, in the last two decades there has been a movement to the wholesale use of outsourcing as a tool for public management.

Outsourcing has both advantages and disadvantages. The advantages of outsourcing include, among others, the potential for: cost savings, increased accountability of service providers through contract specifications and performance measurement, better work and management practices, access to greater skills, knowledge or technologies, better service quality, greater flexibility in services.

Some of the disadvantages of outsourcing include the potential for: reduced accountability of government agencies for contracted services, loss of confidentiality of information, collusive tendering and other tendering problems, the costs of outsourcing. In any case, outsourcing is an option where the agency has strong control over the supplier's operations and develops clear rules, procedures and criteria for evaluation of his performance.

In many cases, a portion of the expenditure programme functions are outsourced to other governmental agencies (particularly at the local level) or the private sector. A number of factors account for this practice:

1. large fluctuations in funding from year to year which make it difficult to properly size the staff;
2. concentrated periods of work requiring supplementary staff resources (e.g. during application process);
3. salary constraints that preclude hiring staff with certain skills (e.g. financial appraisal capabilities) because of civil service salary caps;
4. non-recurring special skill requirements such as the review of certain types of technologies;
5. concerns about building up large staff if the expenditure programme will be terminated at a known date; and
6. to enhance the accountability of the expenditure programme by relying on well-established experts to conduct, for example, audits or programme evaluations.

Examples of such outsourcing can be found in Germany and Austria where certain public environmental expenditure programmes have been contracted out to banks, respectively KfW in Germany and KommunalKredit in Austria (for more information on the Austrian case, see the section below). In addition to banks, consulting firms and specialised NGOs can also be used as potential service providers.

Annex IV provides an overview of outsourcing opportunities with regard to different expenditure programme functions, possible service providers and risks involved.

Project identification

In order to develop a solid pipeline, the agency should seek to conduct its own project identification. There are two major approaches for identification of projects – **passive** and **active**. Focus is placed on active project identification.

The passive approach, where the agency awaits applications, assumes that all projects are equally important and appropriate. The passive approach is characterised by a minimum amount of advance planning. In the extremely passive approach, the agency does not determine the identity of the most important (priority) areas for support, but rather waits to receive applications. This approach can only

be recommended if the competence of the agency is very narrow (e.g. WWTP only) or if resources exceed potential demand. Usually, in this case, project identification is not a task of the agency but a product of the political process.

Alternatively, the agency can engage into an active search of project opportunities. Experience shows that for different types of projects, different tools and procedures need to be developed and applied in order to ensure identification of the best projects in the respective regions and/or sectors. Three major approaches, differentiated on the basis of the type and size of projects and their location, are discussed in detail further below. These are based on the experience of the Polish EcoFund. The Fund distinguishes between:

- Individual (case-by-case) treatment for large (unique) projects of nationwide significance, or else of greatest regional importance;
- Standard (open) competitions for numerous small projects of similar nature that could be implemented throughout the country (sectoral programmes);
- Multi-year programmes for certain priority problems or sectors.

Individual (case-by-case) treatment of large (unique) projects

This is the easiest approach. The agency identifies large and unique projects of particular significance for the country as a whole. It ranks them according to the potential environmental benefit expected from each project.

After such a ranking list is developed, the agency itself should come up with a concrete proposal for the amount of financial support that can be offered to the projects that rank highest on the list. Experience shows that this approach provides a strong incentive to the project owner to considerably speed up project preparation (documentation, obtaining permits, etc.). Another advantage of this incentive is that the project owner knows upfront what financial assistance from the agency is realistic. It is important that the agency's support be strictly time-bound so that the investor has the additional incentive of finalising the project preparation in time.

Standard (open) competitions

Standard competitions are the recommended approach when there are numerous similar investment projects, spread across the country. If the number of applications increases steadily and the need for co-financing of such projects exceeds agency's available resources, the best solution would be to organise a competition. Such an approach allows the agency to select those projects that are most urgent, best prepared and propose best technological solutions as well as optimised costs. Therefore, standard competitions help increase project preparation. In order to make different projects comparable, it is advisable that the agency develop a standard application form which will simplify and predetermine the project design.

Well-defined "points" criteria are of utmost importance for the selection process in such competitions. In addition, criteria should be measurable and verifiable. Support should be provided only to those projects that exceed some threshold value set in relation to a hypothetical ideal (e.g. 60% of all points that can be assigned). When quantitative criteria are not appropriate, projects can be assessed by a jury. Project appraisal is then conducted based on the judgments of experts through discussion and voting. The long-term experience of the Polish EcoFund shows the effectiveness of

such an approach. Experts reviewing projects usually give useful comments which lead to the improvement of project's quality.

It is important that the agency make cyclical (e.g. annual) announcements of competitions. Announcing the organisation of competitions early enough allows potential applicants to better prepare their projects and even sees the resubmission of old projects previously rejected by the agency in a much better form. Thus, the quality of applications considerably increases compared to those prepared at the last minute. However, such competitions might significantly increase staff workload at certain periods and create strong pressures to meet deadlines. Therefore, **it is recommended that such competitions should not be organised more than 2-3 times a year.**

In addition, the agency may find it useful to revisit and assess the selection criteria used as well as other competition conditions after a competition has run for 3-4 years. Following such an assessment, some of the criteria and conditions might need to be changed.

Examples of such areas where such competitions could be organised include:

- energy efficiency projects that encourage the use of alternative sources of energy;
- construction of installations that use renewable energy sources;
- projects for abating carbon dioxide and other greenhouse gas emissions (with expected limits of CO₂ emissions),
- construction of municipal wastewater treatment plants for municipalities where the number of inhabitants is specified (e.g. towns with 10 – 50 000 people);
- establishment of comprehensive waste management systems (e.g. to service between 50 000 and 200 000 inhabitants);
- installations for recycling specific types of waste.

The common feature of all above project areas is the fact that projects' locations in the country do not really matter.

Multi-year Programmes

The third approach to identifying best project opportunities is the development of long-term programmes. If the government has failed to do so, the agency could prepare multi-year programmes targeted at specific priority environmental problems or regions. The development of transparent, objective and rigorous appraisal and selection criteria as well as clear and convincing procedures are key to the preparation of such programmes.

Following the guidelines set out in policy documents, the agency could develop its own very precisely-defined action programmes through close cooperation with the authorities in the region concerned, including the best national experts. The preparation of a programme has the following steps:

- identification of major problems, including their scale and causes;

- specification of all projects that need to be implemented in order to fully eliminate a given environmental problem or bring it to the level of required standards;
- specification of costs associated with all projects and timetable for their implementation;
- ranking of projects in terms of their environmental importance, financing available for their implementation and the level of their preparedness.

As usual, total costs of eliminating a problem are set against all possible sources of financing (including the agency's) in order to reveal financing gaps. In such a case, it is best to concentrate on some 10-20 most important projects rather than attempting to dilute funding across too many projects of more marginal significance.

The programmes run by the Polish EcoFund suggest that there may be times when the implementation of several projects with costs representing, say, 20% of the total cost of all projects, brings about 50-80% of overall benefits sought. Therefore, sometimes a small but well-prepared portfolio of projects is a better option and can ensure a cost-effective use of the agency's resources.

When all projects have been identified and the desired degree of precision achieved, such a programme should be presented for consultations with various stakeholders, including NGOs, business community, association of municipalities, and other relevant parties. Once agreement is reached, the programme should go on to the regional authorities (or to the Ministry of Environment, in the case of a national programme). This programme should contain not only a description of the projects considered as the most important to be implemented with resources provided by the agency but also an implementation schedule, costs and the terms and conditions of the agency's support.

Project preparation and processing of applications

Once the most promising project opportunities have been identified for each priority area, further project preparation and design work is needed. For each proposed project, applicants should be required to prepare first a **brief project information sheet** and then a detailed project analysis in the form of a **pre-feasibility study** which will be used in the next stage to compare and select the best project proposals that can be funded by the agency.

Project preparation is a clear responsibility of the applicant. The lack of well-prepared projects was one of the major failures during the centrally-planned economy where a lot of projects would remain unfinished and a lot of resources simply wasted. In order to ensure the good preparation of the project, the applicant needs to allocate sufficient time and resources to the project design upfront. Experience shows that in order to prepare good infrastructure investment projects, on average project developers need to spend about 6-10% of total project costs on project design. In addition, the presentation of the project data and information should follow the format required by the agency.

At this stage of the project cycle, it is important that the agency collects enough information which will enable it to decide if a project is eligible for support or not. Collection, processing and verifying of submitted information has costs for the agency and is also time-consuming. Particularly for investment projects, it can also be expensive for the applicant. The applicant should not be burdened excessively with requirements for detailed technical and financial information. This should be done only after the agency has determined that the project is eligible for financing.

The two-stage appraisal process saves time and resources to both applicants and agency's staff. Experience shows that on average the rejection rate during the first stage is about 80% whereas for projects that have successfully passed the eligibility test, the rejection rate goes down to 10%.

The appropriate handling of applications during this stage requires:

- Choosing the application cycles and the appraisal process; and
- Providing assistance to applicants.

Choosing application cycle and appraisal process

In order to avoid peaks in the application cycle, the agency could choose between two principal options: periodical and on-going application processes.

Periodical application cycles are based on **competitions** which have strict deadlines or time-limited windows under a specific programme. Applications submitted as part of a competition usually have similar topics and can be subjected to a common appraisal, ranking and selection procedure. That is why the pre-appraisal process can be omitted and a **one-stage appraisal process** can be used.

The **on-going application process** is best applicable with unique projects and loans at near market terms⁷. Infrastructure investment projects are usually of this type. Because of their complex nature, such projects are best to undergo a two-stage of appraisal, namely eligibility screening (pre-appraisal) and full appraisal. In this case, projects compete against a reference project (benchmark).

Table 9. Types of projects, the application cycle, and appraisal process

Types of projects	Application cycle	Appraisal process
Standard similar projects	Periodical (competitive tenders)	One-stage
Unique projects	On-going	Two-stage
Near market term loans	On-going	Two-stage

Assistance to applicants

The appraisal process should be managed in an interactive way. Direct contacts with applicants remain the best way of communication where the applicant can get clear answers to his questions. As part of the exchange of information, the agency should expect applicants to provide explanations on and justifications for project's technical solutions and different costs. Sometimes, in the process of clarifying different issues, particular suggestions on minor adjustments made by the agency may help improve a project. **Cooperation between the agency and the applicant is essential for the final quality of the project.** Such a procedure limits bureaucracy on the part of the agency, eliminates project anonymity and allows the applicant to have insight into, and take part in, the whole process.

In providing assistance to interested clients, the agency must be aware that it conveys information of real market value that may distort the relevant market and create unfair competition if clients are not treated equally. Protectionism, political pressures and private sympathies should be avoided in communication with clients. Information should be made available to everybody who is interested to

⁷ In principle, the implementation agency should avoid financing loans at near market terms as such projects could easily be financed by the commercial banking sector. If, for a certain reason and in limited cases, the agency chooses to provide loans at near market terms, applicants interested in such loans could apply to the agency at any time and should undergo a two-stage appraisal process.

obtain it and be provided in a written and/or electronic form in order to pass it to as many clients as possible.

The Polish EcoFund experience shows that many projects have been “saved” by such a procedure, where normally, following formal procedures, the project would have been rejected due to the lack of precision in describing tasks, incompleteness of information, or use of excessively costly technical solutions. However, help of this kind should conform to the strict procedures of the Fund aimed at avoiding excessive structural interference in (or even worse the redefining of) a project. Excessive involvement of agency’s staff in the project preparation would imply the agency’s authorship of a project and may raise doubts with regard to the objectivity of the appraisal process for such a project. Clearly, such objectivity is not possible, if the agency has participated in the project definition. In principle, agency’s staff can and should directly intervene when the technology proposed by the applicant is obsolete or known to cause more environmental problems than those it aims to resolve. The several-tier evaluation of the project with the involvement of agency’s staff, including the Management Board members facilitates the maintenance of a wise balance between a reasonable extension of assistance and the required level of independence and responsibility on the part of the applicant.

In addition, the Government may choose to establish a project preparation unit which will aim at providing assistance in developing projects for financing from public funds. In order to ensure its independence and objectivity, such a unit should be a separate legal entity. For example, the EU has established such offices in the EU candidate countries to support the preparation of ISPA projects financed by ISPA funds.

One common problem in many transition economies is the lack of skills and knowledge for the preparation of good projects. The general level of project preparation capacity is relatively low and is reflected in the quality of projects submitted to environmental funds in the region. In addition to the lack of technical skills, many project owners lack financial resources to hire consultants to help them develop the project. For this reason, it may happen that the agency receives requests for providing support for project preparation. The risk with providing such support is that it might create wrong expectations on the part of applicants where they take this support as commitment by the agency to finance the project. **In principle, the agency should not provide support to project preparation.**

If there is significant demand for such “project preparation grants” in the country, the agency may choose to open a **special grant programme for project preparation**. All such projects have to be submitted, appraised, ranked and selected for financing as any “normal” projects in other priority areas of the agency. The fact that some projects have received grant support by the agency in the preparation phase does not commit the agency to actually financing them. Once such a project is fully developed, it should apply to the agency in accordance with all procedures and requirements and undergo a full appraisal process.

Eligibility screening (Pre-appraisal stage)

A two-stage appraisal process is the best practice for evaluating complex investment projects. The first stage of this process is eligibility screening (or pre-appraisal) and the second stage is appraisal proper. The main objectives of the pre-appraisal are to:

(i) reveal at an early stage those projects that do not have a chance to be financed by the agency; and

(ii) identify, as early as possible, those projects that might be eligible for financing but are not very well prepared and need further development.

Formal eligibility criteria

During eligibility screening, the agency assesses the eligibility of a project against formal criteria. Each project is screened against a number of environmental, technical, financial and legal criteria. The **optimal package of eligibility criteria** should cover as a minimum:

- Consistency of the project with the agency's objectives and priorities (project, project owner, type of expenditure);
- Reliability and acceptance of expected environmental benefits (shown as reductions in pollutant emissions or improvements in environmental quality);
- Feasibility of the proposed technology;
- Completeness and clarity of the financial plan and sources of financing (realism of the project budget);
- Compliance with legal requirements (such as meeting mandatory environmental standards, obligations to pay environmental charges and compliance fees, availability of environmental and construction permits, application of labour code rules);
- Realism of project unit costs with regard to benchmarks established by the agency for other similar types of projects.

These are “**hard**” or “**knock-out**” criteria which allow the agency to make binary (yes-no) choices. This implies that if a project proposal fails to meet even one of these criteria, the project is rejected at this stage.

Some potentially good, but ill-prepared projects might be rejected at this stage. Therefore, omissions, oversights, or mistakes on the part of the applicant should not result in an immediate project rejection at the stage of formal examination, providing spotted project's deficiencies are duly corrected. But the agency can signal revisions to the project owner so that the project can be resubmitted in the next application cycle.

In order to obtain the necessary information to assess a project's eligibility, the agency should develop a **standard questionnaire/rapid assessment form** to be used by all applicants. The questionnaire used in the pre-appraisal stage should be made available to all potential applicants along with instructions to applicants on how to complete it. Examples of a standard questionnaire and instructions to applicants are provided in Annex V and VI. These are tools in use at the Polish EcoFund and the Krakow Fund respectively.

As a minimum, the questionnaire should contain:

- project's title;
- applicant's name and address and legal status of the applicant;
- agency's priority area addressed by the project;

- project's objectives and environmental justification;
- technical description of the project (including information on the firms preparing the engineering design specifications and other technical documentation of the project);
- costs;
- method by which a contractor is to be selected;
- sources of project financing.

Assessment of project eligibility

The assessment of project eligibility by agency's staff starts with checking the questionnaire for completion. The applicant should provide all required information in a concise but clearly formulated and understandable manner.

After all the necessary information is collected, agency's staff should verify its correctness and reliability. The information provided should be up-to-date and describe the project as of the day of submission. This is true for all elements of the questionnaire. Some of the most common problems encountered at this stage include:

- In terms of financial data - it often happens that applicants present data on resources planned to be obtained from different financing institutions as already awarded;
- In terms of environmental benefits – applicants present excessively optimistic estimates of benefits that need to be corrected;
- In terms of engineering solutions – applicants claim unjustified effectiveness of the technology.

Before actual screening, it is useful to check if the agency has already received other project questionnaire(s) from the same applicant and, if so, what was the project area and the quality of the project questionnaire.

Once the questionnaire is considered complete and all relevant information verified, the project can be subjected to the formal screening procedure. The screening involves comparing the information provided in the project questionnaire with agency's eligibility criteria. The criteria are checked one after another, and questions and opinions are formulated. The result is a list of discrepancies between the project objectives and the agency's priorities. These may be subject to further explanations or be adopted as an end result of the screening. **The final list of discrepancies closes the project screening stage.** These discrepancies are assessed and a final consideration and decision on the eligibility on non-eligibility of a project is made by the agency's management board.

A project sheet summarises the results of the eligibility screening process. This processing of information allows for separate identification of required data. **The responsible agency employee (project coordinator) prepares the project sheet,** along with his/her comments on each of the criteria. An example of such a project sheet in use at the Polish EcoFund is presented in Table 9 below.

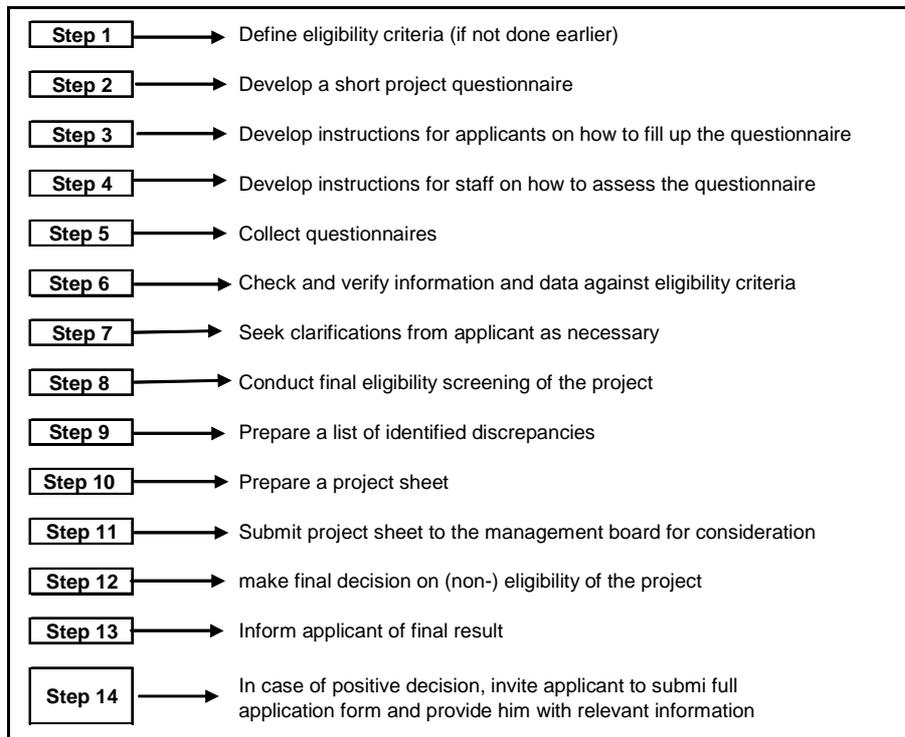
Table 10. Project sheet at the Polish EcoFund

Project sheet		
	Agency's priority	
	Responsible agency employee (project coordinator)	
1.	Project title	
2.	Applicant	
3.	Location	
4.	Implementation period	
5.	Degree of advancement of the project	
6.	Project cost (total and to be incurred)	
7.	Amount of financial support requested from the agency	
8.	Project justification and rationale	
9.	Items to be financed with agency's support	
10.	Environmental effects	
11.	Origin of the equipment supplier	
12.	Results of experts' opinions	
13.	Covering of costs	
14.	Project co-ordinator's opinion	

The project sheet is then presented to the Management Board for discussion. This discussion may lead to yet additional comments and requirements for improvement. If, on the other hand, the project application is found satisfactory, the project is approved to continue to the next stage of full appraisal.

Whether a project is eligible or not, the applicant should be duly informed about the result. If rejected, the reasons for rejection should be clearly explained in a letter to the applicant. When the project is eligible, the letter can also include an invitation to submit a complete application form. In this case, the full standard application form along with the instructions for its completion should be attached to the letter. In addition, the invitation should be supplemented by agency's **current rules for granting financial aid**.

Figure 5. Checklist for a step-by-step eligibility screening process



Appraisal process

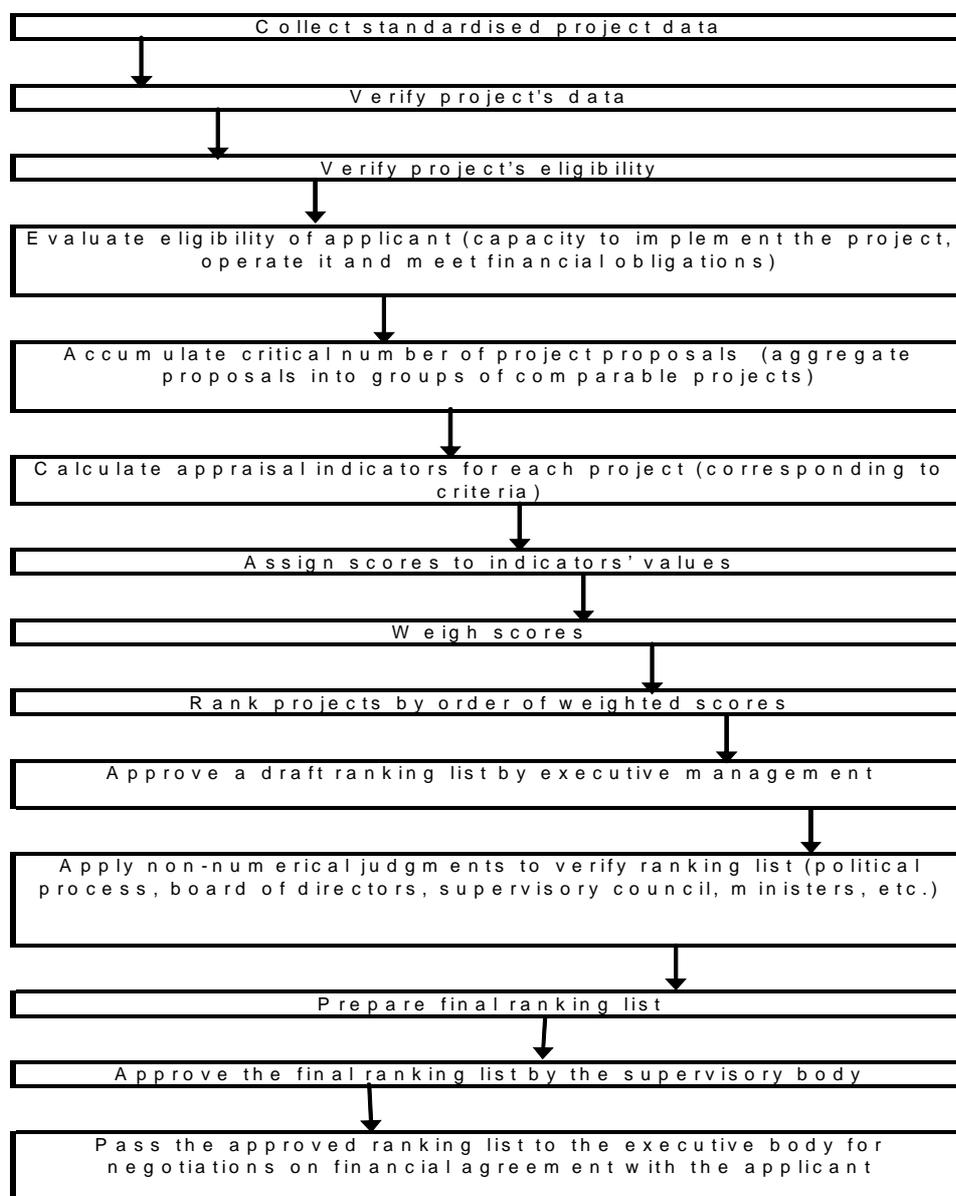
Those projects that have passed the eligibility test are then subjected to a detailed appraisal conducted on the basis of a set of appraisal criteria which include technical, environmental, economic and financial considerations. These criteria constitute the basis for developing a ranking list of the most cost-effective projects and subsequent selection for financing based on the level of resources allocated by the agency for a certain programme.

This section looks at:

- Logframe of appraisal process and steps;
- Standard application form and essential information that it should contain;
- Instructions to applicants on how to complete the application form; and,
- Instructions to agency's staff on verifying information provided by applicants.

The logical framework of the appraisal process presented in Figure 6 below shows the critical steps in conducting full-fledged appraisal. Ensuring that each of these steps is covered in the appraisal process is essential as an omission of a step could lead to ineffective or wrong decisions.

Figure 6. Project appraisal logframe



Standard application form

The agency should aim to develop a standard application form for each environmental area (water, air, nature conservation, waste minimisation, etc.) and type of beneficiary (e.g. industrial enterprise, municipality, public sector organisation, NGOs). The application forms could be divided into 2 parts: a **general data sheet** (containing meta-data and information and is the same for all applicants) and a **technical data sheet** specific to the environmental domains supported by the agency. Such a standard form also helps in entering the data and information on each individual project in the standardised database.

All applications should be submitted in line with the requirements of the standard form developed by the agency. In addition, a list of annexes that need to be attached to the application should also be provided by the agency. Such a list, based on the Polish National Fund requirements, is provided in Annex VII.

Table 11 below presents an example of the possible contents of an application form. This example is based on information provided by the Polish EcoFund.

Table 11. Example of a standard application form

Possible structure of a standard application form	
1.	Project title
2.	Applicant
3.	Location of the project
4.	Agency's priority supported by the project
5.	Objective and rationale of the project
6.	Project description
7.	Environmental benefits
8.	Project's substantive technical implementation schedule and financial plan
9.	Contractors
10.	Project's sources of financing
11.	Financial data on the project
12.	Applicant's current financial and investment liabilities
13.	Declaration of applicant
14.	Annexes

The standard format builds upon the information provided previously in the project questionnaire. Unlike the questionnaire, it allows for a lot more additional information to be included. The scope of this information and data, their level of detail, and the way in which it should be prepared and presented are explained in the instructions to applicants attached to the application form.

Instructions to applicants

The instructions to applicants should contain specific requirements on the way and scope in which the information should be presented. Instructions should include important definitions and explanations that allow to process information in a comparable form.

The major information requirements that need to be detailed in the instruction to applicants include:

- Information on the applicant (legal and financial);
- Environmental data;
- Technical data;
- Financial data.

Information on the applicant

The information on the applicant required by the agency should include as a minimum:

- Legal status of the applicant;

- Legal title to property and ownership of assets to be built with support by the agency;
- Financial situation of the applicant, including financial statements and reports;
- Banks' opinions on applicant's creditworthiness;
- Opinions of tax authorities;
- Opinions of environmental authorities with regard to applicant's compliance with environmental regulations and payment of pollution charges.

Information on the legal status of the applicant is of particular importance with regard to the financial agreement to be signed by the applicant and the agency, should the project be selected for financing. Information on the ownership title to land and buildings should be presented in terms of ownership title being settled, non-settled or under settlement. In addition, financial information on the applicant is crucial for evaluating applicant's overall performance and managerial skills as an early warning of potential risks that might arise should the agency finance this applicant's project.. If tender (contractor selection) has been completed, detailed information on the tender procedure should be attached as well as information on the selected contractor/s/. All these issues are discussed in detail in subsequent chapters

Environmental data

Environmental data refer mostly to expected environmental effects from the project (pollution abatement and control, protection against loss of biodiversity, etc.).

Wastewater collection and treatment investment projects can be divided into municipal wastewater management projects usually submitted by municipalities and industrial wastewater management projects, submitted by industrial enterprises. Municipal wastewater management projects are further divided between sewer (collector) construction and/or rehabilitation and wastewater treatment plant construction and/or rehabilitation. Industrial wastewater projects cover end-of-pipe effluent treatment and at-source effluent prevention due to introducing a cleaner process technology.

With regard to the environmental effect, the application form should describe the location of the environmental impact, providing information about water intakes located downstream from sewage outflow (distance in km), recreational and water sport facilities, fishing grounds, nature reserves, urban waterways, etc.

In addition, applicants should be required to describe the current levels of effluents and the resulting ambient water quality in the receiving water body after project implementation. The expected environmental effect should be specified in terms of pollution reductions before and after the project, such as total suspended solids/BOD/COD/nitrates/phosphates/toxic pollutants, etc. in tons/year as well as the expected timeframe for achieving the environmental effect.

Technical data

The application form should require a detailed description of the proposed technology, including data on all technical parameters of the installation that allow the achievement of a certain level of pollution reduction. It is important to require the applicant to justify the proposed technology and explain its optimality under given conditions, as well as demonstrate compliance with environmental standards.

With **municipal wastewater treatment projects**, the application form should information on the number of inhabitants in the area covered by the project, number of inhabitants connected to the sewer system, population equivalent from industry (in case of industrial wastewater), stormwater channeled to sewage, information on the arrangements for managing wastewater treatment sludges and other process by-products. Where projects concern **sewer construction**, the descriptions should be supplemented by a plan of the collectors indicating those sections for which the applicant requests agency's support.

In addition, the project **technical implementation schedule** should be requested from the applicant. For this purpose, project's stages and phases should be clearly defined. If the agency is to provide support for a specific phase of project implementation, it is necessary to extract the incremental project scope (phase) from the full project scope, including incremental costs and incremental benefits which are based on the difference between the state of environment before and after the project.

Applicants should provide information on eligible tasks and respective costs to be financed by the agency. Such eligible tasks are functionally, technologically or temporally separable (i.e. identifiable) parts of a project necessary for proper project implementation and operation. Tasks linked neither technologically nor organisationally to the objectives of a project should not be included in the substantive and financial plan (such as building of access roads, building of power links, construction of fencing, construction of the management site, construction of connections to the heating or sewer networks, etc. - for more detailed discussion on this issue see the section on project appraisal).

If the agency chooses not to consider activities already completed as part of the project scope, both the technical implementation schedule of the project and its financial plan will be limited to tasks that are planned or are under implementation. This can also help reduce the project cost.

Financial data

The project's financial plan (including cash-flow – schedule of investment outlays, forecasts of O&M costs - and structure of financing) and respective sources of financing constitute the most important financial data that need to be requested from applicants.

Instructions to applicants may also include requirements with regard to information on payments for implemented tasks presented in the project (best presented in a tabular format). Payment documents and the dates of respective payments will then allow for the separation of authorised tasks from others, while the revaluation coefficients introduced additionally allow for comparability and for calculating total costs incurred. Thus, the agency's staff will be able to determine the average degree of implementation progress of all project's authorised tasks. This is important where the agency decides to establish an upper threshold on project's progress that will make a project eligible for support from the agency.

Project's financial plan

The applicant should provide detailed data on project's **investment costs and O&M costs, including fixed⁸ costs** (such as office rent or amortisation of buildings and equipment already purchased, etc.).

⁸ Fixed costs are those that do not vary with the level of production.

The agency may accept the level of costs determined on the basis of pre-feasibility/feasibility study but these should be verified and subsequently adjusted after the tendering process is completed.

Many public implementing agencies in the transition economies tend to collect project investment data only. Having information on the O&M costs is essential for calculating financial viability and the cost-effectiveness of each project. Without knowing the O&M costs, the agency cannot conduct proper project appraisal which might lead to selecting projects for financing which do not represent value for money (i.e. which are not the most cost-effective solutions from public finance point of view) or which are not sustainable. To ensure that all applicants calculate O&M costs in the same way, the agency should clearly define the method of O&M calculation as well as where appropriate fix certain indicators.

Table 12 below presents a list of possible O&M costs data that need to be requested from the applicant.

Table 12. Possible O&M costs to be covered by the implementing agency

O&M Costs	Pre-Implementation				Post-implementation			
	Units	No of units per year	Unit cost	Cost / year	Units	No of units per year	Unit cost	Cost / year
Fuel								
Electricity								
Other media								
Materials								
Remuneration (gross)								
Outside services								
Replacement costs								
Environmental fees and fines								
Enterprise-wide costs								
Other (please detail)								
Total O&M costs								

In certain cases, a project can fully or partially cover O&M costs from revenue obtained from the sale of rendered services. If a project is capable of generating sufficient revenue to cover the O&M costs and to make profit, it stands great chances to raise debt from commercial banks and other financing institutions. **In this case, the agency should envisage decreasing aid intensity for such projects.**

Revenue from operations should be presented in terms of a time horizon at least as long as the period over which O&M costs have been counted. With modernisation/rehabilitation projects, the revenue from operations (and its structure) should also cover the period prior to the commencement of the investment.

Instructions to applicants should require projections of project cash flows for both the implementation and post-implementation periods. Table 13 below presents the main possible components to be considered in the cash-flow calculations.

Table 13. Project cash flows

Project Cash Flows				
Revenue Sources		Years.....		
1.	Applicant's own resources for investment			
2.	Investment credits and loans			
3.	Grants			
4.	Revenue from operations			
5.	Own working capital (means)			
6.	Operating credits and loans			
7.	Other sources (please detail)			
8.	Total all sources			
Expenditure				
9.	Investment outlays			
10.	Operating costs (minus amortisation)			
11.	Repayment of credits and loans			
12.	Interest on credits and loans			
13.	Taxes			
14.	Requirements with regard to working capital			
15.	Other (please detail)			
16.	Total expenditure			
17.	Surplus / Deficit			
18.	Cumulative Balance			
19.	Degree of investment progress (%)			

The time horizon of a cash flow forecast should cover the period from the start-up of the investment to the operational phase for as long as at least the first 5 years of operation of the installation or, in case of debt obligations, until all debt is paid back.

Sources of Finance

Applicants should provide detailed information on all sources which will be used to cover the total cost of the project. Taken together, all sources should ensure sufficient level of resources to cover anticipated expenditure.

Applicants should also be required to indicate if these resources are confirmed/committed or sought. For those that are committed, the applicant should provide a relevant proof. It is also important to require information on specific credit conditions (e.g. interest rate, repayment period). Where a grant has been obtained, information on its source and size should be provided. The level of financial assistance sought from the agency should be presented as a breakdown by years or quarters depending on agency's requirements.

When presenting financial data some of the underpinning assumptions and parameters should be given by the government or the implementing agency. These could include **input prices, discount rates, inflation coefficients**. Based on these parameters and the raw input data provided by the applicant, the agency can calculate relevant indicators, such as indicators of investment costs, NPV, IRR, etc. One main problem is facing applicants is the choice of the right discount rate. More information on this issue is provided in the next section on appraisal.

Apart from financial information on the project, an applicant will also be required to provide detailed information on his **own financial situation**. Checking applicant's general financial performance may help to detect potential risks related to project implementation.

Any additional information relevant to project appraisal should be provided in the form of annexes. Information on mandatory annexes should be specified in the instructions to applicants. Actually most of the legal and financial information can be presented as such annexes.

Instructions to agency's staff on verifying information provided by applicants

In evaluating project applications, it is important that the agency develop strict rules for staff involved in the process. These rules should be binding for all regardless of their position and status. These rules should be based on clear appraisal and selection criteria which do not raise doubts as to appraisal outcomes. Similar projects should be subject to the same appraisal procedures. These criteria and procedures should ensure that appraisal is impartial and does not favour certain project owners.

One way to ensure quality and reliability of information provided by applicants is to check project proposals against **historical data for similar projects** or **on the basis of surveys conducted by the agency**. For this reason, it is important for the agency to maintain internal databanks, periodically revised, updated and differentiated by regions.

Even if the appraisal and selection criteria are perfect, if raw data are of low quality the final result would not be optimal. One way to ensure good quality of the data and information obtained from applicants is through hiring well-qualified staff with sufficient knowledge in the respective area. Personally committed and experienced staff are crucial in detecting problems with data and ensuring the receipt of reliable information. In this context, staff recruitment on a merit basis and evaluation based on performance is all the more important. Offering competitive salaries a par with private sector financial institutions can help increase the stability and quality of agency's staff.

Using consultants

In particularly complex cases, or in case of controversy, the agency could use **external experts** and **consultants** to provide competent advice. Their advice and opinions could be of great significance in resolving a technical or financial problem related to a given project, or else be useful as a further source of knowledge for the agency when similar applications are submitted. Such external advice provides the agency with additional arguments when making decisions but does not release agency's staff from their responsibility for making final decisions on financing a project.

Using consultants as experts to help with the appraisal of more complex projects could create potential conflicts of interest. The conflict comes from the fact that these same consultants may use their internal knowledge of agency's requirements and procedures to help other applicants develop projects for submission to the agency. In principle, there is no problem if applicants using such consultants provide truly well-developed projects. The real issue is that consultants, knowing the appraisal system of the agency, would also know how to manipulate data to best fit them into the agency's criteria and get the project rank high, thus increasing the chances for financing of a project that may then face problems in the implementation phase.

In order to avoid such situations, the agency, as a minimum, should sign contracts with such consultants including a clear provision requiring them not to provide services to potential applicants who will submit projects to the agency for at least 2-3 years after the consultants' last contracts with the agency. Obviously, it is not always possible to identify such cases but at least the agency can take legal actions against consultants who have been found to breach their contracts.

Annex VIII provides an example of a full application form in use at the Polish EcoFund as well as an example of Instructions to applicants how to fill out the full application form.

Appraisal and ranking of projects

The aim of project appraisal is to assess a project on the basis of clearly specified and rigorous criteria. These criteria allow the agency to **compare, rank and select projects for financing**. When these criteria are applied indiscriminately across all (identical) projects, they can help reduce the discretion of the management board in selecting projects.

Project appraisal is conducted by professional staff with proper professional background and practical experience. Where such staff are not readily available in-house, the agency may need to seek external experts' support, particularly in its first years of operation.

In principle, **in conducting project appraisal only comparable projects can be ranked**. At the same time there are different techniques that could, theoretically, allow for comparison of any projects with one another, such as cost-benefit analysis (CBA) or multi-criteria analysis (MCA). These techniques, however, are very costly and time-consuming and they do not provide public financing agencies with practical tools for appraising individual projects. In addition, these techniques are recommended to be applied at a higher more aggregate programme level rather than at a project level. Because of the specific character of environmental infrastructure investment projects, simpler techniques, such as the *cost-effectiveness analysis*, should be used to compare projects within topical baskets (e.g. the basket of wastewater treatment plants, the basket of sewerage systems, etc.).

As discussed earlier, there are two dimensions of project appraisal: **economic efficiency** and **financial viability**. It implies that one should apply financial analysis (for judging financial viability) and CBA (for evaluating economic efficiency).

In CBA, one compares a discounted flow of benefits with a discounted flow of costs. If benefits outweigh costs, then the investment is economically efficient and could be supported from public funds. If not, the investment should be abandoned. Note that CBA does not apply to projects which simply respond to mandatory legal regulation.

When the adequate question is to identify the lowest cost of meeting legal environmental standards, the appropriate answer is provided by cost-effectiveness analysis (CEA). Typically, in appraising water sector investment projects, it is strongly recommended to use a combination of financial analysis and CEA⁹.

Project appraisal criteria

It is the sovereign right and responsibility of the government to establish project appraisal and selection criteria. The optimal package of appraisal criteria should **include environmental, technical, social, financial and economic considerations**. The agency needs to aggregate these into one coherent, internally-consistent and methodical system that allows reasonable comparisons.

In addition, the agency may introduce numerical scores and weights that could help convert considerations of different types into comparable units and aggregate them into a uniform unambiguous indicator that will be used in ranking comparable projects. Different options, formulas and algorithms for arriving at such an indicator are possible (subject to certain conditions) and these are discussed in detail further in this chapter.

⁹ This procedure is used by some of the Polish Funds: the EcoFund, the Regional Fund for Environmental Protection and Water Management in Cracow and the National Fund for Environmental Protection and Water Management with respect to projects to be financed by the ISPA.

For ranking purposes, projects can be compared either:

- against each other (true ranking);
- against past projects; or
- against a benchmark (reference/model project).

Ranking can be based on different criteria depending on what is important in a given expenditure programme. Usually, though, it is the cost-effectiveness indicator that is used as a key criterion in ranking projects as it integrates both costs and environmental benefits of projects. In addition, if projects are identical, time can be a major ranking criterion and the agency might want to reward those who implement projects first. The assistance rate can also be used as a ranking criterion for typical projects that meet certain eligibility criteria (equivalent to auctions for subsidies, see more on this in the section on selection of projects).

The essential features of a good appraisal system, incorporating criteria, scores and ranking, are:

- The system should enhance transparency and objectivity of project selection, should not create confusion or allow for covering-up discretion in selecting projects and beneficiaries for financing.
- Scores should be directly linked to quantitative project data. Discretion in assigning scores should be limited. This requires clear guidelines to agency's staff and introduction of point values for each criterion.
- Discretion of assigning weights should also be limited - through point values or specific guidelines.
- Criteria should be unambiguous, not excessively numerous and, in principle, independent from one another.
- Criteria (including environmental, technical, financial, economic) should be state-of-the-art in the respective field.
- Scores should be meaningfully aggregated into one single indicator.
- Assumptions used in forecasting certain unit costs and rates should be standardised. In order to ensure comparability and integrity, the agency should publish and require the use of standard assumptions and formulas.

In addition to the three major criteria (environmental, technical and financial/economic), the Polish EcoFund has introduced location and organisational criteria.

Location criteria

Location criteria determine where the project will have a major impact on the state of the environment. This parameter is particularly important when the impact of WWT projects on lakes or coastal waters is assessed. There are two options for setting location criteria, once in relation to the distance of the pollution source to the body of water and in the second case – in relation to the type/class of receiving body of water.

Environmental and technical criteria

The criteria used by the agency for assessing the environmental and technical qualities of a project should be designed in a way which allows determining the project environmental impact after its implementation. Three major sub-criteria are discussed, namely: the size of the pollution source, technical scope of the project and assessment of the possibility of the project to achieve its stated environmental effects.

a) Size of the pollution source

This is the primary parameter to look at when determining a project's environmental impact. The criterion should show a preference for large projects, since it is the implementation of such projects that bring the greatest and most rapid improvements in the environmental situation.

Assessment of the size of pollutant sources is based on the amount of wastewater planned to be treated in a wastewater treatment plant, amount of wastewater to be taken by sewerage, or the equivalent number of inhabitants (people equivalent, or PE) served by a plant or sewerage system. Another quantitative parameter that may be applied includes the degree to which pollutant loads are to be reduced.

b) Technical scope of the project

The size of environmental effects to be achieved depends on the substantive project scope. In water investment projects, the technical scope may include:

- construction of new wastewater treatment plants;
- redevelopment of existing wastewater treatment plants (increased capacity);
- modernisation of wastewater treatment plants (increasing the degree of treatment of wastewaters);
- reconstruction and modernisation of wastewater treatment plants;
- construction of new sewerage systems;
- reconstruction of an existing sewerage system.

In designing these appraisal criteria, it is worth mentioning that the environmental effects will differ across the above cases. There is no doubt that the greatest effect will be achieved when a new WWTP or a new sewerage system is built. Such projects would get the highest scores and would also rank high on the ranking lists.

The substantive scope of a project is the most important - but not the only - criterion that should be used in the process of technical appraisal. Other technical criteria may also be applied, though the list should be limited to those that may be defined in an unambiguous and measurable matter. An example of such other criterion is the consumption of energy per unit of treated or pumped wastewater.

On the other hand, the set of criteria should not only be limited to the assessment of wastewater-related elements of a treatment plant. The appraisal process should also assess the technical solutions

proposed for the management of solid wastes generated in wastewater treatment, and more specifically, sludge management. Those projects that propose as part of the sludge treatment not only de-watering but also further waste processing (e.g. preparation of natural use via lime addition or drying), would get the highest scores.

c) Assessment of possibilities for achieving stated environmental effects

It is necessary to assess the reliability of project's environmental effects that would be achieved once implementation of the project is complete with regard to those stated in the application. In many cases, such installations as wastewater treatment plants do not reach their peak loadings immediately after they start normal operation. Similarly, a sewerage system can be built over a period of several years and the full environmental effect can be achieved only when the entire system is completed. Possible attainment of anticipated environmental effects later than the actual implementation period should be considered in the appraisal process but the causes for the delay need to be clearly identified, thus adding a greater element of realism to the overall project assessment.

Organisational criteria

Organisational criteria allow the agency to assign a higher rank to those projects that bring an environmental benefit rapidly. Using the duration of the implementation period as an assessment parameter serves to mobilise investors with regard to the good organisation of the investment process and aiming to encourage investors to implement the project in an as short time as possible.

Table 14. Example of technical and environmental criteria

No.	Type of criterion	No. of points achievable	Project evaluation
1	<u>Technical and environmental criteria</u>		
1.1	Size of pollution source Q average ('000 m ³ /d) (assessed from figure)	up to	50
1.2	<u>Main project investment tasks</u>		
	- Construction of a new wastewater treatment plant of discharge collector as alternatives		40
	- Modernisation or reconstruction of treatment plants		20
	- Construction of waste management facilities		10
1.3	<u>Comprehensiveness of the sludge management solution</u>		
	- Preparation for natural disposal		10
	- Minimisation of sludge volumes		5
1.4	<u>Locality's level of contributing to sewerage after project completion</u>		
	- Over 70 %		20
	- 40 - 70 %		10
	- Below 40 %		0

Economic criteria

The appraisal aims to determine whether or not the **unit** (investment or O&M) costs of certain tasks in a project are comparable with those usually observed in similar cases. This may refer to the investment cost of treating a unit volume of wastewater, investment cost per equivalent inhabitant, the cost of constructing a meter of sewer, etc.

A practical and widely tested method of calculating project costs is comparing selected quantitative costs of different tasks against **reference values**. The use of this method is justified where

national or regional databases on unit costs of similar tasks are available. When such external databases are missing, the agency may choose to develop its own database containing information on projects implemented previously with support by the agency.

In conducting proper economic analysis of a project, there are two major sub-criteria that need to be assessed, namely **cost-effectiveness** and **financial viability** of the project. Unlike other criteria, both are calculated indicators. The calculation of cost-effectiveness deserves a special discussion as different institutions use different methods to calculate it.

Cost-effectiveness is defined as the discounted incremental cost of achieving a unit of environmental benefit over the project lifetime. The cost-effectiveness analysis is best applied when projects produce homogenous environmental effects. Calculating cost-effectiveness requires the estimation of investment expenditures and operating and maintenance costs and the environmental effect. The cost-effectiveness indicator is a ratio between costs and an environmental effect. The lower this cost, the better, as society spends less money on purchasing the unit of environmental effect.

Indicators of the environmental effect

There are different indicators of environmental effect: physical indicators (capacity of a WWTP, length of collectors), indicators of quality (class of the water body, existence of sensitive species) and indicators of environmental impact (pollution load - quantity of BOD₅ (or other pollutants like N and P) to be removed, volume of treated wastewater, inhabitants collected).

Measuring the environmental effect is a difficult and ambiguous task. In fact, the changes in environmental quality cannot be precisely measured either with effluent pollution or with construction indicators. The actual changes of the environment can be represented by such indicators as changes in the classification of the receiving body of waters or even using more biological ones such as development and existence of rare species. While these indicators better reflect the true state of the environment, they can hardly be tied to individual investments. On the other hand, using installed capacity and the length of sewerage in cost-effectiveness analysis does not say much about costs of achieving the environmental effect but provide information only on the cost-effectiveness of construction works, i.e. the implementing agency learns if the construction costs are below, equal or above average construction costs for a given task. This information is of moderate importance if beneficiaries are obliged to respect stringent tender procedures. Under the assumption of competition, the construction costs will always be minimised.

In this context, the impact measures of an environmental effect are the most relevant. In case of communal waste projects these measures are almost completely equivalent. In the case of different sewerage systems (sanitary vs. mixed system) there will be a discrepancy between a quantity of waste water and two other indicators (number of inhabitants and a pollution load). If a system serves also industry, there will be a discrepancy between the number of inhabitants and the quantity of waste water and the pollution load. In this case, another measure of environmental effect is recommended, namely pollution load expressed in population equivalent (PE).

Population equivalent can be calculated by dividing total daily load of BOD₅ discharged into the system by the quantity of BOD₅ released by a single person per day (0.06kg). PE says how many people would need to be located in the served area in order to release as much load as it is actually discharged.

For the purpose of calculating cost-effectiveness it is recommended to use indicators of environmental impact.

Cost indicators

In applying for support from the agency, the applicant should provide cost information, both in terms of investment expenditure and O&M costs. Costs can be expressed in two ways as **static** and **dynamic** (where the time value of money is accounted for). Static indicators, in their turn, are divided into unit investment cost and unit operational cost. Two methods for calculating the dynamic indicators are presented in this section, namely unit annual cost and dynamic generation cost.

Static indicators are less relevant in project appraisal as they do not take the time value of money into account and do not properly reflect the worth of the investment over the entire project life. In contrast, dynamic indicators represent a correct measure of cost-effectiveness as they require the calculation of discounted lifetime incremental costs.

Static indicators

Traditionally, marginal, or unit, cost serves as an estimate of the cost-effectiveness of an investment. This measure is obtained by dividing the sum of investment outlays by the environmental effect achieved in a given year. This measure has three shortcomings. First, the costs of pollution reduction depend not only on investment outlays but also on operating costs. Indeed, a project may entail higher investment costs but be significantly less expensive in operation; as a result emissions may be reduced at less cost. Second, the marginal cost approach ignores that different installations differ in operating periods; it is possible that the more expensive installation will serve for a significantly longer period and, consequently, lead to the reduction of a greater amount of pollution. Third, in specifying the annual environmental effect – typically by using the year during which full capacity is obtained – the problem of lower environmental effect in the years preceding attainment of full capacity is not addressed. If this period is long (e.g. construction of a large sewer system spread over a number of years), the marginal cost method does not reflect the fact that the invested capital is effectively frozen over the period. It might be better to finance more expensive investments that bring immediate environmental benefits.

Unit investment cost

Experience shows that unit investment cost (UIC) is one of the most common indicators used by the majority of environmental funds in CEE and EECCA when calculating cost effectiveness. This is a simple ratio between investment expenditures and an environmental effect that is generated in the first year after the completion of the investment.

Box 11. Formula for calculating unit investment cost

$$UIC=I/EE$$

Where:

- UIC - Unit Investment Cost
- I - total investment expenditure
- EE - environmental effect in the first year of operations

This indicator has a number of drawbacks. First, it does not account for O&M costs. One can easily give an example that a more expensive device is preferred due to low operation and maintenance costs. Second, UIC does not account for differences in the operation period of installations. There is a possibility that a more expensive device will serve longer than a cheaper one.

UIC will always give a priority to the latter. Third, UIC is invariant to changes in the profile of the environmental effect. It may happen that a reduction in pollution will change over the life-time of an investment (e.g. a plant will be closed down or change the production profile to less polluting). Hence, UIC should not be used in professional cost-effectiveness analyses.

All in all, it is better to use a simplified tool than do nothing. The Polish National Fund, for example, tries to correct at least some deficiencies. In addition to UIC, it calculates two separate measures that control for operational costs. These are discussed in the sub-section below.

Unit operational cost

The first one is constructed as a ratio of total annual operational costs divided by the environmental effect. The second one is a ratio of total annual energy consumption divided by the environmental effect.

Box 12. Formula for calculating unit operational cost

$$\text{UOC} = \text{OE} / \text{EE}$$

Where:

- UOC - Unit Operational Cost
- OE - total annual operational costs
- EE - environmental effect in the first year of operations

Dynamic indicators

Unit annual cost

Unit Annual Cost (UAC) allows to link investment expenditure and O&M costs. UAC is calculated as a sum of Annualised Capital Cost (ACC) and yearly O&M costs (the annualised cost of a project or AC) divided by the average environmental effect expressed in physical units (Peszko 1998). This approach is used, for example, by the Polish EcoFund. The generic formula takes the form presented in the Box 13 below.

Box 13. Formula for calculating unit annual cost

$$UAC = AC / EE$$

$$AC = ACC + O\&M$$

$$ACC = \sum_{k=1}^{k=m} I_k * \frac{r}{1 - (1 + r)^{-n_k}}$$

Where:

- UAC - Unit Annual Cost
- AC - annualised cost
- EE - average annual environmental effect expressed in physical units
- ACC - annualised capital cost
- O&M - annual operation and maintenance costs
- I_k - total investment expenditure on assets with a lifetime equal to n_k
- N_k - lifetime of assets of type k
- r - discount rate (or an expected rate of return on a project)

Unit Annual Cost is a good indicator which in most cases produces a ranking of alternatives that is consistent with true cost-effectiveness of alternatives. This is conditioned by the uniform distribution of the environmental effect across alternatives.

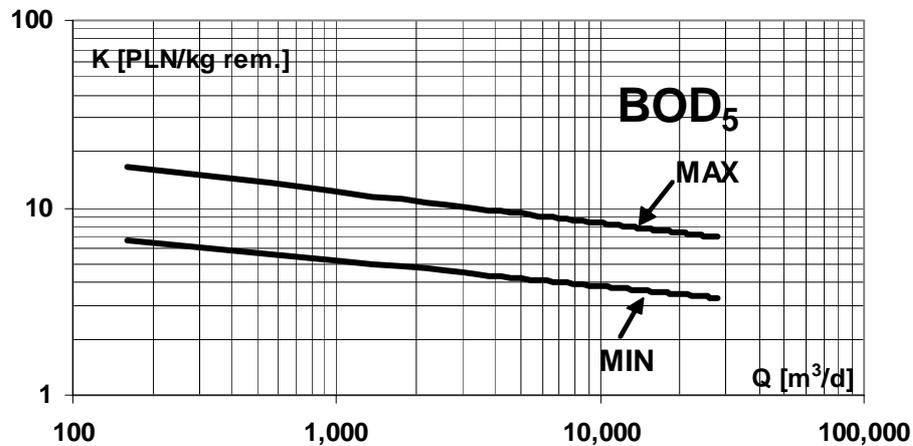
In order to understand this feature, it is useful to see how the timing of achieving environmental effects affects social welfare. This can be illustrated by the following example. A polluted lake needs to be revitalised. There are two options to do so. Each option is characterised by the same profile of expenditures. However, one technology will clean the lake in the next year, while the other – two years later. A rational citizen, or an implementing agency for that matter, would prefer the former as this will allow people during these two years to enjoy an additional stream of environmental benefits generated by the cleaned lake. So, the sooner an environmental effect is achieved, the better for society. The above comes to show that time in investment projects matters.

UAC fails to account for the distribution of environmental benefits over time. It will rank equally an investment, which produces 10 units of an environmental effect in the first year of operations and 1 unit per year in the remaining 9 years of operation, and an investment which has a reverted profile (1 unit per year during the first nine years and 10 units in the tenth year).

While UAC is still not an ideal measure of cost-effectiveness, it produces good estimates and works well in most typical cases. In some cases, it is very difficult to make a reasonable projection of an environmental effect. Therefore, applying a more sophisticated method that will depend on imprecise projections does not add any value.

When the UAC for the reduction of a unit of a certain pollutant is calculated, its value is compared with values already observed in similar projects implemented previously. figure 6 below shows minimum and maximum values for reducing 1 kg of BOD₅ as used by the Polish EcoFund. The Polish EcoFund has developed and regularly updates and maintains its own database on relevant cost values which it uses for benchmarking.

Figure 7. Example of an environment indicator



Source: Polish EcoFund.

When there are more pollutants in effluents (say 4 pollutants - BOD₅, suspended matter, N, and P), the UAC for each of these pollutants is calculated and compared against historic data. In comparing the unit costs of the pollutants with historic values, the Polish EcoFund requires that at least three of the four indicators should have costs below the upper limit. Projects not meeting this condition are rejected. In addition, it is the two best values that enter the points assessment.

Dynamic generation cost

Dynamic Generation Cost (DGC) is a ratio between discounted costs and discounted benefits. It is a dynamic indicator used by the Polish National Fund for conducting an economic appraisal of ISPA investments (Rączka 2002a)¹⁰. This index has a similar structure like Cost-Benefit Ratio used in CBA. However, benefits are not monetised but are expressed in physical units. The DGC formula is given below.

¹⁰ It is used by most development banks (see for example KfW 1993, ADB 1999). However, each institution calls it differently. In principle, this is a long run marginal cost.

Box 14. Formula for calculating dynamic generation cost

$$DGC = \frac{\sum_{t=1}^{t=n} \frac{KI_t + KE_t}{(1+i)^t}}{\sum_{t=0}^{t=n} \frac{EE_t}{(1+i)^t}}$$

Where:

- DGC - Dynamic Generation Cost
- KI_t - investment expenditures in year t
- KE_t - O&M costs in year t
- EE_t - environmental effect in year t
- i - discount rate
- n - lifetime of an investment

DGC has been used by the Polish National Fund in appraising ISPA investments in Poland since June 2002. This has allowed improving the appraisal procedure in different ways. It is used for the option analysis (least cost analysis) as well as for down-sizing investment programmes and, to some extent, for benchmarking projects (if the least cost analysis is not feasible).

Dynamic Generation Cost is the ideal measure of cost-effectiveness. It has all advantages of UAC and in addition it is sensitive to changes in the distribution of the environmental effect over time. In fact, DGC is the best proxy of a long run average cost. This is a very important feature that is very useful for designing tariff policies and checking, if the utility respects the Polluter Pays Principle. These dimensions are very important for all International Financing Institutions and the EU Commission.

Box 15. Approaches to calculating cost-effectiveness indices

Static indicators

Unit investment cost, UIC - a proportion of total investment costs to an environmental effect achieved in the first year after completing an investment. The environmental effect is expressed in physical units. This is a static indicator, which is easy to calculate (particularly, if an installed capacity is used as a proxy for the environmental effect) but does not have any economic meaning. The major drawback of this measure is a neglect of O&M costs. Hence, it produces a ranking of alternatives that is not consistent with true cost-effectiveness of alternatives. UIC is appreciated by engineers as technical designs contain all necessary data, making the indicator non-ambiguous.

Unit operational cost, UOC - a proportion of yearly operational costs to an annual environmental effect expressed in physical units. This indicator is much closer to the economic theory. It may be considered as an estimate of the long run average variable cost. Calculated on its own, it cannot be used for cost-effectiveness analysis. Hence, it is usually a complement to UIC.

Dynamic indicators

Unit annualised cost, UAC - a proportion of annualized capital costs and O&M costs to an average annual environmental effect expressed in physical units. This is a very good indicator and is sound in economic grounds: both costs and results are expressed in annual flows. This measure gives a consistent ranking of alternatives under the condition that the distribution of the environmental effect is uniform across alternatives. Usually, it can be used for designing tariffs and checking, if the Polluter Pays Principle holds.

Dynamic generation cost, DGC - a proportion of a discounted stream of costs and a discounted stream of environmental effects measured in physical units. This is an ideal index, as it gives both a consistent ranking of alternatives and proxies the long run marginal cost. Hence, it can be applied to the cost-effectiveness analysis as well as to designing tariffs and checking, if the Polluter-Pays-Principle holds.

Methods for calculating financial viability

The agency needs to check the financial viability and profitability of the project in order to assess the project's capacity to generate revenue and thus the necessity or not for public support. This requires a comparison between overall expenditure (irrespective of source of financing) and environmental effects (benefits).

Experience shows that many environmental funds in both the CEE and EECCA regions do not conduct financial analysis of projects. As a result, they do not control financial viability and support projects which are commercially viable.

The two most common indicators of financial viability, based on discounted cash-flows, are internal rate of return to an investment (**IRR**) and net present value (**NPV**). These are dynamic indicators that take into account changes in prices and percentage rates over time.

In order to compare different investment opportunities it is necessary to discount the future cash flows to their present value. The NPV is the overall present value of the discounted cash flows less initial investment costs. The NPV must always be positive for a project to be attractive. A positive NPV of a project implies that the project can generate more cash than is needed to service a debt and provide the required rate of return on the invested capital. In other words, the higher the NPV, the higher the financial viability of the project. In addition, NPV favours projects with higher cash flows in the early years of the project.

NPV is calculated as the sum of discounted net cash flow.

Box 16. Calculation of NPV

$$NPV = \sum_{i=0}^n (NCF_i \times \frac{1}{(1+w)^i})$$

Where:

- NCF_n is the annual net cash flow for the project in years $n=1,2\dots j$
- w is the accepted discount rate

The NPV can be calculated using different discount rates. The discount rate usually reflects assumptions about the risk of the project and the cost of capital. Real discount rates (net of inflation) should be used in calculating NPV. The appropriate discount rate should be given by the agency. **It could be determined in relation to alternative investments with a low level of risk (e.g. rate at which government bonds are sold) or compared to the country's central bank rediscount rate.** The discount rate should reflect the opportunity cost of capital that refers to the rate of return that the investor would obtain investing elsewhere, assuming the same financial risk for compared options. In other words, the discount rate should constitute the minimum rate of return, below which the investor should decide not to undertake the project. In some CEE countries, the discount rate is the average cost of loans awarded by a funding institution. A more detailed discussion on the philosophy of the discount rate is provided in Annex IX.

The IRR is the discount factor for which the total revenue generated by the project, once discounted, equals the initial investment. It is the discount rate at which the NPV is equal to zero. It can also be defined as the expected rate of return on the invested capital. The higher the IRR of a project, the more the investor is stimulated to invest from his own resources. IRR can be calculated through an iterative process continuing until the discount rate at which NPV equals zero is found. In addition, IRR favours investments with higher cash-flows in the later years of the project.

IRR is calculated using the following equation.

Box 17. Calculation of IRR

$$\sum_{i=0}^n (NCF_i \times \frac{1}{(1+IRR)^i}) = 0$$

where

- NCF_i (net cash flow) is the difference between benefits (revenues) and expenditures in the i_{th} year;
- n is the number of years.

When risk-adjusted IRR of a project is higher than prevalent commercial interest rate, there is no need to use public resources to support such a project. A project of this kind will most certainly lie in the area of interest of the private sector for which the promise of high financial returns will provide

enough investment incentive. On the other hand, if a project generates economic and social benefits to a wider community, its economic rate of return (ERR) is high. If a project's ERR is lower than the so-called social discount rate that reflects the minimum socially acceptable rate of return, the project should be rejected due to risk and low benefits to the community.

The Polish EcoFund uses the commercial banks interest rate (4%) to which it adds a premium of 8%, if IRR of a project is above 12% the project is rejected as commercial.

When calculating financial indicators, constant prices should always be used, that is to say prices adjusted for inflation and fixed at a base-year. If project costs change over the years, the implementing agency should clearly specify in its agreement with the beneficiary who should bear the risk of higher costs.

Designing a Package of Criteria and Points Values

Once all economic criteria are calculated, they are assigned respective points and final scores are determined.

The example below (based on the practice of the Polish EcoFund) shows a package of economic criteria. UAC is used to assess the cost-effectiveness of the project while IRR is applied for assessing project's financial viability. In addition, contribution of the beneficiary's own resources is also considered an important criterion and is individually assessed. Both IRR and the level of beneficiary's contribution are assessed against historic values.

Table 15. Economic criteria in use at the Polish EcoFund

No.	Type of criterion	No. of points achievable		Project evaluation
1	Economic criteria			
1.1	Indicators of pollution abatement costs	up to	40	
1.2	IRR indicators of profitability of investment			
	(assessed from figure)	up to	20	
1.3	Level of own resources			
	(assessed from figure)	up to	20	

The ultimate aim of appraisal of a project is to convert criteria against which the project is assessed into points values which are then summed up in a single number that enters the ranking list. The criteria that enter the ranking list are also called selection criteria. In addition, these criteria may be assigned weights which will reflect their significance with regard to other criteria. The final score (the total sum of all selection criteria multiplied by their respective weights) will then determine the place of the project on the ranking list.

The package of appraisal criteria and their respective points values, presented in Annex X, are based on the Polish EcoFunds practices. The protection of naturally-valuable lakes is used as an example. The package is very much universal in character and can be used in the appraisal, ranking and selection of any project in water protection. However, some of its elements may require modification (replacement, expansion, etc.) in relation to different types of the project.

Instructions to staff conducting appraisal

The above examples simply illustrate one possible approach that could be used in appraisal and ranking of water projects. The application of this system, however, is not as straightforward and agency's staff will need guidance on how to properly implement it. Therefore, the agency needs to develop detailed, unambiguous and precise instructions to staff for interpreting each single criterion and parameter which will ensure a smooth and transparent appraisal process understandable to all.

In addition, the agency need to decide if the appraisal, ranking and selection criteria will be published or designated for use by agency's staff only. It is not recommended that detailed information on the points assessment system be made available.

Formulation of clear regulations for handling accusations and appeals from applicants should also be developed. Strict application of regulations should be required from all staff. The nature of the appraisal process compellingly calls for a system of internal checks and external audits. Such checks are needed to ensure the precision of the application of appraisal rules and procedures by staff.

In addition, the government should not interfere with the appraisal process or try to change the order of projects on the ranking list developed by agency's professional staff. Instead, they should provide the agency with sound, transparent and rigorous appraisal criteria and rules and monitor their application.

Evaluating applicants

Apart from conducting a detailed appraisal of the project, and in order to determine applicant's eligibility, the agency should undertake a separate evaluation of the applicant as well. This analysis is important as it allows the implementing agency to identify any political, legal, institutional, and financial risks related to the applicant which might undermine the successful implementation of the project.

Evaluation of applicants requires the assessment of two major issues:

- Institutional capacity of the applicant to implement the project with a major focus on evaluation of its legal status and ownership titles to the assets; and,
- Financial viability of the applicant with a major focus on assessment of his creditworthiness.

Institutional capacity of the applicant to implement the project

Some of the key issues in assessing the institutional capacity of the applicant to implement the project are:

- Understanding the applicant's legal environment – checking its legal status, ownership of assets, degree of autonomy, scope of responsibilities, nature of the constitutional charter, legislation that regulates its performance;
- Previous experience of the applicant with managing and implementing investment projects;
- Track record of the applicant with credit/loan repayment – date, amount and circumstances of default, if any;

- Professional qualifications, management skills and reliability of staff implementing the project, appointment, remuneration and training policy.

In addition, where the applicant is a municipality, other institutional issues to be checked could cover:

- Legal and political issues related to the national revenue-sharing system and the direction of any changes in the system as these may influence applicant's fiscal balances;
- Possibility to fund operational expenditure from user charges, fees and taxes or through earmarking;
- The ability of the municipality to adjust its expenditure budget effectively to a changing economic environment;
- Constitutional and statutory regulations governing powers, financial operations, debt issuance and debt restrictions;
- Planned privatisation of government-owned utilities.

One central question that needs special attention in evaluating applicant's capacity is its **legal status**. This issue is of particular concern as it defines the capability of the applicant to enter into legally-binding contractual relations or to raise debt. In complex infrastructure projects, the borrower, the owner of assets, the construction contractor, the equipment supplier are often different legal entities. Therefore, it is of paramount importance for the agency to clarify from the outset who exactly the financial agreement will be signed with and, if a loan is extended, who will be paying back the debt.

Financial viability of the applicant

The major purpose of evaluating applicants' financial performance is to ensure that the applicant will be reliable all along the lifetime of the project. In addition, when the agency provides subsidies in the form of loans, the agency needs to ensure that the applicant will be able to generate sufficient operational surplus and pay back the debt. In addition, by assessing the financial viability of the applicant, the agency can assess, if the applicant really needs a subsidy to implement the project or could raise debt on the commercial market.

The following key factors may be considered:

- Applicant's level of profitability – this implies checking applicant's financial statements, including profit and loss, balance sheet, cash-flow statements, any auditors' statements;
- Applicant's on-going liquidity to meet current obligations and ability to service and repay debt from operating cash flows;
- Applicant's ability to maintain an investment grade credit rating;
- A comparison of capital structure and financial position relative to comparable applicants.

Applicants' creditworthiness

In the case of loan extension, the most important part of the financial viability analysis of the applicant is the assessment of his **creditworthiness**. In the environmental infrastructure sector, municipalities are the major clients. In assessing their creditworthiness, the implementing agency can do a case-by-case analysis or rely on **external rating** or evaluation. The agency itself could develop **its own rating system** and maintain a database of municipalities' credit risk, as this is done, for example, by the Austrian KommunalKredit Bank.

In addition, the most common methods for securing debt by public implementing agencies are: guarantees, collateral, other safe security measures. More specifically, these could be:

- State or sovereign guarantee;
- Bank guarantee;
- Real property – land, real estate, fixed assets;
- Performance bonds or escrow account – where the applicant is required to set aside a certain amount of money and the agency is given full access to this money in case of a failure of the applicant to meet his contractual obligations with the agency.

The rule of thumb concerning the collateral policies adopted by the implementing agency with regard to municipalities is that the **collateral accepted should be safe but flexible**. It seems that currently in most of the transition economies, real property owned by municipalities is perceived as the safest collateral. This practice reflects the extent of commercial property holdings by local governments in these countries. In addition, this reflects the high political risk attached to state guarantees.

However, more recently a number of CEE countries have started accepting more liquid forms of collateral. This is the situation where the agency could be granted the right to withdraw any loan payments due directly from the municipality's accounts. Such **liquid collateral** is seen as very effective in reducing loan defaults since it requires a deliberate choice on the part of a municipality to assign to a lender the right to debit its current account.

Another type of collateral gaining weight world wide has been the **intercept provision**. Such a provision gives the lender first claim on intergovernmental transfers otherwise due to the municipality. Intercepts of this kind can be found in a number of OECD countries. In many developing countries, such provisions have helped reduce the rates of arrears of paying back loans. This type of guarantee is particularly good for countries with stable and predictable economies where intergovernmental transfers have a track record of stability.

**Box 18. Risk assessment in providing loans to municipalities
(Example from the Polish National Fund)**

Risk assessment is largely based on two major components, namely:

- Analysis of the municipality's creditworthiness in terms of borrowing capacity and current and forecast debt servicing capacity; and,
- Evaluation of the collateral provided by the borrower.

Assessment of the borrowing capacity aims to identify the strengths and weaknesses of the municipality taking account of external factors affecting its budgetary revenues and expenditures. The Fund carries out an analysis of the budget forecasts for the period of financing presented by the municipality, and if such forecasts are considered unrealistic, the Fund requires additional clarifications and makes appropriate adjustments. Such adjusted forecasts constitute the basis for the final risk assessment. If it is not possible to make such adjustments, the Fund may decide to use the budget forecasts for the period of financing prepared on the basis of the current accounting period data.

The debt servicing capacity (the ratio of interest and principal repayments to gross income) should not exceed the threshold fixed in the Public Finance Act of 15 % of the budget receipts.

In evaluating the collateral provided by the borrowing municipalities the Fund uses three categories:

Category 1

- State Treasury guarantees;
- bank guarantees;
- assignment of rights under State Treasury securities;
- assignment of receivables under a time deposit account;

Category 2

- civil law surety¹¹ and bill of exchange backing/ by other municipality;
- fiduciary transfer of title, registered pledge on:
 - movables /together with assignment of rights under insurance policy;
 - rights under securities;

Category 3

- mortgage on real estate owned by the municipality.

Overall, proper evaluation of applicant's eligibility is a difficult and time-consuming process. It shares many of the standard due diligence procedures applied by banks. Effective due diligence requires specific professional knowledge and well-developed information management system. As such expertise is not readily available with public administrations in the EECCA region managing public environmental expenditure programmes, it is worthwhile paying a bank to conduct this procedure for the agency.

¹¹ Surety is a guaranty of debt repayment or fulfillment of contractual obligations. Borrowers unable to obtain credit under their own name often have a third party sign the application. Under a surety contract, the lender can look first to the guarantor for payment if the borrower defaults

Selection of projects for financing

After project appraisal is completed and projects ranked, those projects that get the highest ranking are selected for financing by the agency. The number of projects selected for financing within a given programme area depends on the level of available resources for this area. Once all available resources are exhausted, the agency should draw a cut-off line below which no more resources for financing remain.

One of the major issues that an implementing agency needs to decide on during the selection stage is the rate of assistance that a project should be given.

Finding the right level of the assistance rate is not an easy and straightforward process. It requires a political consensus of all major stakeholders, including, among others, industry lobbies and municipalities associations. Experts' contribution and participation are particularly important as they will provide the robust arguments to politicians to make final decisions. Needless to say, any decisions will need to be preceded by a detailed study of the real demand for subsidised financing (versus other sources of financing), in terms of sectors, regions, project types, project owners that need subsidies from this particular scheme as well as the eligible costs that the agency will cover. Based on the findings of such a study, aid intensities could be considered in a way that would ensure the leveraging effect of the resources disbursed by the agency.

A number of elements that will define the terms of financing needs to be considered, including:

- Definition of eligible costs;
- Form of the subsidy – a lump sum versus a percentage from project's eligible costs;
- Limits of aid and investment costs.

Definition of eligible costs

In general, aid intensity always refers to eligible costs. Eligible costs include all costs deemed reasonable and necessary to ensure completion of a project. These are costs directly linked to the achievement of environmental objectives stated by the project and supported by the agency. However there is no one single definition of eligible costs. OECD and EU have defined eligible costs in state aid which are binding for their respective member states. These definitions could be used by the transition economies as benchmarks.

Box 19. Eligible costs in the 2001 EU State Aid Policy on Environmental Protection

In the context of the EU state aid policy on environmental protection, eligible costs are generally defined as costs necessary to achieve environmental objectives additional to normal business investments. More specifically, Article 3.2.1. of the Community Guidelines on State Aid for Environmental Protection of 1994 requires that:

“...The eligible costs should be strictly confined to the extra investment costs necessary to meet environmental objectives. General investment costs not attributable to environmental protection must be excluded. Thus, in the case of new or replacement plant, the cost of the basic investment involved merely to create or replace production capacity without improving environmental performance is not eligible. Similarly, when investment in existing plant increases its capacity as well as improving its environmental performance, the eligible costs must be proportionate to the plant's initial capacity. In any case, aid ostensibly intended for environmental protection measures but which is in fact for general investment is not covered by these guidelines. This is true, for example, of aid for relocating plant to new sites in the same area...”

In addition, the most recent guidelines on state aid for environmental protection provide for the strict limits of eligible activities and costs. These are:

- Aid for investment to adapt to new compulsory EU environmental standard or to improve on such standards – eligible costs are strictly limited to the extra costs of the investments in land, buildings, equipment and intangible assets necessary to achieve the compulsory standards and/or to meet the environmental objectives, this aid can be granted only to SME only for a period of 3 years from the adoption of these new standards.
- Aid for investment in energy saving, in renewable sources of energy and in combined heat and power installations (CHP) - eligible costs are strictly limited to the extra costs of the investments in land, buildings, equipment and intangible assets necessary to achieve the environmental objectives. In case of renewables or CHP, eligible costs are defined as the extra cost compared to the cost of a comparable conventional power plant.
- Aid for the rehabilitation of polluted industrial areas – this aid is granted only if the person responsible for the pollution cannot be identified, the eligible costs are equal to the cost of the work to repair the environmental damage less the increase in the value of the land.
- Aid for the relocation of firms - this aid can be granted only if the change of location is dictated by environmental concerns or ordered by administrative or judicial decision. Eligible costs are limited to the net costs of the relocation.
- Aid for advisory services – such aid is allowed only for SME.

In addition, the OECD PAC expenditure methodology, particularly in its part on investment expenditure in integrated technologies (that is process-integrated investments as opposed to end-of-pipe technologies) could provide a useful benchmark as well in defining eligible costs. The difficulty associated with investments in integrated technologies is establishing what proportion of the total investment expenditure should be allocated to pollution abatement and control. In principle, the cost difference between the integrated plant and what would have been paid for a cheaper, viable, but less environmentally benign plant, should be recorded as PAC expenditure.

Form of the subsidy

The exact cost of environmental infrastructure projects is difficult to calculate up-front. This is the reason why it is better to fix the aid intensity as a percentage of eligible costs rather than as a lump sum.

Limits of aid and the investment costs

Before fixing aid intensity, its lower (entrance) and upper limits need to be agreed. Entrance limits aim at generating projects of a certain size and at reducing transaction costs. Upper limits prevent the financing scheme from being emptied by a small number of projects only.

Systems for calculating aid intensity in investment costs

Aid intensity can be calculated in different ways and based on different criteria. Every system has some advantages and disadvantages. Four such systems are discussed below:

- Aid intensity reflecting the need of the beneficiary;
- Aid intensity as a given percentage of investment costs;
- Aid intensity as a module system;
- Aid intensity in a tendering process (auction).

Aid intensity reflecting the need of the beneficiary

In this case, aid intensity is calculated by the agency as part of the appraisal process on the basis of project data. This requires the calculation of the maximum amount of the beneficiary's contribution and the maximum annual operating costs (including the interest rates of commercial loans) as well as taking into account social and regional criteria (GDP, income per capita, etc.).

This system is rarely consistently applied but some countries try to differentiate the amount of aid to municipalities in this way. Aid intensity in the Austrian subsidy system for waste water varies according to the specific costs of the investment. It ranges from 20 % up to 60 % in rural areas.

Aid intensity as a given percentage of investment costs

This system is the most common one used for calculating aid intensity. The system of different aid rates should be published and made known to all interested parties as well as periodically revised. The advantage of this approach is that it is very transparent and easy to handle. However, it works with averages and does not reflect the real financial situation of the beneficiary.

Aid intensity as a module system

This system implies that starting from a certain basic intensity the applicant has the possibility to gain higher intensities by taking additional actions, such as improving its environmental performance, certain management practices, etc. These higher subsidies could be expressed as a percentage of project's eligible costs or lump sums (money per meter, etc.). This system is very flexible and allows the state to introduce new objectives or to speed up certain developments. The risk in this approach is that this system helps rich municipalities because they can afford higher standards.

Lump sums or average cost per measure are widely known in the funding systems. These systems need a high grade of standardisation. In Austria, for example, sewers for small WWTP are standardised and a certain amount per meter of sewer is used in calculations. This gives an incentive to applicants to find cheap solutions in order to reach higher aid intensities.

Aid intensity in a tendering process (auction)

With this system applicants are asked to choose the level of aid they need and compete against each other in terms of lowest aid requested. Therefore, the less the applicant requests the higher the chances to get support from the public financing scheme. Such a system, implemented in Austria, has shown its advantage and has helped reveal the real demand for public support. As a result of this

auction, aid intensity decreased dramatically for the specific group of projects (see Box 20 on Windmills below). This mechanism creates the risk that rich municipalities get support first, which might not be relevant from an environment point of view.

This system is best used for similar projects which are comparable from a technical or economic point of view.

Box 20. Auction for subsidizing windmills in Austria

In 1997, Austria decided to open as part of its programme on energy efficiency a financial window to support project owners who would be willing to build windmills. After discussion with experts, lobby groups and ministries, aid intensity for such projects was set at 30 % of investment costs. In 1998, an auction for distributing subsidies for windmill projects was organized and a fixed amount of money (approximately € 2.5 mln) was put out to a public tender. Application forms were provided exclusively in an electronic form and a lot of parameters (such as the calculation of running costs, reinvestments, return on investment, etc.) were fixed or allowed in a certain range. On the basis of the basic data provided by the applicant, the programme could calculate requested aid intensity. The applicant had the possibility to vary his data (such as costs, return on investment) in order to optimize the aid intensity he has requested. As a result of this system, the requested aid intensity decreased within 2 years from 30 % (which everyone considered to be necessary) to average 7 % of investment costs.

Summary and guidance for the implementing agency

Project appraisal constitutes the main function of any implementing agency and the core of the management of the project cycle. Its main aim is to compare, rank and select projects for financing. Unlike programming, which is mostly a political process, the appraisal is a technical process which should be conducted by professionally competent staff held strongly accountable for decisions.

For complex investment projects a two-stage appraisal is recommended. The first stage is eligibility screening and the second stage – appraisal proper. Only projects which have passed the eligibility screening should be subjected to full appraisal on the basis of detailed information and data requested from applicants. All data and information should be provided in standard application forms. Detailed instructions to both applicants on how to fill in the forms and to staff on how to use and interpret the information in the appraisal process should be prepared. The agency should develop an optimal package of eligibility (knock-out) criteria. Appraisal criteria (environmental, technical, financial and economic) should be simple but robust. Cost-effectiveness criterion should be a key selection criterion.

Proper appraisal requires the calculation of financial viability and economic efficiency of projects. This implies that one should apply financial analysis (to judge financial viability) and cost-benefit analysis (to judge economic efficiency). As cost-benefit analysis does not apply to projects which simply respond to mandatory legal requirements and standards, the adequate question is not if benefits outweigh costs but rather what is the lowest cost at which to meet the legal requirements. This answer is provided by the cost-effectiveness analysis. In the appraisal of water sector investment projects, it is recommended to use a combination of financial and cost-effectiveness analysis. There are different approaches to calculating the cost-effectiveness indicator. The Dynamic Generation Cost indicator produces the most relevant results.

In selecting projects for financing, it is important to distinguish between appraisal (evaluation) of an applicant and appraisal of a project. The analysis of the applicant's financial situation and overall performance allows the implementing agency to identify any political, legal, institutional, and financial risks related to the applicant which might undermine successful implementation of the project.

The appraisal and selection of projects constitute the last stage before actual disbursement of agency's resources. All decisions made during this stage should be aimed at ensuring the selection of the most cost-effective projects for financing in order to optimise the use of public resources provided by the agency and leverage additional resources for environmental investments.

CHAPTER 3 AFTER-PROJECT SELECTION

The after-project selection represents the last stage of the actual appraisal process. Its major components include:

- commitment of the implementing agency to support a selected project;
- negotiations with a beneficiary over the financing terms and time schedule of implementation of the project;
- actual contracting; and,
- financial transfers to the beneficiary.

This chapter looks closely at the different stages of the after-project selection process and proposes a menu of options to deal with potential problems related to each of its components. Although actual tendering of a project that has received commitment for support by the agency is formally not part of the project cycle as it is a responsibility of the applicant, the results of the tender procedure have important implications for the final decision of the agency whether to support the project or not. Tendering is discussed first in order to shed some light on issues which are of direct relevance to the individual components of the after-project selection stage.

After-project selection

Issues for consideration related to tendering

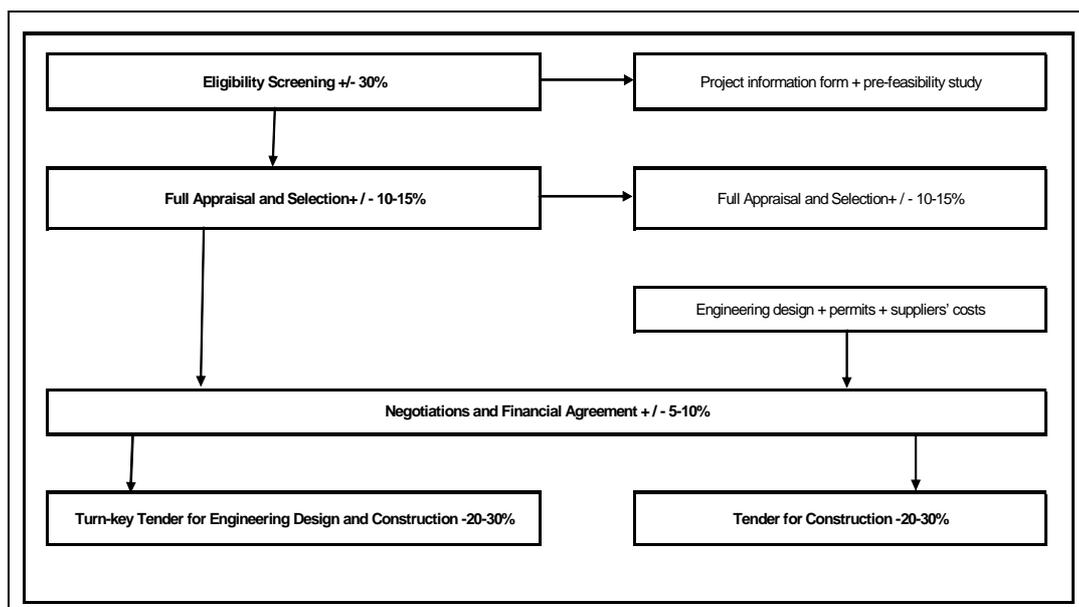
Usually, after a project is selected for financing, and the applicant has obtained commitment by the agency to support his project, the applicant proceeds with preparing a full engineering design for the project and seeks price quotes from potential suppliers. Equipped with data from the design and the price quotes, the applicant goes to the negotiation table with the agency. Therefore, during negotiations, most often, the agency works with rough project cost estimates based on data coming from the project engineering design and suppliers' price quotes.

After an agreement is reached and a contract signed, the beneficiary announces a tender for the project. Real project costs are only revealed during the project tendering. The question for the agency then is: how to ensure that the real prices revealed during tendering or expected environmental effects for that matter do not change or at least do not differ significantly from those stated in the application form on whose basis the project has been selected for financing?

During the after-project selection, the main objective for the agency is to obtain information as precise as possible on the real costs of all individual components of the project and to ensure that the

environmental effects stated upfront by the applicant do not change. **While the level of certainty over the costs and environmental effects during the different stages of the project cycle changes, the final calculations of the cost-effectiveness indicators, conducted after tendering, should not change the place of the project on the ranking list developed during the appraisal phase.** Figure 8 below provides the margin of errors in estimated project costs throughout the project cycle that could be used by agencies as a reference in project assessment.

Figure 8. Decreasing margin of errors in estimated project costs throughout the project cycle



As seen in Figure 8, the closer to the financial agreement a project goes, the smaller the margin of errors. This margin constantly decreases until it becomes negative only during the tendering process, when real costs, prices and environmental effects become finally known.

The explanation for this decreasing margin of errors is pretty straightforward. During the eligibility screening and the full appraisal the applicant works with rough cost estimates based on pre-feasibility/feasibility studies and technical concepts. After the applicant has obtained an initial commitment for support by the agency (at the end of the full appraisal and selection stage), he can then get a complete engineering design as well as obtain price quotes from different suppliers. Using this more precise information, the agency's staff re-calculate the major cost-effectiveness indicators. If there is no major change in the position of the project on the ranking list, the agency invites the applicant for negotiations. If an agreement is reached and a contract signed, the beneficiary can start the tendering of the project. These indicators should be once again re-calculated after tender results are known. Even if there is a contract already, the agency should not make any financial disbursements to the beneficiary, if after re-calculating the cost-effectiveness indicators the project place on the ranking list has changed.

Simply speaking, tendering is the procedure by which the beneficiary selects contractors to implement the contract. **Tendering is a responsibility of the beneficiary and not of the agency.** The tender for construction is the final stage of this process. There are certain projects though where a turnkey tender can be organised for both the project engineering design and construction (and even procurement of equipment in some cases). In this case, negotiations and financial agreement are based directly on the results of the appraisal process.

Turnkey is a method of construction whereby the contractor assumes total responsibility from design through completion of the project. Although, this might sound as a good means for the agency to share the risk for constructing the project with the beneficiary, this does not mean that turnkey projects should not be subjected to the scrutiny of robust appraisal as the agency's role is to ensure the achievement of the project's environmental objectives and not simply recuperation of funds.

In some cases (for instance, if the applicant has also applied for financing from a different source), the applicant may also have prepared full engineering designs before appraisal. This is clearly preferred, as this means that more realistic design costs can be used in the appraisal process, which in turn reduces the agency's uncertainty regarding costs (and thus reduces financing risk once a decision is made). The agency's preference for more realistic design costs may be reflected in a policy in which such projects receive more points during assessment, and consequently a higher score on the ranking list.

How to deal with differences in costs before and after tendering of the project?

As stated earlier, **real project costs are revealed only during the project tendering**. It is possible that during the tendering, actual costs differ from those laid down in the financial agreement in both directions – they could be 20-30% lower than the costs fixed in the contract or they can be higher.

There are different ways of dealing with such differences in the costs before and after tendering. One of the best approaches is to fix the subsidy level either in absolute amounts (e.g. 1 mln Euro) or as a share of the total eligible cost (e.g. 50%) that will be supported by the agency. Most of the well-performing CEE Environmental Funds (the Polish EcoFund, the Polish Krakow Fund, Austria) use this practice and they choose one of the two limits, whichever produces a better outcome for the agency. Thus:

- if there are cost savings – it is best to offer the subsidy as a percentage of the project eligible costs, in this way both the agency and the beneficiary share the savings;
- if there are cost overruns – the subsidy can be expressed in terms of absolute amounts which will not require additional agency's resources, the increase of project costs will rather imply an effective decrease of the agency's support for the beneficiary.

In principle, cases where huge differences in the costs before and after tender are observed should be rare, as if otherwise, this will imply that the agency's staff have not been able to detect risk and problem areas in the project at earlier stages and they do know the market for environmental services well. In principle, when more complex projects are tendered by the beneficiary, it could be useful for the agency to obtain the right to sit as an observer on the committee assessing the bids in order to ensure that procurement rules are observed by the beneficiary and the most cost-effective engineering solutions selected.

In either case, the agency needs to make it clear from the outset that the **scope of the project as originally submitted by the applicant is the only basis for the project appraisal** and only costs based on this project scope could be covered by the agency.

While these solutions may not fully solve the problem, if there is a clause in the contract linked to costs identified in the original project scope versus tender costs, the problem could be at least minimised. Therefore, it is important to make adequate legal provisions in the contract that clarify the agency's position on changes in the project scope, costs and environmental effects before and after

tender. If changes are made to the original project scope and prices, the Management Board should inform the Supervisory Board of such changes before a final decision on disbursement of resources to such a project is made. In general, there should be a limited scope for discretionary power exercised by staff.

Box 21. How to deal with differences in prices before and after tendering

- Fix two limits for the subsidy levels – as a percentage of the total project costs or in absolute terms. Apply the option which is more favourable for the agency.
- Introduce a clause in the financial agreement stating that the scope of the project as originally submitted by the applicant is the only basis for the project appraisal and only costs based on this project scope could be covered by the agency.
- Consider each such project on a case-by-case basis and make judgments individually. Analyse price differences carefully and investigate their causes. If higher prices are justified, revisit the financial agreement and adjust it accordingly before actual disbursements are made.
- If price differences are significant and the applicant has intentionally cheated and decreased the original costs stated in the application form, terminate the contract with the applicant. Include a clause to this effect in the contract with the beneficiary.
- When more complex projects are tendered by the beneficiary, obtain the right to sit as an observer on the committee assessing the bids in order to ensure that procurement rules are respected by the beneficiary and the most cost-effective engineering solutions selected.

Commitments

Once a project has been selected for financing, the agency sends a **commitment letter** to the applicant to inform him of this decision. The commitment letter is not a legally-binding document and by no means is it a guarantee that the project will receive financing. The letter only states the agency's interest and intent to support the project under certain conditions. The Polish National Fund, for example, requires a response within 15 days after the applicant has received the commitment letter from the agency, otherwise the intent of support is considered null.

In order to prevent manipulations to the project scope and costs by applicants after appraisal and selection is completed, the scope of the project should be “frozen” between commitment and the signature of the financial agreement. Any adjustments to the scope should be based on and compared to the original technical and financial plan submitted by the applicant.

Negotiations

Negotiations between the agency and applicants who have received a commitment letter are usually based on the information provided by the engineering design of the project (the design should be prepared by chartered/qualified engineers). Negotiations should be conducted by a team of representatives of the agency that could include inter alia, staff from the environmental department of the agency, the financial and control department, applications and contracts department and a legal advisor.

The main purpose of the negotiation process is to clarify, to the extent possible, all pending issues before a financial agreement is reached as well as eliminate potential misunderstandings. The agency staff responsible for the project appraisal should prepare a check-list of possible issues for discussion and clarification with the applicant (also called, a negotiation form). This negotiation form should be

sent to the applicant well in advance in order to give him sufficient time to prepare for the negotiations. An example of such a checklist is provided in Box 3.2 below.

After negotiations are successfully concluded, a memorandum should be drawn up and subsequently agreed upon and signed by all parties. This memorandum will further constitute the basis of the final decision of the agency. The memorandum should be discussed by the management board of the agency along with the results of the environmental, technical, economic and financial assessment of the project. If the final decision is positive, the agency could proceed with the preparation of the financial agreement (contract). In case of a rejection of a project at this stage (which should be very rare as the agency's staff should have been able to identify major problems at earlier stages), the agency should send an official letter to the applicant informing him of the negative decision.

This letter should clearly state the reasons for rejection. In addition, the agency should give possibility and sufficient time (e.g. 15 days) to the (unsuccessful) applicants to lodge an appeal. The agency staff should respond to the appeal as soon as all evidence – data and information – are collected (but preferably not later than 15 days after an appeal is lodged with the agency). The agency should keep record of all exchanges of correspondence with such applicants.

Box 22. Checklist of potential issues for clarification during negotiations

During the negotiations with an applicant, agency's staff should seek to:

- fully determine the scope of the project – this will include approval of the plan of materials and equipment, environmental results, project's planned costs and financial schedule of the project;
- agree on the exact amount of the financial support provided by the agency and the schedule of payments to be made by the agency;
- if loans are provided, agree on the loan payback period, interest rate, repayment schedule for the principal and interest, grace period;
- verify the completeness, validity and accuracy of formal, legal and financial documents submitted to the agency;
- agree on completion date and deadlines for submission of substantive and financial reports and other documents as well as supervision site-visits to be conducted by the agency;
- specify the requirements for documenting and reporting the achievement of environmental effects and successful project implementation and subsequent approval and acceptance procedures adopted by the agency;
- identify persons authorised to sign the agreement with the agency and any other documents that the beneficiary will be required to submit to the agency during project implementation and upon project completion;
- agree on procurement rules and procedures;
- agree on conflict resolution clauses.

In principle, it can be expected that all applicants are familiar with all terms and conditions of the agency's financial support, as these should be provided freely to all interested parties. Therefore, the actual scope of negotiations should be limited to practical implementation matters and not to fundamental issues, such as the level or duration of the support or the necessary documentation that has to be prepared and submitted by the applicant. The importance of having a very detailed implementation and financial plan with a clear definition of the activities that will be financed by the agency and invoiced separately is all the more important and should constitute the focus of the negotiations.

The agency's decision to provide support to a particular project should come with a specified period of time during which the decision remains in force (this period can range from 4 to 9 months). If after this period no agreement is reached, the project may be abandoned. The negotiating period, however, may be extended upon applicant's request, providing there are objective reasons for this extension. Nevertheless, if the time period during which the decision remains in force is longer (such as 9-12 months), no exceptions should be made. If this period is shorter, exception can be granted only if the tendering process is long (as required by law).

The Krakow Fund, for example, usually requires that the tendering process be completed before signing the contract with the beneficiary. In addition, they also require that to see a contract between the beneficiary and the construction company and a project implementation schedule signed by the construction company, too.

Box 23. Step-by-step preparation process for negotiations

- Set a date for negotiations with the applicant
- Identify agency's staff to participate in the negotiations
- Prepare a negotiation form with all issues for clarification
- Send the negotiation form to the applicant
- Conduct negotiations
- Upon agreement, prepare a memorandum – to be signed by all parties concerned
- Discuss the memorandum at a meeting of the Management Board
- In case of a positive decision by the Board – inform the applicant
- In case of a negative decision - send an official letter to the applicant, clearly stating all reasons for rejection
- Specify the time period over which the agency's offer remains in force

Contracting

The preparation and signing of the financial agreement constitutes the contracting stage. The agency should develop a standard contract and make it available to the beneficiary in advance. The agreement lays down the legal framework, including, among others, detailed descriptions of the type of tasks and costs to be funded by the agency, level and schedule of disbursement of agency's support. The contract will also specify the method of and timing for supervision checks conducted by the agency in the course of the project implementation. For different types of projects and different types of disbursement mechanisms, the agency should develop different model contracts. These standard/model contracts should be made available to all interested parties and potential applicants should get familiar with them before applying for support from the agency.

In addition to bilateral contracts between the agency and the applicant, depending on the type and the complexity of the project and sources of financing involved, the agency may need to develop multi-lateral contracts as well. These may include contracts between the: implementing agency-beneficiary-contractor, or implementing agency-beneficiary-third party, or implementing agency-beneficiary-bank. In any case, before signature, contracts should be prepared and verified by qualified lawyers.

This section looks in more detail at the major elements of the financial agreement, including major contractual annexes as well.

Contract elements

Once an agreement is negotiated, supported by all the documentation, and not merely completed but also checked in detail by financial specialists and lawyers, the coordinator of the project may apply to the Management Board for a decision on the signature of the contract. If the agreement is usually signed by two Board members, it is recommended that the second one be a staff member responsible for the agency's finances.

Box 24 below presents the major elements included in a standard grant/loan agreement, based on the experience of the Polish National Fund.

Box 24. Possible elements of a standard grant/loan agreement

The standard grant agreement should as a minimum specify:

- parties to the agreement;
- subject of the agreement;
- total project cost;
- grant amount and its share in the total project cost;
- project completion date;
- planned construction results and environmental effects of the project;
- deadlines for submission of documents confirming completion of different project phases and full completion of the project,
- procedures for acceptance of achieved environmental effects;
- method and schedule of the payments made by the agency to the beneficiary;
- bank account numbers of the beneficiary;
- agency's rights to control and check the use of the grant resources provided to the beneficiary;
- sanctions imposed in case of inadequate fulfillment of the agreement.

In addition, the loan agreement should also contain:

- loan amount and its share in the total project cost;
- interest rate and grace period;
- maturity date (the date on which the principal balance of a loan is due and payable to the agency);
- payback period;
- deadlines and schedule for paying loan interest rates and principal;
- form of collateral.

In addition to the above elements, a typical standard contract should also include a contract **termination** clause and a conflict **resolution** clause. These clauses are of particular importance as they ensure the protection of public funds against misuse and corruption.

Contract termination clause

If a beneficiary is found to breach the grant/loan obligations established in the financial agreement, the agreement should envisage specific sanctions for such cases. Box 25 below provides information on possible reasons for termination of a contract with a beneficiary (specifically when loans are provided) and subsequent sanctions. This information is based on the experience of the Polish National Fund.

Box 25. Reasons for termination of a contract

The Polish Nation Fund can terminate a grant/loan agreement with a beneficiary (and, in case of a loan, declare the amount not yet paid back immediately due and payable) in case of:

1. using a loan/grant or parts of these for purposes other than those set forth in the contract;
2. deviations from the implementation plan and/or financial schedule;
3. a delay of more than 30 days with regard to the agreed repayment dates for both principal and interest;
4. a non-completion of the project within the deadline set in the agreement or a non-achievement of the environmental or physical objectives set forth in the contract;
5. a failure by the beneficiary to submit the information on his financial status, as required by the agreement and, in particular, when he does not:
 - a. inform the Fund of having exceeded the percentage share of the actual project costs;
 - b. provide additional guarantees for the loan repayment within the deadline agreed with the Fund and the Fund has found out that the repayment is at risk;
6. renegotiations of the loan conditions lasting for more than 30 days for reasons caused by the beneficiary;
7. a refusal by the beneficiary to provide explanations on irregularities identified by the Fund or submit required documents or create difficulties to Fund's staff to conduct on-site inspections;
8. a refusal by the beneficiary to return the amount specified in a request by the Fund for repayment of the amount in excess of ...% of the Fund's share in the actual costs of the project.

If an agreement is terminated for any of the above reasons, the beneficiary is obliged, within 14 days of the delivery of the termination notice, to return to the Fund the loan amount not yet paid back plus other amounts due.

If there is a delay in the repayment of the principal and/or interest of more than 30 days with regard to the agreed repayment dates, the Fund may demand immediate repayment of the unpaid loan amount and interest plus penalty interest in the amount set out in the agreement.

In the cases referred to in points 2, 3, 4, 5 and 7 above, the Polish National Fund requires immediate repayment of the unpaid loan principal and interest. The calculation is based on the bill of exchange rediscount rate set by the National Bank of Poland, on the repaid loan amount for the period during which the money has been available to the beneficiary. In addition, a contractual penalty in the amount of 25 % of the loan amount may also be imposed.

In the cases referred to in points 6 and 8 above, the Fund demands immediate return of the loan amount set out in the agreement and not yet paid back together with the interest on it.

Conflict resolution clause

A clause on conflict resolution should clearly indicate what will be the procedure for settling any disputes arising from the implementation of the contract. Usually, if disputes cannot be settled by mutual agreement, an arbitrator and a place where the arbitration will take place should be clearly specified.

Major contract annexes

In addition to the main text of the agreement, the contract may contain a number of substantive annexes. Experience shows that as a minimum there should be at least three such annexes attached to the agreement, namely:

- a/ substantive technical implementation plan and financial schedule of the project;
- b/ procurement plan for tasks to be financed by the agency;
- c/ specification of the invoicing and reporting requirements.

These are integral components of the contract with the beneficiary and their aim is to protect the public money from misuse.

Substantive technical implementation plan and financial schedule of the project

The substantive technical implementation plan and financial schedule should contain as detailed information and data on the entire project as possible. They should specify all the equipment and materials that will be financed by the agency and invoiced separately. In addition, all expected environmental outcomes should be clearly described, and the project implementation plan for their achievement attached. The implementation plan should take account of all intermediate tasks as distinguished from functional, technological or temporal points of view. The costs of each of these tasks should be clearly indicated. The project implementation plan and financial schedule should be prepared in compliance with formal and legal requirements set out in the agency's legal and operational documents.

Components of the technical implementation plan

In the case of water investment projects, the technical implementation plan should as a minimum specify:

- works related to construction (buildings, engineering installations, pipe networks, equipment purchase and assembly). These should be specified in terms of main technical parameters, such as cubic capacity, throughput, power required, length of linear materials, surface area of roads and squares that will need to be reinstated once underground are placed under them or any other components that will be covered by the agency (for example central heating boilers, transformer stations, etc.). The number of items should also be specified (e.g. secondary settlement tanks – 2 items; etc.);
- type and purpose of the investment project (e.g. construction, modernisation, extension, remedial, preventive);
- type of work - ground works, construction and assembly works, installation works (if the project consists of the construction of one single large piece of equipment);
- start-up date and dates of testing the equipment, duration of the test period;
- date of acceptance of the equipment by an environmental inspector and date on which the equipment is expected to start operation.

In addition, the implementation plan should be supported by a number of permits and statements by different authorities that confirm the applicant's rights and preparedness to implement the project. These may include: construction permits, sectoral (environmental) permits e.g. water supply and sewage permit, emission permit setting permissible emission levels, integrated permit (as appropriate), statement by a relevant environmental/health inspector, statements by other financiers who have made commitments to support the project (e.g. municipal authorities supporting the project using budgetary resources).

Components of the financial schedule

The costs in the financial schedule should be based on the information and prices quoted in the technical implementation plan. Each time the financial schedule is updated (e.g. after selecting a contractor in a tender), the applicant should quote the most recent and relevant costs available. Depending on the preparation stage of the investment project, the implementation plan and financial schedule should be prepared on the basis of the following documents:

- engineering or detailed design (the latest (the most detailed) stage of design), beneficiary's cost calculations;
- cost calculation by the contractor selected in the tender;
- implementation plan;
- schedule for the delivery of supplies.

The final version of the financial schedule attached to the agreement should include all changes made as a result of the tender. If the tender is not conducted by the time of signature of the financial agreement, the contract should include explicit provisions to allow for adjustment of the level of financial support provided by the agency. The financial schedule should be updated after the conclusion of the financial agreement but before the start of works (supplies).

The agency's resources should be used primarily to cover investment costs. These can include: purchase and assembling of technical equipment and assembly works directly related to the construction activities on the site. As a matter of principle, the agency should not provide support for maintenance and operating costs. Financial costs incurred by the beneficiary as a result of project implementation should not be covered by the agency, either.

Providing clear and explicit information on the type of works, items and costs that will not be covered by the agency early in the application process is crucial as it helps avoid wasting time and money of both the applicant and the agency's staff in preparing and evaluating the application. The Polish National Fund has developed a list of items which it does not finance. This information is provided to all applicants from the outset of the application process. The detailed list of such items is provided in Box 26 below.

Upon agreement between the applicant and the agency, the implementation plan and the financial schedule should be signed by all parties to the contract. In the case of big investment projects, a duly authorised representative of the beneficiary's construction inspector should sign the plan/schedule as well.

Box 26. List of items and costs not covered by the Polish National Fund

- preparation of project documentation
- preparation of pre-feasibility/feasibility studies
- fees for obtaining permits/licences
- fees for consultancy work related to project implementation
- geodesy works
- greenery, landscape decoration (small architecture) and fencing
- preparation (assembly and dismantling) of support facilities on the construction site
- costs related to land on which the project will be implemented (purchase, lease, land tax, etc.)
- construction of roads, pavements, etc. (except for access routes technologically required and related to the project)
- installation of telephone lines and power and water supply at the construction site
- fees for investment services (investor's supervision, designer's supervision, etc., staff training)
- costs related to building administrative offices and other social facilities at the construction site (or administrative and social facilities in other buildings)
- equipment for laboratories (e.g. reagents, laboratory glass, low-value equipment not part of the fixed assets created by the project)
- storm water drainage, side drains, water and gas pipeline connections to households
- gasification of towns and villages (except for networks and pipes transmitting gas to modernised gas-fuelled stations and facilities (e.g. boiler houses and generators)
- dismantling and demolition works at the end of the project
- Value Added Tax (unless it is a cost for the beneficiary)
- thermal modernisation (with the exception of state-owned entities managed by the National Parks)
- central heating and hot water installations
- interest and commission fees on credits and loans taken by the beneficiary from banks or other public financial institutions (including IFIs)
- costs incurred as a result of differences in exchange rates
- commission fees on guarantees extended to the beneficiary for the project implementation period
- costs related to the organisation of the investment process (legal service costs, notary's fees, etc.)
- indirect costs (except for equipment purchase and start-up costs and customs duty)

Procurement plan for tasks financed by the agency

The role of the implementing agency in the public procurement process is to ensure that beneficiaries select contractors and suppliers of equipment and works in compliance with the requirements of national legislation on public procurement (or international as appropriate). Hence, the procedures and rules of the national public procurement laws should be strictly enforced by the agency and complied with.

While the agency should not be directly involved in the selection of contractors, agency's staff may find it useful to participate in some of the tenders (particularly for large and complex projects). As a minimum, however, the agency should require the beneficiary to provide proofs that the procurement process has been conducted in line with the law. Depending on the size of the project, the agency may require to see quotes from different suppliers or the results from the tender (be it open or restricted). It is also advisable that the beneficiary consult with the agency when preparing the tender announcement and the Order Specification.

Invoicing and reporting requirements

Invoicing and reporting requirements should be clearly specified in the financial agreement.

Invoicing requirements

The agreement should state when invoices and other financial documents have to be submitted, by whom, in how many copies and who should sign them. The timing should be linked to the technical implementation plan and financial schedule. The agency may require photocopies of all documents as well as a list of all submitted documents to be presented at the end of each completed stage. According to the “four-eyes” principle, all relevant decisions and documents should be signed by at least two people.

Reporting requirements

Reporting can be linked to the type of database for tracking progress in project implementation used by the agency. The reporting standards are a broader notion than just financial reporting. It should be noted that the reports should allow for an easy and quick verification and comparison of results. The agency should document the completion of each stage of project implementation through a written approval. The beneficiary should be required to submit interim and final reports on the substantive technical implementation of the project. In order to simplify the process, a standardised reporting format should be developed by the agency.

Financial transfers

In order to safeguard public resources when making financial transfers, there are a number of precautionary measures that the agency can take. Some of these major measures include:

- avoid making total financial transfers before the work is actually completed;
- avoid making advance transfers;
- make transfers in tranches;
- make transfers only after all invoices and reporting documents, as required in the contract, are submitted by the beneficiary and carefully checked and verified by agency’s staff;
- transfer money to the beneficiary only against invoices which have been issued by the contractor and approved by the beneficiary;
- require the beneficiary to open a special sub-account when payments are made to the beneficiary and not the contractor;
- suspend transfers if the beneficiary is found to be in breach of the contract but inform the beneficiary of the decision and provide written explanations.

Advance disbursements or total financial transfers disbursed upfront, before actual costs are incurred, should be strongly discouraged. Experience shows that when such a practice is used, the risk of misuse of public resources is very high. Once the beneficiary gets hold of all money, it will be difficult for the agency to control the implementation of the project. If the beneficiary does not have enough resources to launch the project, it is expected that the contractor (bound by a legal agreement

with the beneficiary) would have sufficient cash-flow to take the financial burden of start-up operations. Only in exceptional cases, such as support provided to NGOs for nature conservation projects, schools, kindergartens, churches, can the agency decide to provide upfront payments.

With infrastructure investment projects, in particular, advance payments should be avoided as they represent a major risk for the agency. If, however, for some reason, upfront payments are necessary, the agency should assess the need for such payments on a case-by-case basis. The contract should contain a clause to this effect. Reasons for such exceptions could be the business culture in the country where contractual relations are such that the beneficiary is required to provide advance payment to the contractor (the so-called supplier's credit) or if the record of the agency's credibility with payments is poor and the advance payment is seen by the contractor as a commitment by the agency to make payments.

Experience also shows that the best way to make financial transfers is in tranches. More importantly, the agency should disburse resources to the beneficiary only upon completion of a certain stage of the project, against invoices issued by the contractor, approved by the beneficiary and submitted by the beneficiary to the agency for payment. The actual transfer should be made only after all financial and reporting documents have been checked by agency's staff for accuracy and compliance with the contract. The agency then transfers the money to the beneficiary who, in turn, pays the contractor.

If payments are made directly to a beneficiary against invoices issued by the contractor, the beneficiary should be required to open a special sub-account for the grant/loan. The account will be controlled by the agency, and the beneficiary will be allowed to withdraw money only after the agency gives permission. This also ensures that the transactions related to the project are not mixed up with other transactions.

In case of a failure of the beneficiary to meet a deadline set out in the financial agreement, the agency may suspend the payment of invoices. The agency should duly inform the beneficiary of such an action and explain the reasons for the decision. All consequences of a payment suspension should be borne by the beneficiary.

Summary and guidance for the implementing agency

The after-project selection stage includes commitments, negotiations, contracting and financial transfers made by the agency. Commitment is not a legally-binding process for the agency, it only shows agency's interest to support a project. It is only during negotiations and with signing a financial agreement with an applicant that commitment is converted into a financial obligation for the agency.

Contractual clauses in the agreement should ensure the protection of public funds from misuse and mismanagement. The financial agreement should contain a number of essential annexes, such as a detailed technical implementation plan and financial schedule. In addition, it should specify the invoicing and reporting requirements to the beneficiary as well as the rules for financial transfers to be executed by the agency.

Most often, the financial agreement is based on prices provided by the project engineering design and suppliers' offers. As a result of actual tendering of the project, original costs may change. The agency should make sure that there is a clause in the financial agreement which stipulates how the agency will deal with changes in costs and/or expected environmental effects. However, differences in costs before and after tendering should not be significant, as experienced agency's staff should have

been able to detect unrealistically low or high prices early in the evaluation process and such projects rejected at earlier stages of the project cycle.

Project implementation monitoring and post-implementation evaluation

Monitoring of project implementation and subsequent evaluation are the last stages of the project cycle. The supervision and monitoring of project implementation begins with signature of the financial agreement and continues until all tasks are implemented, completed and financially settled. This is true for the implementation of both substantive (technical) and financial tasks.

This chapter looks at the first (project implementation monitoring) and the second (post-implementation monitoring) level of control and discusses a menu of possible checks and balances that need to be put in place in order to ensure smooth project implementation as a prerequisite for achieving the stated project environmental objectives attained with public support provided by the agency.

Definitions of key terms

Monitoring and evaluation are two distinct but closely related management tools that allow implementing agencies to measure the performance and assess the impact of the individual projects they support as well as the entire programmes these projects are part of. These management tools provide a basis for the agency to learn from its own experience and use this knowledge in improving future project and programme implementation.

- **Monitoring** is a continuous process of collecting and analysing information to measure the progress of a project or programme towards expected results. Monitoring provides managers with regular feedback that can help determine if a project progresses as planned. Effective monitoring requires a clear statement of environmental objectives and related indicators, identification of the sources of information on measures undertaken as part of the project (including baseline data), regular reporting and a feedback mechanism for using monitoring information for decision-making by the agency. Monitoring should continue beyond project completion, in the project post-implementation phase as well.
- **Evaluations** are periodic assessments that answer questions about why results are or are not achieved, what unintended consequences of a project there may be, and what lessons are learnt from the experience with the implementation of projects. The evaluation should also look at the internal operations of the agency during the entire project cycle.

It is important that the agency allocate sufficient staff time and financial resources and conduct proper monitoring and evaluation at both project and programme level. This can ensure avoiding future costly mistakes.

Monitoring project implementation progress could be greatly improved if the agency develops and puts in place a relational database which could generate quick management and progress reports on different queries related to different projects. Using a central system of data storage and uniform procedures governing data production and flows can strengthen the quality and accessibility of data. Records on monitoring are indispensable for the agency's memory and should not be "stored" in the brains of staff only. In the absence of a proper data recording system, with a change of staff for instance, these data will be lost. Obviously, this can have negative consequences for both the efficiency of the work process and the safety of the public resources managed by the agency.

Project implementation monitoring (first level control)

Project implementation monitoring requires that a number of checks be introduced which could ensure good supervision by the agency's staff and avoidance of costly failures at this stage. To ensure smooth monitoring, the agency needs to develop:

- (i) Rules for project owners to report on project progress – the progress reports should contain information on both financial settlements as well as the implementation of technical tasks. Ideally, these rules should be agreed upon as part of the contract with the beneficiary;
- (ii) Rules for agency's staff on conducting monitoring of project implementation – these rules should be included in the Staff Manual or Staff Regulations of the agency.

Box 27 below presents the list of the minimum measures needed to ensure good supervision and control by the agency during project implementation.

Box 27. Minimum prerequisites for ensuring good project supervision and monitoring

- √ each project should be assigned a dedicated agency's project coordinator who will have a responsibility for a close and regular monitoring of the progress of a given project;
- √ each beneficiary should be required to prepare detailed substantive interim and final reports;
- √ all technical reports and documents should be carefully verified by the agency's coordinator responsible for project monitoring for compliance with the requirements set out in the contract;
- √ all financial reports and invoices should be checked and verified by a financial manager at the agency;
- √ detailed instructions for conducting on-site visits should be included in the Staff Manual;
- √ for more complex projects, and on an as-needed basis, external experts should be involved;
- √ a policy to deal with changes in project costs during implementation both in terms of savings and cost over-runs should be developed by the agency;
- √ to ensure the protection of public money, beneficiary should be required to open special accounts to which agency's resources will be transferred;
- √ continuous monitoring of the project beyond implementation and in its operational phase should be ensured by the agency;

Clear rules for reporting on project progress

Project implementation monitoring starts with the signature of the financial agreement with the beneficiary. Practically however, the process starts even earlier – with the negotiations and clarifications of the reporting requirements imposed by the agency. In this context, the agency should develop clear rules of reporting on project progress. The agency should also prepare a standard reporting form for each type of projects that it supports. Progress reports should be required both during the time of the implementation of the project (interim report) and upon completion of the report (final report). The frequency of the reports should reflect the conditions agreed upon in the contract and more specifically in its major annexes, the technical implementation plan with respective deadlines and the financial schedule. If a project consists of 5 phases, there should be 5 reports. Each report should be accompanied by all invoices paid. If these invoices are not attached, the agency should not make any disbursements.

Rules for conducting proper project implementation monitoring

Each project should be checked substantively as a minimum once during the implementation phase and if problems occur, additional checks may be necessary. There are two major approaches to conduct technical and financial supervision, including:

- substantive verification of documents submitted by the beneficiary; and
- on-site visits.

Monitoring and supervisions during implementation are a responsibility of the agency's coordinators who will follow the project from the start till completion and will be responsible for conducting **technical supervision**. The purpose of such supervision is to ensure compliance and timely completion of the substantive part of the project in accordance with the schedule and conditions detailed in the agreement. If the information submitted by the beneficiary is unclear or does not correspond to the technical implementation plan, the agency's coordinator will require additional clarifications. To approve a given stage of the project as completed, the Polish EcoFund, for example, requires the beneficiary to submit the following documents:

- a summary report showing completion of all tasks planned for the specific project stage;
- a copy of the act of technical acceptance of the project stage, approved by the beneficiary and the project supervisor. In case certain tasks require separate acceptance procedures, a complete set of the technical acceptance acts should be submitted by the beneficiary;
- a complete set of invoices (with copies) as specified in the Table 16 below, confirmed by the beneficiary.
- a list of project implementation costs covered by the Fund's resources, prepared in a table format (see Table 16 below) and confirmed by the beneficiary.

Table 16. Standard form for reporting costs incurred during a given project stage

(to be filled in by beneficiary, in use at the Polish EcoFund)

Item	Item in the Procurement Plan	Contractor / Supplier	Invoice	Material scope of the tasks	Invoice amount (PLN)	
					Total	Net (excl. VAT)
	<i>(Appendix No 2 to the agreement)</i>		<i>(Number and date)</i>	<i>(Completed)</i>		
1	2	3	4	5	6	7

For large or complicated projects, it may be useful to use external experts to assess the accuracy of the implementation of individual tasks. External experts cost money. They should be used exceptionally when, for example, the agency has decided to stop the subsidy to a beneficiary and to avoid problems and accusations, the agency needs additional external opinions.

Financial supervision should be exercised by a financial expert at the agency in order to ensure that the agency's resources are spent appropriately. Financial supervision requires the verification of financial documentation (invoices) submitted as the project implementation progresses but it also

necessitates checks conducted at the beneficiary's offices. At this stage, it is **important to also check the disbursement of the beneficiary's own resources and other funding sources** as stated in the financial plan to the agreement. This financial control can be carried out during the site visit conducted by the coordinator as well as separately by the financial manager alone.

The project coordinator should not approve an interim progress report before all pending issues are clarified. If the progress report raises doubts or explanations are unclear, the coordinator may need to visit the site and check the status of implementation on the spot.

The major purpose of an **on-site visit** is to assess the compliance of the beneficiary with his contractual arrangements. During the field visit, the agency's coordinator goes to the site with the interim report in hand and verifies the consistency of information and data provided by the beneficiary in the report with the actual state of affairs on the site. On-site visits require the examination of the project assets built with agency's support (including buildings, engineering installations, networks, equipment purchase). The right of agency's staff to access the site should be included in the contract with the beneficiary.

Each site visit should be conducted with a prior notice to the beneficiary and agreement on the time and issues to be discussed. The agency's coordinator should have a list of issues that he needs to check. If there are discrepancies or delays in the project implementation, additional explanations should be required from the beneficiary. Final decisions by the agency should be made on the basis of these additional explanations.

The Polish EcoFund, for example, holds management meetings every week where they discuss problems with individual projects, look carefully at the additional information provided and final decisions are recorded in management protocols. If necessary, the agency's coordinator will follow-up on violations of the contract and specific measures can be taken to rectify the situation. Serious departures from the technical implementation schedule and financial plan, as stipulated in the agreement, may result in disconnecting payments or terminating the agreement with the beneficiary.

How to deal with financial irregularities during project implementation?

There are several major cases where such irregularities can be observed. These include:

- (i) the beneficiary reduces his costs by implementing certain tasks at a cost lower than indicated in the financial plan;
- (ii) total project costs change as a result of objective reasons, such as a sharp increase of certain prices; which leads to cost over-runs;
- (iii) the beneficiary has used agency's resources to cover costs not agreed upon with the agency.

The beneficiary may seek to get benefits by implementing certain project tasks at a cost lower than the cost stated in the financial plan to the contract. In such a case, the agency should operate on the principle of the **equal share in cost savings**, by retaining an equivalent percentage share of its committed support. Thus, in case of savings, both the beneficiary and the agency have savings. Field checks to the investment site should aim to verify congruence between declared and implemented technologies. Any deviations from the substantive technical and financial plan need to be justified by the beneficiary. Therefore, in order to make sure that the agency gets its fair share of the benefits arising from cost-savings, reporting of costs should be carefully monitored.

If, on the other hand, there are cost over-runs during project implementation, the agency should not agree to increase its support for such projects. In principle, the agency should not accept such situations unless the beneficiary has informed the agency of his intentions and the agency has agreed to such changes. To mitigate such situations, **agency's support should also be fixed in terms of absolute amounts**. In this way, when project costs increase, the aid rate decreases and the beneficiary effectively obtains less resources. It is important that the agency should be in contact with the beneficiary on a permanent basis which will allow its staff to better understand any changes in the project implementation. However, no disbursements to the beneficiary should be made until the situation is clarified. For example, in the case of Austria, if cost overruns are more than 15% compared to the initial agreement, the whole application procedure has to start again and the subsidy element is lowered.

Monitoring is necessary in order to ensure that there are no discrepancies between what is included in the contract and the actual state of implementation as described in reports submitted by the beneficiary. Under-estimation or failure to pay attention to discrepancies between the agreement and the actual implementation of a project may create many legal and financial difficulties for the agency. For example, if the beneficiary has used agency's resources to pay for tasks not agreed with the agency but most or, even worse, all of the support has already been transferred to him, there is little the agency can do to recuperate its money. Litigation maybe an option but it is very costly and will be a waste of resources. In addition, such cases create an environment of suspicion and mistrust around the agency. Therefore, in order to avoid such costly failures the agency needs to put in place as many preventive measures as possible.

In order to ensure effective implementation of the project and the attainment of environmental benefits, the agency may choose to ask the beneficiary to open an escrow account which can be serviced only with the consent of the agency. For example, the Polish EcoFund and the Austrian Kommunalkredit keep 5% of each grant at such an account and allow disbursement only after all final reports are submitted by the beneficiary and approved by the agency. Such a guarantee serves to discipline the beneficiary and compels him to inform the agency of achieved environmental effects. This shows the need to continue monitoring of the project in its operational phase as certain environmental benefits can be achieved only after the equipment has reached its full operational capacity.

As a principle, if a given project stage is completed later than agreed, the agency can reduce the level of funding for the beneficiary by the amount of the interest accrued due to beneficiary's delay. The length of the delay is determined by the difference between the date of settlement of a certain stage and the date on which documents arrive at the agency and are registered.

A project phase is considered completed only after the agency has accepted the implemented technical work and related costs and approved the interim reports for the respective stage. Only when these conditions are met, can the agency proceed with subsequent disbursements. On the other hand, the agreement is considered completed only after the beneficiary has submitted his final technical and financial report and the agency has approved all implemented tasks. The final report should show that the equipment/installation has been properly tested and is ready to enter its normal operation phase. It should also confirm the actual achievement of environmental benefits. This confirmation should be given by an authorised environmental inspector based on actual measurements of the environmental improvements. A positive assessment of the report constitutes the basis for the formal closure of the project.

Box 28. Risk mitigation measures during implementation

In order to protect the public resources from misuse, the agency should have in place a number of preventive measures. These may include among others:

- uphold (part of) the final payment until all technical and financial reports are cleared and approved;
- ask the beneficiary to open an escrow account from which he can withdraw money only with agency's permission;
- introduce the principle of equal share in cost savings;
- impose a penalty for the delay in the delivery of the project;
- reduce the level of funding by the amount of the interest accrued due to beneficiary's delay;
- in case of serious discrepancies, cease payment and unilaterally terminate the contract with the beneficiary;
- obligate the beneficiary to return the amount calculated to be spent to cover costs not agreed with the agency.

Post-implementation monitoring and evaluation (second level control)

Evaluation of project results closes the project cycle. Evaluation is largely based on the final report of the beneficiary. There are three elements that should be carefully considered during evaluation, namely:

- inputs – these are the resources provided by the agency to cover agreed project costs;
- outputs – these are the physical assets produced, for example, a WWTP built;
- impact – is the environmental effect obtained or pollution reduction achieved. The output and the impact are different notions. There may well be a WWTP built but if there is not enough wastewater to be treated because the sewage system is not completed as agreed, or, even if the necessary amount of wastewater is there but the technology does not meet the required standards, the result is not equal to the expected impact.

If the impact (environmental effects) is not achieved upon project completion, the agency should require its money back or should start negotiations providing there are objective reasons for such discrepancies. Such reasons may include, the lack of resources (the beneficiary thought he would receive money from other sources to complete the sewage system, but the transfer was delayed) or lack of skills, for example, workers at the WWTP do not know how to use biological treatment equipment and they need 2-3 more months to learn. In these cases, the agency may agree to allow additional reasonable sufficient time for the beneficiary to obtain the expected effects.

Thus, the main purpose of the evaluation is to assess the environmental effectiveness of the project. In addition, evaluation should also look at the agency's internal operations during the project cycle. Systematic evaluation is a critical learning device and a prerequisite for building capacity and skills to improve the management of future project cycles. Evaluation reports should be prepared indicating all mistakes that have been made, analysing the causes of success or failure of the projects supported and assessing the agency's ability to detect and prevent major breakdowns. The reports should also contain recommendations for improving the management of the project cycle, including the process of project identification. The evaluation of individual projects also provides a broader

basis to assess the effectiveness of the entire programme and the impact agency's resources have on actual environmental improvements in the country.

Such on-going evaluation is also important with regard to changing economic conditions and market trends and the need for the agency to adjust the terms and conditions of its financial offers. In addition, evaluation reports should also be kept for further reference and auditing purposes both by the national auditing authorities as well as international auditing companies. In the case of Austria, apart from the first level control by Kommunalkredit, a random sample of investment projects (5 – 10 % of projects) and small grants are subjected to an in-depth evaluation on an annual basis by external auditors. Both the accuracy of the application procedures and actual environmental benefits achieved as a result of the subsidy are evaluated.

Evaluation results should be made available to interested parties and the public at large in order to allow broad supervision of the agency's operations. To successfully communicate with these stakeholders, the agency needs to have a clear policy how to best do this. A good communication strategy is essential to help make the agency better understood and appreciated both at home and by the international community. The experience of the Polish EcoFund shows the importance and value of spending time on communicating with the media. Some suggestions for effective communication, coming from the EcoFund, include:

- opening ceremony of a completed investment in the presence of the Fund's managers;
- press conferences focused at progress and problems in the implementation of expenditure programmes as well as future plans;
- tours for journalists to visit sites and talk to beneficiaries and collect information on selected expenditure programmes;
- press releases on achieved environmental benefits;
- participation in conferences to present the Fund's priorities, portfolio and experiences;
- preparing and distributing annual reports offering information on the Fund's achievement and plans;
- requesting beneficiaries to place the Fund's logo on reports and equipment (using stickers).

The agency should capitalise on each project monitoring and assessment, to improve and to refine its selection process, contractual arrangements, and monitoring mechanisms. Lessons learnt should be incorporated in the report on programme implementation which the agency should send to the ministry in charge and the parliament.

Summary and guidance for the implementing agency

Project implementation and post-implementation monitoring are the final stage of the project cycle. Project implementation monitoring implies an effective set of checks and balances for both technical and financial control from start to completion of the project.

Project implementation monitoring requires clear rules and standards for technical and financial reporting by the beneficiary and for conducting supervision by agency's staff. The beneficiary should be required to submit progress reports at every stage of the project implementation. A project stage can

be approved only after the agency's staff have carefully verified all information and data contained in the beneficiary's report. Only then, can the agency proceed with the actual disbursement of resources. Monitoring of project implementation should continue in the operational phase of the project, as often the full extent of the environmental benefits is achieved when the whole project is completed and the installed equipment has reached its full operational capacity.

If during this stage, deviations from the contract are detected, the agency should have at its disposal appropriate mechanisms to protect the public resources against misuse and corruption.

Evaluation of the entire programme and not only of individual projects, as well as the whole project cycle is equally important. Systematic evaluation is a critical learning device and a prerequisite for building capacity and skills to improve the management of future project cycles.

Cash-flow and loan portfolio management

Cash-flow and loan portfolio management are essential for the good financial state of implementing agency. This chapter will briefly look into these two issues and aim to suggest different tools and approaches with their advantages and disadvantages in order to help improve the agency's cash-flow management position and loan portfolio management practices.

Cash-flow management

Effective cash-flow management implies skills to manage financial resources in a sound and prudent way in order to ensure that "free" resources are safely invested in different financial instruments and bring in additional revenue to the agency, or in case of cash shortages, the agency manages to raise enough debt to cover its liquidity problems. In either case, properly assessing the risk is key to the success of these operations. Any of the options that exist has its advantages and disadvantages and these should be carefully weighed by the agency before taking a final decision where to invest and on what conditions or what debt instruments to employ to cover shortages.

The types of income and expenditure and disbursement methods used by the agency will determine its cash-flow management practices. The most common tools used by implementing agencies in managing their cash-flow are: budgeting and cash-flow planning/forecasts (see chapter 1 for more detailed discussion on this issue). The agency should aim to manage its cash-flow in a way which ensures smooth budget execution and liquidity of its operations. However, even if the budget is well prepared and based on realistic and objective aggregate revenue and expenditure estimates, there could be times when the agency could experience cash-flow shortages, or alternatively, has some temporarily "free" resources.

The agency should have a policy on how to deal with such cases. The final choice will largely depend on the legal and management framework within which the agency operates. Whatever the choice, the financial management of the agency should be strictly based on the country's public finance laws.

Managing temporarily "free" resources

The best option to deal with "free resources" is to invest in financial instruments that can bring additional revenue that can then be used to support more projects. The agency should invest in secure instruments only, such as time deposits at selected commercial banks or state bonds. Risky instruments that can jeopardise the public resources managed by the agency should be avoided. For example, the Slovenian Fund invests in treasury bonds, treasury bills of the Bank of Slovenia, and other stable

foreign currency. It is important that the agency's legislation should explicitly prohibit risky financial investments and should prescribe exactly where public money can be deposited.

- **State bonds**, such as treasury bonds and treasury bills, are widely recognised as safe financial instruments. Treasury bonds are long-term securities that could have initial maturities of 10 years. Treasury bills, on the other hand, are short-term securities whose most common maturity is 52 weeks. For obvious reasons, treasury bills could be more appropriate to invest in.
- **Time deposits** are also a safe financial instrument. Having time deposits at a commercial bank which also manages the accounts of the agency could be a very good option to invest the free money, as such a bank would often offer very good deposit rates (this is the practice employed by the Slovenian Fund, for example).

Risk mitigation measures

Making financial investments always carries some risk. In order to diversify the risk, the agency should seek to invest in different instruments. One way to reduce this risk is to hire external brokers or internal investment bankers who could provide the agency with competent advice on such operations. Obviously, using bankers in such a capacity costs money. These additional costs could be outweighed by the additional revenue that investments in financial instruments can bring to the agency. The agency should take all precautionary measures and conduct proper analysis of all risks, advantages and disadvantages of the financial instruments it considers to invest in. In addition and in order to lower the risk on financial instruments, the agency should seek to work with different banks.

On the other hand, investing in commercial bonds purchased at the stock exchange or through investment funds is often regarded as bearing a very high risk and should be avoided by the agency.

Box 29. Minimum risk mitigation measures in cash-flow management

In order to reduce risks of making investments in financial instruments, the agency should, as a minimum:

- √ Invest in safe instruments only – such as time deposits and state bonds;
- √ Conduct a proper analysis of the instruments, including costs, risks and advantages;
- √ Use professional advice, as appropriate;
- √ Use different banks.

Managing cash-flow gaps

When the agency faces temporary liquidity problems, it can take different approaches to improve its cash-flow position. However, most of the approaches proposed below are typically available to agencies which disburse part of their resources in the form of loans. These options include:

- collecting outstanding receivables on loans;
- borrowing on the financial market;

- contracting loans from international financial institutions;
- selling loans;
- issuing bonds.

At times of cash-flow shortage, the first step to take is to make an effort to collect all outstanding receivables on loans. The agency should develop clear procedures for dealing with delinquent borrowers. All staff should be well familiar with these instructions and be required to comply with them (for more information, see section 5.2 below on Loan-Portfolio Management).

Another option to cover shortages is to **borrow on the financial market**. In most countries, agencies that manage public environmental expenditure are not allowed to borrow directly on the market (particularly in the case of long-term borrowing). It is only the Ministry of Finance, on behalf of the agency, that can do so. If, however, the legislation allows direct borrowing, the agency can borrow from commercial banks, or a consortium of banks, from targeted investors groups, such as pension funds or insurance companies, from specific enterprises, from other similar agencies and funds, or from the general public through issuing bonds. Actually, this list could include any economic agent that is willing to invest at a low risk.

By borrowing on the market, the principal security that the agency can offer is a stable and predictable revenue flow and the future repayments on its well-performing loans. The better the quality of the agency's loan portfolio, the higher its chances to obtain the needed cash at better and cheaper terms. What really matters is that the agency borrows safely and in a responsible manner. This implies a careful study of all market opportunities and selecting lenders that could offer the most favourable conditions. The costs of the banks will differ depending on the level of the competition in the banking sector in the respective country. With long-term borrowing, banks and investors willing to lend to the agency usually require that the agency should have a credit rating which informs them of the agency's capacity to repay its financial obligations in a timely manner.

In addition, the agency could take **loans from international financing institutions**, such as the World Bank, EBRD, the European Investment Bank. These institutions often offer attractive terms on their loans as they prefer disbursements of big tranches while charging implementing agencies with on-lending their resources to final clients and with managing individual small projects and investors. However, these institutions would always want to know what portfolio of investments will be financed out of their resources, therefore, project appraisal should often be conducted before taking such a loan. Such loans should always be well justified and the environmental effects of the investment portfolio clearly analysed.

Another option for the agency to improve its cash-flow position is the sale of (a portion of) its loans to a bank at a discount rate which will reflect the risk perception of the bank on these loans, based on the quality of the loans in the portfolio. Thus, the agency could get cash immediately. If cash is urgently needed, the agency could also raise debt from the general public through issuing bonds. These bonds will be secured against the receivables on the agency's well-performing loans. The agency may choose to give preferential (but equal) treatment to purchasers of such bonds, should they apply for support from the agency.

Loan Portfolio Management

Loan portfolio management is the process by which risks that are inherent in the lending process are managed and controlled. Effective loan portfolio management begins with the oversight of the risk in individual loans. To manage their portfolios, agency's staff must understand not only the risk posed by each individual loan but also how the risks of individual loans and portfolios are interrelated. These interrelations can multiply risk many times beyond what it would be if the risks were not related. This is why, it is important to view risk management in terms of the entire loan portfolio. Effective risk identification and risk rating of loans is fundamental to loan portfolio management.

Sound portfolio management requires highly skilled staff capable to properly identify risks in projects and borrowers. Most commercial banks have staff exclusively specialising in risk management. Most public implementing agencies do not have such capacities (as well as smaller banks for that matter). This is the reason why if such skills and expertise are not readily available at the agency, the agency might consider outsourcing the loan portfolio management to a reputable commercial bank.

(i) In-house loan portfolio management

Ensuring the high quality of a loan portfolio (which implies no bad loans or at least a low rate of defaults on the loans extended by the agency) requires highly-qualified and experienced staff with sufficient knowledge in conducting proper due diligence, including risk and collateral assessment. Hiring such experts is usually expensive and often unaffordable for agencies in EECCA. In addition, the agency will need to develop precise guidelines for its staff on how to conduct risk assessment and implement a collateral policy. These rules should be close to those used by commercial banks.

Credit risk management and collateral policy

Effective risk management is essentially related to the sound and timely valuation of loans. To be able to prudently value loans, the agency should have a **system to reliably classify all loans on the basis of risk**. A risk classification system may include categories or designations that refer to varying degrees of loan deterioration, such as doubtful loans and irrecoverable loans. A classification system typically takes into account the borrower's current financial condition and paying capacity, the current value and realisability of collateral, and other factors that affect the prospects for collection of principal and interest. The agency's management board should establish a programme to periodically monitor and analyse collateral, which should be valued on a prudent basis.

One factor that generally indicates that there has been deterioration in the quality of a loan is that the borrower has defaulted in making interest or principal payments when they are due. As a starting point, loans generally should be identified as impaired when payments are contractually a minimum number of days in arrears reflecting domestic payment practices for the type of loan in question (e.g. 30-60 days). As an exception, loans need not be identified as impaired when the loan is fully secured, and there is reasonable assurance that the collection efforts will result in repayment in a timely manner of principal and interest (including full compensation for overdue payments).

In conducting risk assessment, it is also necessary to take into account the:

- 1) loan period – the longer the loan period, the higher the risk;

- 2) investment and financial risk related to the project, including:
- the risk of non-performance of the planned activities or non-achievement of the planned environmental effects within the specified period of time;
 - the risk related to the application of new technologies and high share of construction and assembly works;
 - the risk related to interest rate variations, changes in tax regulations and potential exchange rate fluctuations/variations;
 - the risk related to the long-term financial forecasts; the longer the term, the higher the risk of the forecasts to come true.

In order to minimise risks, the agency needs to implement a strict collateral policy to make sure that loans are repaid in accordance with the loan agreement. There are different ways to secure loans. Some of the major collaterals that can be accepted by the agency include:

- state guarantees;
- bank guarantees; or,
- mortgage.

In the case of the Slovenian Environmental Fund, prior to the first disbursement, the borrower has to submit a relevant guarantee. A loan can be secured against:

- a relevant guarantee of the government;
- a guarantee of a bank acceptable to the Fund;
- a mortgage on a market attractive property, acceptable to the Fund, of at least twice the value of the loan after the borrower has obtained positive opinion on his creditworthiness from a rating agency (a list of rating agencies is an integral part of Tender Documents);
- another equivalent security (first-class securities, etc.) acceptable to the Fund.

When possible, state guarantees are the cheapest and preferred option by both lenders and borrowers. Bank guarantees can be very costly and would eventually require securisation with property often through mortgages. Mortgages, as an insurance instrument, can be an attractive option providing there is a legal framework that regulates the market in the country.

Most of the public agencies in CEE and EECCA do not have possibilities to develop in-house skills to properly manage risks associated with the provision of loans. In addition, effective loan management requires building a very sophisticated loan management information system. Developing, institutionalising and servicing such systems could also be a very expensive exercise.

Box 30. Mortgage as a collateral

Mortgage is a debt instrument giving conditional ownership of an asset, secured by the asset being financed. The borrower gives the lender a mortgage in exchange for the right to use the property while the mortgage is in effect, and agrees to make regular payments of principal and interest.

Mortgages are getting more and more popular with investors as a way, among others, to avoid obtaining costly bank guarantees. However, using this instrument requires the existence of a relevant legal framework (e.g. Law on Mortgage) which is clear about:

- ownership, mortgage rights and property rights;
- insurance of property;
- cadastre organisation;
- register of certified appraisers of property.

When using mortgage as collateral, accurate methods for estimating property should be developed as correct estimation of the real value of the property minimises the risk of the insured loan. Property must be valued at market prices. Property should be insured and the insurance granted to the lender for the whole period of repayment of the loan. Appraisers must be legally certified by an official state institution.

Experience shows that in-house loan management may pay off, only if the agency manages more than 3 000 loan contracts. At the same time, the costs of a bank servicing about 500 loans, an average portfolio of about EUR 100 mln, would pay only one employee but this is not sufficient to cover the costs of maintenance of the loan management information system. Therefore, in-house loan management would only make sense when the agency manages a certain (sizeable) level of resources. If the agency continues to grow significantly and when it accumulates sufficient experience, managing loan portfolio fully in-house could become a viable option to consider.

Box 31. In-house loan portfolio management

The Slovenian Fund is among the very few CEE environmental funds that have developed very strong in-house skills in loan portfolio management. The Fund has progressively built this capacity over the years. It should be noted, however, that the Fund has always offered competitive salaries and operated on close-to-market terms.

The Fund has also developed detailed operational rules for portfolio management that are strictly enforced by the management and complied with by the staff, including good internal control practices. The Fund has enforced a consistent collateral policy which helps ensure loan repayments and maintenance of the real value of the Fund's capital. Fund's employees monitor the borrower's financial position throughout the entire loan repayment. In addition, the Fund controls the borrower also through his annual balance sheets and business reports and measures his creditworthiness constantly. In addition, the Fund maintains its own rating system. The Fund classifies its borrowers into groups from A to E, depending on their financial position and their repayment practices (overdue payments).

The Fund has also developed a clear system of loan repayment by instalments. The Fund requires borrowers to pay their debt instalments quarterly. The fee for servicing the loan is also paid each quarter. Interests on loans are paid monthly starting from the grace period. Such a system helps improve the quality of loan supervision as the borrower is closely monitored throughout the whole

repayment cycle, including the grace period.

In case of problems with loan repayment, the Fund has established a reminder procedure system. When the repayments are overdue for more than 14 days, the Fund starts the reminder procedure by sending a letter to the delinquent borrower. If over the following 30 days the borrower has not yet paid his debt, the Fund proceeds to collateral guarantees. As these steps are implemented systematically, the Fund has a very small share of bad loans.

(ii) Outsourcing of the loan portfolio management

If the agency has not reached a sufficient level of maturity and does not manage a substantive amount of resources, outsourcing of the loan portfolio management to a commercial bank could be a reasonable choice. A commercial bank could be a cheaper option than managing loans in-house as the skills, tools and the information infrastructure needed can be already available at the bank and well-tested in many credit operations. The incremental cost of the bank of adding one additional portfolio will be only negligible compared to the resources that a public agency will need to invest in order to develop its own in-house loan management system.

The agency may choose to outsource its loan portfolio management for several reasons, such as:

- getting rid of its bad and non-performing loans;
- selling loans to other financing institutions (a bank with experience in a certain sector, debt restructuring agency, etc.) when the agency needs cash;
- changes in the law on public agencies – for example, prohibition of subsidies to enterprises provided by public funds. In such events, the agency should cease its lending operations to the enterprise sector and sell its loans.

When bad loans are sold out, these loans are usually sold at a very low price. The bank will calculate the present value of the loan using its own discount rate which will most likely reduce the face value of the loan portfolio. To conduct such financial operations and in order to be in a better position to negotiate the terms of the sale, the agency needs to be able to measure the value of the loans put up for sale¹².

Outsourcing this service to a commercial bank is not without costs and risks. The agency will need to pay the bank for providing this service. In order to reduce these service costs, the agency needs to study the market and select a bank which could offer the most attractive conditions. One way to achieve this is to open a public tender and invite all interested bidders to provide their price quotes. It is important that the selected bank should have, among others, trustworthy management, good reputation, as well as a well-developed information system. All values the bank stands for should be carefully assessed.

Upon selection and approval, the agency should sign a contract with the bank. All details, including the allocation of benefits and risks and the obligations of the parties should be specified in the contract. Consequences for deviation from these legal provisions should be clearly identified. In

¹² The loan portfolio value is measured by calculating the net present value of the flow of repayment, including the principal and the interest, weighed by the probability (0-1) of each loan being paid back.

addition, with the aim of lowering the risk to the extent possible, the agency should establish a control system and performance indicators which will allow it to check the commercial bank's managerial and financial creditworthiness throughout the entire time of the contract duration.

Summary and guidance for the implementing agency

Effective cash-flow and loan-portfolio management are essential for the good financial state of the implementing agency.

Effective cash-flow management implies skills to manage financial resources in a sound and prudent way in order to ensure that "free" resources are safely invested in different financial instruments and bring in additional revenue to the agency or in case of cash shortages, the agency manages to raise enough debt to cover its liquidity problems. In either case, properly assessing the risk is key to the success of these operations. Any of the options that exist has its advantages and disadvantages and these should be carefully weighed by the agency before taking a final decision where to invest and on what conditions or what debt instruments to employ to cover shortages.

Similarly, there are advantages and disadvantages of managing loan portfolios in-house versus outsourcing them to a commercial bank for a fee. If there is not sufficient experience with financial management and if the portfolio is not sizeable enough to justify in-house costs, the agency should consider outsourcing this service to a bank. Outsourcing comes at a price for the agency and requires a detailed market analysis before such a decision is taken.

CHAPTER 4 CONCLUSIONS

Public environmental expenditure programmes are one of the instruments of environmental policy for achieving national policy objectives and priorities through public support. Management of such programmes should meet the sound principles of public finance for transparency, cost-effectiveness and accountability of managers.

The OECD Good Practices for Public Environmental Expenditure Management provide guidance to environmental agencies on the design of such programmes in line with internationally-recognised standards and criteria and in accordance with the principles of sound public finance. This Handbook has been prepared as a supplement to the Good Practices. It aims to show how to implement these good practices in real life and proposes a step-by-step approach to resolving various practical challenges that institutions managing expenditure programmes face in their everyday operations.

The Handbook reiterates the rationale for public expenditure in the environmental sector and the main decisions that governments should make to define and to manage environmental programmes. It identifies a set of core principles that agencies managing public resources should follow. It also offers a number of practical management tools that such agencies can use in their daily operations. Thus, this document deals with all important aspects of the operations of a public institution managing public expenditure for environmental investments. These aspects cover programming, project cycle management, including appraisal, selection and financing of environmental projects as well as monitoring and evaluation.

The public environmental expenditure programme should be an integral part of a larger environmental policy and should support the implementation of strategic national objectives. Effective programming should be based on a systematic economic, financial and market analysis in order to establish the priorities of the programme. Programming and priority-setting is a major responsibility of the government however involving major stakeholders in designing it could significantly improve its chances for success.

The appraisal of projects is a technical concept and is usually conducted by professional staff, held strongly accountable for decisions. The appraisal process alone, even if conducted in accordance with the best international practices, cannot ensure optimal results if politicians have failed to set clear rules or have made erroneous choices. In addition, responsibilities for programming should be separated from responsibilities for project cycle management in order to ensure accountability and transparency in the two processes.

Project appraisal constitutes the main function of any implementing agency and the core of the management of the project cycle. The appraisal process provides mechanisms and tools to find out and select the most cost-effective projects with the aim of achieving the greatest environmental benefits at the lowest possible cost. Simple but clear criteria and procedures are needed in order to ensure that public resources are spent in a transparent and efficient manner. This requires assessing projects' financial viability and cost-effectiveness. Cost-effectiveness criterion should be a key selection criterion. In selecting projects for financing, it is important to distinguish between appraisal

(evaluation) of an applicant and appraisal of a project. The analysis of the applicant's financial situation and overall performance allows the implementing agency to identify any political, legal, institutional, and financial risks related to the applicant which might undermine successful implementation of the project.

All decisions made during the appraisal, selection and post-selection should be aimed at ensuring optimising the use of public resources provided by the agency and leveraging additional resources for environmental investments. In addition, rules and procedures should be designed to protect public funds from misuse and mismanagement.

Project implementation and post-implementation monitoring allow the implementing agency to measure the performance of individual projects and to assess the environmental impact achieved with agency's support. Project implementation monitoring implies an effective set of checks and balances for both technical and financial control from start to completion of projects. Monitoring of project implementation should continue in the operational phase of the project, as often the full extent of the environmental benefits is achieved only when the whole project is completed and the installed equipment has reached its full operational capacity.

Evaluation of the entire programme and not only of individual projects, as well as the whole project cycle is equally important. Systematic evaluation is a critical learning device and a prerequisite for building capacity and skills to improve the management of future project cycles. The knowledge acquired during programme evaluation is valuable as it can be further used to inform the political process and help re-assess the priorities of the national environmental policy that need public support in order to be implemented.

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ANNEXES

GLOSSARY OF MAJOR TERMS