

Environmental Finance

HANDBOOK FOR APPRAISAL OF ENVIRONMENTAL PROJECTS FINANCED FROM PUBLIC FUNDS



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where the governments of 30 democracies work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

EAP TASK FORCE

The Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe (EAP Task Force) was established in 1993 at the “Environment for Europe” Ministerial Conference in Lucerne, Switzerland. Its Secretariat was established at the OECD as part of the Centre for Co-operation with Non-Members. Since its creation, the EAP Task Force has proven to be a flexible and practical tool for providing support to political and institutional reforms in the countries of the region. After the Aarhus Ministerial Conference in 1999, its efforts were refocused on the countries of Eastern Europe, Caucasus and Central Asia (EECCA). More detailed information about Task Force activities can be found on its website at: www.oecd.org/env/eap

This report is also available in Russian under the title:

Руководство по оценке экологических проектов, финансируемых за счет государственных средств

© OECD 2007

No reproduction, copy, transmission or translation of this publication may be made without written permission. Applications should be sent to OECD Publishing: rights@oecd.org or by fax (+33-1) 45 24 13 91. Requests for permission to photocopy a portion of this work should be addressed to the Centre Français d'exploitation du droit de copie, 20 rue des Grands-Augustins, 75006 Paris, France (contact@cfcopies.com).

FOREWORD

The EAP Task Force for the Implementation of the Environmental Action Programme of Central and Eastern Europe (EAP Task Force) has worked since 1993 on strengthening environmental expenditure management in economies in transition. An important result of this work was 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 allocating environmental expenditures in a manner that is consistent with the basic principles 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 would be acceptable to Ministers of Finance and foreign sources of financing.

The Handbook presented in this volume complements the Good Practices by examining how they could be implemented in practice. To help 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 the 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 especially to 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, and Milojka Jerse from the Environmental Development Fund of Slovenia. In addition, several consultants have contributed significantly to the project: Glen Anderson (United States) and Jan Raczka, 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 to the Austrian Ministry of Environment and the Polish EcoFund for hosting the experts' workshops where the contents of the Handbook were 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 United Kingdom (Department for the Environment, Food and Rural Affairs). All these contributions are gratefully acknowledged.

The views expressed in this publication 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
CEE	Central and Eastern Europe
CEA	Cost-effectiveness analysis
CHP	Combined heat and power (installations)
DFES	Debt-for-environment swap
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
EU CF	European Union Cohesion Fund
FMAFEWM	Federal Ministry of Agriculture, Forestry, Environment and Water Management, 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)
MCA	Multi-criteria analysis
MDG	Millennium Development Goals
NEAP	National Environmental Action Programme
NGO	Non-governmental organisation
NPV	Net present value
O&M	Operating and maintenance (costs)
OECD	Organisation for Economic Co-operation and Development
PAC	Pollution and abatement
PE	Population equivalent
PEEM	Public environmental expenditure management
PIU	Project implementation unit
PLN	Polish zloty (Polish national currency)
PNFEPWM	Polish National Fund for Environmental Protection and Water Management
PPP	Polluter-pays principle
R&D	Research and development
SME	Small and medium enterprises
UAC	Unit annual cost
UIC	Unit investment cost
UOP	Unit operational cost
USD	US Dollar
VAT	Value added tax
WHO	World Health Organisation
WTO	World Trade Organisation
WWTP	Wastewater treatment plant
CO ₂	Carbon dioxide
BOD	Biological oxygen demand
COD	Chemical oxygen demand
N	Nitrogen
P	Phosphorus
kg	Kilogramme
km	Kilometre
m ³ /d	Cubic metres per day

TABLE OF CONTENTS

EXECUTIVE SUMMARY	7
INTRODUCTION	11
CHAPTER 1 PROGRAMMING.....	14
Introduction	14
Essential programming elements and eligibility criteria	17
Financial instruments.....	25
Developing financial plans	29
Institutional structures for managing environmental expenditures.....	37
Summary and guidance for decision-makers.....	43
CHAPTER 2 PROJECT APPRAISAL	44
Project cycle framework.....	44
Project identification	54
Project preparation and processing of applications	57
Eligibility screening (Pre-appraisal stage).....	59
Appraisal process.....	62
Appraisal and ranking of projects.....	69
Evaluating applicants.....	79
Selection of projects for financing.....	83
Summary and guidance for the implementing agency.....	87
CHAPTER 3 IMPLEMENTATION	89
After-project evaluation.....	89
Project implementation monitoring and financial transfers.....	98
Post-implementation monitoring and evaluation	104
Summary and guidance for the implementing agency.....	106
CHAPTER 4 CONCLUSIONS	107
REFERENCES	109
ANNEXES	111
Annex I.1: Illustrative environmental and natural resource priorities	112
Annex I.2: Possible co-financing rates per project type	113
Annex II.1: Outsourcing opportunities	115
Annex II.2: Polish EcoFund Project questionnaire and guidelines for applicants	121
Annex II.3: Polish EcoFund complete Water Application Form and Instructions to Applicants	128
Annex II.4: Calculating cost indicators	151
Annex II.5: Selecting the discount rate and calculating financial viability indicators.....	155
Annex II.6: Package of appraisal criteria in use at the Polish EcoFund	158
Annex III: Cash flow and loan portfolio management	160
Annex IV: Checklists for measuring compliance with Good Practices for PEEM.....	167
Annex V: List of useful links	172
GLOSSARY OF MAJOR TERMS	173

Tables

Table 1.	Types of projects	21
Table 2.	Mix of subsidy instruments	28
Table 3.	Revenue instruments.....	29
Table 4.	Revenues and disbursements for selected CEE Environmental Funds	32
Table 5.	Plan of revenues.....	36
Table 6.	Expenditure Plan.....	37
Table 7.	Possible division of roles and responsibilities in the implementing agency	40
Table 8.	Types of projects, the application cycle, and appraisal process.....	58
Table 9.	Example of a standard application form	63
Table 10.	Possible O&M costs to be requested from the applicant	66
Table 11.	Project cash flow	67
Table 12.	Example of technical and environmental criteria	73
Table 13.	Economic criteria in use at the Polish EcoFund	78
Table 14.	Project sheet in use at the Polish EcoFund	79
Table 15.	Standard reporting form.....	101

Figures

Figure 1.	Strategy, policy development and environmental programmes	16
Figure 2.	EcoFund's revenues from the Polish DFES, 1992-2004, million USD	33
Figure 3.	Programme and project cycles	45
Figure 4.	Decision flowchart in the project appraisal process	50
Figure 5.	Checklist for a step-by-step eligibility screening process	60
Figure 6.	Project appraisal logframe.....	87
Figure 7.	Decreasing margin of errors in estimated project costs throughout the project cycle	90

Boxes

Box 1.	Essential elements of the expenditure programme	17
Box 2.	Launching an expenditure programme	18
Box 3.	Polish EcoFund definition of priorities within sectors.....	20
Box 4.	Revenues of the Polish EcoFund	33
Box 5.	Evolution of Austrian institutions for PEEM.....	43
Box 6.	Conditions for an effective project cycle.....	47
Box 7.	Essential elements of a communication strategy with applicants	51
Box 8.	Information package for applicants	51
Box 9.	Possible uses of a project-tracking database.....	53
Box 10.	Approaches to calculating cost-effectiveness indicators	76
Box 11.	Risk assessment in providing loans to municipalities	82
Box 12.	Eligible costs in the 2001 EU State Aid Policy on Environmental Protection	84
Box 13.	Auction for subsidizing wind turbines in Austria	86
Box 14.	How to deal with differences in prices before and after tendering	92
Box 15.	Checklist of potential issues for clarification during negotiations	93
Box 16.	Step-by-step preparation process for negotiations.....	94
Box 17.	Possible elements of a standard grant/loan agreement	95
Box 18.	Reasons for termination of a contract.....	96
Box 19.	Examples of types of costs not covered by the Polish National Fund.....	98
Box 20.	Minimum prerequisites for ensuring good project supervision and monitoring.....	99
Box 21.	Risk mitigation measures during implementation	104

EXECUTIVE SUMMARY

Background

Recent trends in Eastern Europe, Caucasus and Central Asia (EECCA) countries confirm that the public sector remains a major source of finance for environmental protection and pollution abatement and control (see OECD, 2007). It is important therefore that public environmental expenditure programmes are efficient and effective. Amongst other things, this might help to leverage additional resources for environmental investments both from international and private sources.

- To support these efforts, the EAP Task Force developed Good Practices for Public Environmental Expenditure Management (PEEM) (OECD, 2006b) that were subsequently adopted as a Recommendation by the OECD Council¹. The report provides guidance to environmental agencies on how to design and implement public environmental expenditure programmes in line with international good practices and according to the principles of sound public finance.
- A companion volume examined OECD country experience with PEEM (OECD, 2006c). The report analysed alternative institutional set-ups adopted by selected OECD countries/regions to design and implement environmental expenditure programmes in the water sector. It discussed the common principles and diverging approaches in addressing this issue, including the role that the private sector can play in the management of such programmes.

This Handbook aims to support implementation of the Good Practices. It 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 to which the implementing agencies in charge of the management of such programmes should adhere. The Handbook also identifies the essential tools needed to ensure 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 Central and Eastern European (CEE) countries, with a focus on the institutions established in Poland, which has accumulated substantial experience in this area over the years.

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

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.

Economic rationale for public environmental expenditure

This Handbook is about implementing good international practices in managing subsidies for environmental investments, with a focus on wastewater investment projects. **The golden rule of public funding suggests that governments should support only those investments that are economically efficient but not financially viable.**

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

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 assistance should be set in such a way as to ensure that it does not replace, but rather leverages the recipient's spending. Thus, implementing agencies should be seen as the source of last resort for covering the financing gap of priority environmental projects (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 that makes potential environmental projects economically viable.

Main decisions for governments regarding an expenditure programme

When considering whether to establish or reform a public environmental expenditure programme 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 that will be supported.
- Assign revenue sources for the programme, identify financing mechanisms and the assistance rate per type of project/beneficiary.
- Define the application cycle (time-bound versus ongoing) that is best adapted to the priorities they have identified.

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

Only when these decisions are made – i.e., 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 check that this agency is needed, keep its structure as simple as possible, and ensure it adapts over time, including a provision 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 that should help implementing agencies avoid common mistakes. These principles aim to translate, in practical terms, the main goals and conditions of public expenditure management systems: transparency, accountability, and 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. 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. 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 help identify potentially good projects;
4. A two-step appraisal process is preferable (particularly with large investment projects), as it allows preliminary screening on the basis of eligibility criteria, thus saving time and resources of 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 assist applicants in the application process. Assistance, however, should be equally available to all potential clients and should be limited to training and providing written comments on applicants’ project proposals.
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 and projects that are not sustainable should be rejected.
9. The process does not stop once a decision to finance a project 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 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 that facilitate its management:

- An information package for applicants designed to reiterate 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 complete it, along with certain indicators that should be provided by the agency (such as a discount rate, input prices, and inflation rates). Detailed instructions to agency's staff on how to handle data and information that enter the appraisal process are also essential.
- Methodological guidelines for conducting cost-effectiveness analysis.
- A project fiche, prepared by agency's staff, to synthesise information and report to the decision-making body.
- A manual of operational rules and procedures for staff.
- A database for project cycle management.

The Handbook includes illustrations based on concrete experience of well-performing institutions in CEE. 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, such tools help prevent the mismanagement and misuse of public resources provided by the agency.

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 EAP Task Force's work on environmental finance 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 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 support implementation of good international practices in programming and project cycle management. The Handbook explains not only what governments and implementing agencies should 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 from which different agencies can choose.

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 the appraisal and selection of individual projects for which public support is sought. 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, international financing institutions (IFIs), international organisations concerned with the practical implementation of good practices in this area, and 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. The Handbook does not deliver a complete, “ready-to-use” toolkit for immediate application by any implementing agency. The tools and approaches proposed here need to be further adjusted and tailored to the needs of individual institutions. 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.

Developing the Handbook

While many Project Cycle Handbooks already exist, most of them look at 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 perspective of public financing organisations that evaluate and finance environmental investment projects using subsidies. Such tools are usually dispersed among various institutions – since each has a comparative advantage in some aspect of project cycle management – and vary in quality.

The Handbook is based on the best available tools and practices derived from some of the best, internationally-recognised government authorities and financing agencies from both CEE and OECD countries. The Handbook was prepared through a co-operative effort of a team of international experts with practical experience in programme design, project appraisal and financing. These include some Polish environmental funds (The National Fund for Environmental Protection and Water Management, the Polish EcoFund, and the Krakow Regional Environmental Fund), the Slovenian Environmental Development Fund, the Czech State Environmental Protection Fund, and the environmental fund under the supervision of the Austrian Ministry of Agriculture, Forestry, Environment and Water Management. A number of consultants with substantial hands-on experience in this area have been instrumental in shaping the Handbook.

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 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.

Structure of the Handbook

The Handbook is divided into three main chapters. Chapter 1 discusses issues related to programming. The chapter defines the essential elements of a well-designed expenditure programme, presents different approaches to developing a realistic rationally prioritised and well-focused multi-year programme, and identifies tools to prepare good financial plans and budgets. Finally, 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 the 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 implementation 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 that can help protect the implementing agency from misuse and mismanagement of its public resources.

Monitoring of project implementation and subsequent evaluation are other major issues discussed in Chapter 3. 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 project objectives.

CHAPTER 1 PROGRAMMING

In the context of public finance, programming is the process by which decisions are made with regard to which priority areas require public support. Programming also includes defining the rules governing the allocation of resources across different areas. Effective programming should be based on a systematic economic, financial and market analysis, which is then used to establish programme objectives and identify corresponding 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 the 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, the financing and implementation of which are 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 that 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 urgently 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 is to set the "rules of the game" and ensure that public resources are spent in a cost-effective and efficient manner.

Responsibilities for programming and project cycle management – specifically appraisal – should be separate in order to ensure the accountability and transparency of these 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 compensate for this failure of politicians. How this can best be 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 to developing a realistic rationally-prioritised and well-focused multi-year expenditure programme, third to identify 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, and World Health Organisation (WHO) directives). Environmental policy is established to be consistent with a 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 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 agreed objectives for the expenditure programme, a 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 transboundary air pollution, improving wastewater treatment in large cities or in rural areas, 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. The financing strategy should not, however, 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.

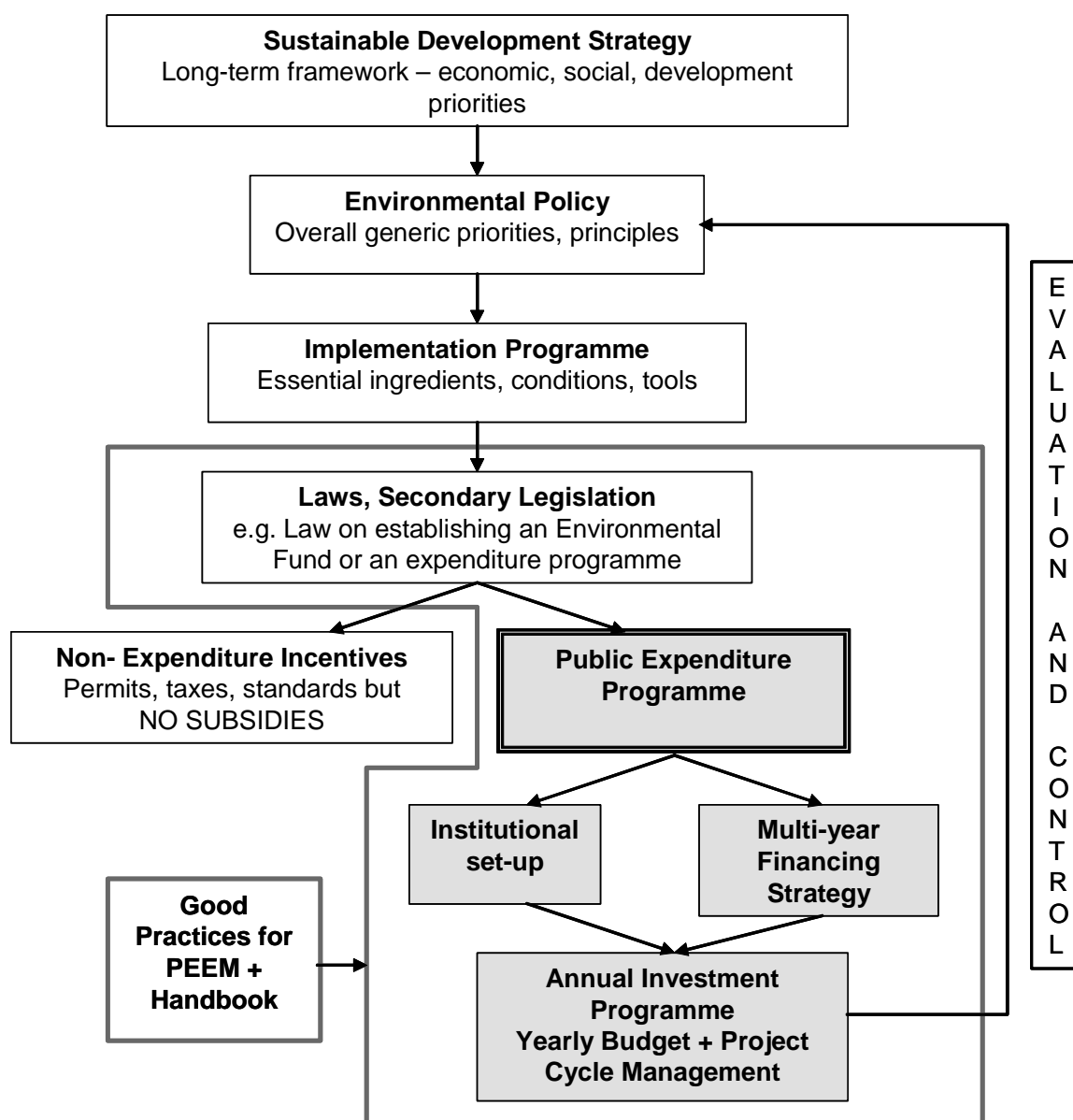
The financing strategy should provide the basis for developing annual investment programmes and related annual budgets. An environmental investment programme is the implementation component of an overall financing strategy designed to promote sustainable development objectives. Figure 1 describes the process that links 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 termination) clause.

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



Essential programming elements and eligibility criteria

In most EECCA countries that have set up institutions to manage 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 or unfunded altogether and are carried over from one year to the next 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 that can achieve the stated programme's objectives at the least cost. Setting up an expenditure programme requires sound identification of the financial needs related to specific environmental areas. When the environmental objectives are clearly stated, the financial needs can be assessed by screening the current situation (e.g., preparing an inventory of wastewater treatment facilities) and forecasting the value of projects that need to be implemented in order to achieve established environmental objectives.

Programming activities can broadly be divided into two groups:

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

The essential elements of a well-designed, realistic programme are provided in Box 1.

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 and unambiguous;
- 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;
- Well-documented principles, rules, and operating procedures for project cycle management;
- Clearly-defined and robust criteria for appraisal, selection, and financing of investment projects;
- Clearly-defined procurement rules;
- Selection of the best institutional arrangement to manage the expenditure programme, equipped with sufficient resources to meet its objectives, qualified staff and instruments to implement the programme;
- Performance indicators for the institution managing the expenditure 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, solid 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 the share and types of project costs funded (co-financing requirements).

Box 2. Launching 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. The following 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 and studied water tables. Out of 47 reservoirs identified and studied, the EcoFund selected 29 as seriously affected by surface pollution. The Fund then sent letters to the municipalities in which these reservoirs were located (280 towns and rural municipalities). Of these, 119 settlements were identified as eligible.

The programme was designed to support projects that:

- are intended to construct, develop, and/or modernise wastewater treatment plants (WWTPs) and sewerage networks (excluding house drains);
- will be implemented on the territory of agglomerations of more than 2 000, but less than 100 000 population equivalents (p.e.);
- will be implemented on the territory of agglomerations specifically identified in the National Programme on Municipal Wastewater Treatment;
- are designed to address problems related to the hydro-geological conditions of individual reservoirs, the natural susceptibility of the reservoir aquifers to pollution penetration from the surface, and the potential pressure of specific pollution sources on groundwater.

In developing the appraisal and ranking system of projects to be supported through this programme, the Fund first selected the indicators to use in the evaluation process with regard to the specific problems that will be addressed (see the last bullet point above). These indicators were divided into three main groups:

- Group 1: Properties of the water reservoir
 - ✓ Reservoir area, in [km²];
 - ✓ Groundwater resources available, specified in modular form in [m³/d×km²];
- Group 2: Hydro-geological characteristics
 - ✓ Aquifer type;
 - ✓ Volume of precipitation water infiltration;
- Group 3: Magnitude of environmental pressure
 - ✓ Population size of the specific agglomeration (as a measure of the pressure on the environment), including such parameters as sewage quantity, solid waste quantity, air pollution (transport, heating, etc.), production size (most people work for local employers), and/or agriculture.

The Fund then asked the eligible municipalities to provide information on the status of their WWTPs. The inventory showed that 14 of these municipalities did not have WWTPs. Then the Fund selected 13 municipalities where the worst cases were identified and invited them to prepare projects. These projects were appraised and ranked and the most cost-effective ones received financing.

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.

Expenditure planning should be based on well-identified financial needs in various priority areas. An inventory of current facilities may be useful in estimating necessary expenditures (see Box 2).

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

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 limited resources that, ideally, is the 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 objectives and priorities. 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 extreme cases, a strategy to serve as a guide for setting expenditure priorities may not exist, and even if it does, may be too general or overly optimistic, or lack an implementation plan.

What should be done if a government has failed to prepare a good expenditure programme? Lacking a (well-focused) expenditure programme, the implementing agency needs to develop an approach to setting clear priorities and all other related elements for its work. One option is for the agency to take the initiative and launch a dialogue within the government. If such a broad dialogue or political process is not possible, the agency may need to do its own priority-setting using its staff, supported by its governing body, the members of which should include most of its major stakeholders. 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.

Prioritisation can be defined in terms of the:

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

Box 3. Polish EcoFund definition of priorities within sectors

The Polish EcoFund 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 oxides of nitrogen and elimination of low sources of such emissions.
- Reduction of eutrophying pollutant 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.
- Promotion of waste management and contaminated soil reclamation.

The EcoFund has defined strict boundaries for each priority area.

In the air protection sector:

- highest stacks (above 100 meters high) - desulfurisation of flue gases
- lowest stacks (below 40 meters high) - elimination of low emission sources

In the water protection sector:

- wastewater treatment plants for towns located within 50 km of the Baltic coast
- wastewater treatment plants crucial to the improvement of water quality in large 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 biosphere reserves

In the solid waste management sector:

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

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

It is also important that priorities be 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 a few proposals and will not be in a position to disburse all 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.

If priorities are set by project type, some of the major types are provided in Table 1 below.

Table 1. 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 maintain land in its current undeveloped state
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 and protected areas, restore habitats, and provide complementary infrastructure
Habitat restoration and protection	May involve some capital and infrastructure investments, species propagation, etc.
Contamination cleanup investments	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, as well as an 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 of 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 projects².** 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 a novelty internationally. Clearly, such projects present a higher risk of failure to achieve anticipated environmental benefits than do typical projects. This also applies to the transfer of the best foreign technologies. A number of comprehensive engineering, economic, and marketing studies should be carried out before a decision is taken to support such cases or not.
- **New versus ongoing projects.** Generally, support for ongoing projects should be discouraged in order to avoid situations in which project promoters start a project just to increase the probability of receiving subsidies from the agency.

Choice of form of subsidy

An important element of the expenditure programme and a major eligibility criterion is the form and level 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 to guide applicants in developing their proposals and determining the level of co-financing support to seek from the agency. The level of co-financing has its justification in the concept of additionality. This also requires the selection of different forms in which the agency can distribute the subsidies and manage 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 and therefore increase the efficiency of public resources allocation.

In order better to 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 as well as in 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

² Commercial projects are those that 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.

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 unable 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 only just sufficient to ensure the maintenance of the real value of its initial capital. 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 that 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, others to grants, or can use their 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 major groups of applicants: municipalities or municipally-owned facilities, private sector firms, NGOs.

(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 to 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 an application to a 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. If the second agency rejects the application, however, 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. The debt limits of municipalities, however, are often restricted by the acts on public finance (i.e., the ratio of total debt to budgetary revenues or debt repayment to budgetary revenues). In determining the co-financing rates, the agency should consider not only the availability of additional sources of financing (own resources, loans), but should also take into account the borrowing limits for municipalities. 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. Policy makers need to stipulate minimum and maximum values within the framework of the assistance/financial instrument. Measures of affordability (e.g., percentage of household income spent on utilities) 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 capital 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. Yet, the general economic situation within various sectors, as well as the strength of capital markets can be useful factors in assessing the resources of private sector firms. In addition, the agency may track trends in the co-financing amounts requested in applications. This will be a good overall indicator of the capacity of private companies 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.

With regard to some types of revenue-generating projects (e.g., wastewater treatment, solid waste management projects), the agency may decide to introduce specific formulae to calculate precisely the co-financing rate. At the same time, the agency may set the maximum level of involvement of its

financial resources per type of project, e.g., 75% of total eligible project cost. For example, the co-financing rate for environmental investment projects supported from the EU Cohesion Fund is determined using a specific formula³. While various formulae can be used to determine the co-financing rate for revenue-raising projects, this may be difficult to do in the case of non-revenue-raising projects (e.g., nature conservation). Such projects often require higher rates of support. Annex I.2 contains suggestions for possible options for the range and type of co-financing rates that can be offered 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 also presented.

Financial instruments

The agency can use many different types of financial instruments. These include:

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

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

Financial 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. **Financial 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.

³ In determining the co-financing rate for environmental investment projects, the EU Cohesion Fund (CF) uses the following formula: $r = (C-R)/C$, where r stands for the CF co-financing rate, C stands for the present value of the investment and replacement costs, and R is the net present value of the revenues generated by the project (including residual value).

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. For some types of projects (e.g., support for research, non-governmental organisations, nature conservation, and education programmes), however, it may be necessary to provide 100% support because co-financing may be difficult to secure.

The major drawback of grants is the "moral hazard"⁴ sometimes associated with "free money". Because grants do not provide sufficient incentives to beneficiaries to save 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 obtain 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 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

Many of the environmental funds in CEE countries use soft loans and feature loan terms and conditions that are more attractive than those prevailing on 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 hold recipients accountable for project results, because debt has an opportunity cost in contrast 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

⁴ In economics and ethical theory, the term moral hazard is used for any situation in which a person or an 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 describing a situation in which a bank limits the supply of loans – even though it has sufficient 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.

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. If the borrower can provide a loan guarantee, however, 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. Yet, 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 capable of properly analysing risk.

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 that 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 2 shows a possible mix of subsidy instruments with regard to different types of projects.

Table 2. 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 of project size

The choice of financial instrument 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.

Another 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 work (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 wage 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 agency 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 work between the agency and the bank is that 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, large investment projects exist (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 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**.

Revenue sources

Implementing agencies and other types of environmental expenditure programmes may generate annual working capital from a number of sources. Table 3 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 3. Revenue instruments

Budget allocations	
Description:	Transfer of state treasury resources to agency account; 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 pollution emissions, water pollution discharges, waste disposal
Examples:	Air, water, and waste fees and charges (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 due to 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), tariffs for water services (in most EECCA)
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 required revenues as acceptable user fee rates may be too low
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 (Romanian National Fund)
Revenue principle:	Benefits principle, ability-to-pay (if fee related to value of asset for which license is 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, favourable tax treatment for large donations, installation of revolving fund
Non-revenue benefits:	Creates fewer market distortions, 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; USA, France, Italy, Switzerland, Sweden and Norway to Poland; private debt-for-environment swaps (brokered by the World Wide Fund (WWF) in the Philippines)
Revenue principle:	Political prioritisation
Strengths:	Does not 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:	Loans from the 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 in establishing revolving funds, particularly if provided with grace period and favourable interest rates
Weaknesses:	Up-front 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 4 illustrates the different sources that are used to generate annual working capital for selected CEE environmental funds. Box 4 describes a specific example of a source, a debt-for-environment swap scheme, which provides the revenues for the Polish EcoFund.

Table 4. 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 Ecofund (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: EcoFund	38.5	Debt swap – 81.1% Swiss grant – 9.2%	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.

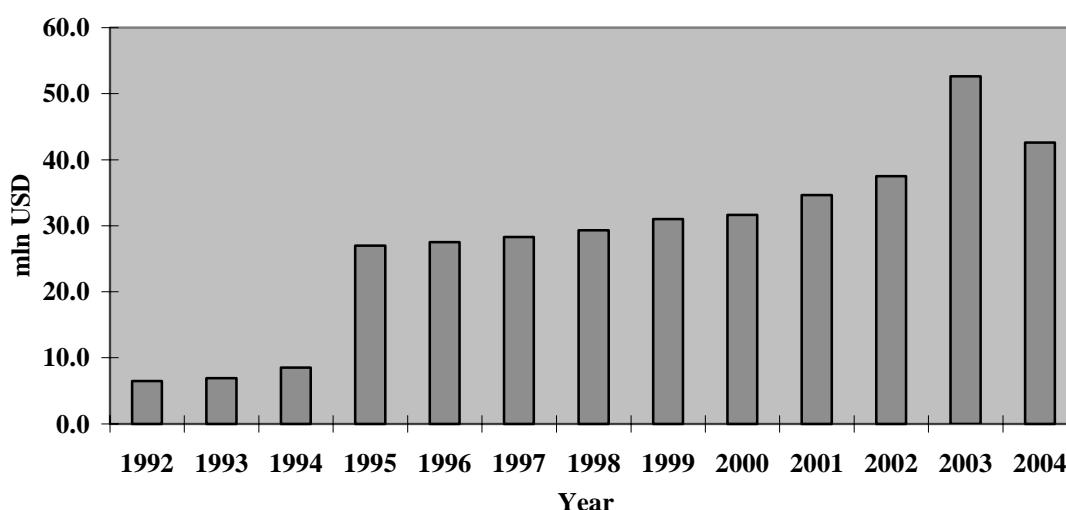
As can be seen from the Table 4, the most commonly used revenue instruments among the CEE Environmental Funds are pollution charges, product charges, and loan repayments. These are followed by privatisation proceeds, financial operations, state budget transfers, foreign grants, and/or IFI loans.

Box 4. Revenues of the Polish EcoFund

Thanks to the Polish debt-for-environment-swap (DFES) scheme implemented by six creditor countries – the USA, France, Switzerland, Italy, Norway, and Sweden (Sweden participated in the scheme until 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 Poland's debt 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 totalling USD 571 million. By the end of 2004, the EcoFund had received a total of USD 350 million from the DFES scheme, i.e. 60% of the total amount that has to be transferred to the EcoFund. Figure 2 shows the trend in EcoFund's revenues from that source over the 1992 to 2004 period, 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 in which individual instalments become due and payable, as stipulated in the DFES agreements concluded between Poland and its individual creditor countries.

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



In order to achieve its objectives, meet its commitments, and prepare realistic budgets, the agency needs a predictable and stable revenue stream. Hence, the revenue composition is of utmost importance. The stability of 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, present 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. Thus, if tax authorities are to be involved, some revenue-sharing arrangement with the budget is worth considering. 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 insufficient to cover the costs of monitoring and enforcement of Environmental Inspectorates.

Undertaking risky investments on financial markets with the aim of generating additional revenue is also not recommended. While agencies could invest in a few instruments such as bank deposits and state securities (i.e., government bonds and treasury bills), experience shows that in some regions and under certain conditions even these instruments may be risky. By the same token, the agency should not be permitted to invest on the capital market. Acquiring or receiving enterprise shares or securities (bonds, letters of exchange) may diminish the agency's profile and credibility and may easily evaporate 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 in 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 over time;
- keep pace with the rate of inflation;
- introduce a diverse revenue base;
- have low administration costs, i.e., 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 revenue and expenditure estimates to ensure there is no shortfall during the planning period. The budget planning period is typically greater than one year,

reflecting the fact that many environmental projects will take several years to implement (e.g., wastewater treatment plants, landfills, etc.). A frame of 3-5 years is normal and includes individual annual budget plans for the next and subsequent years. Generally, the future-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. 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 also corresponds to the 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 sources is usually determined by 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 from the previous year;
- income from revenue sources;
- project implementation costs (for ongoing 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).

Tables 5 and 6 below offer simple management tools for annual revenue and expenditure planning.

Table 5. Plan of revenues

Type of revenue	Amount of revenues				
	Previous year (<i>n-1</i>)	Current year (<i>n</i>) budgeted	Current year (<i>n</i>) achieved	Following year (<i>n+1</i>) budgeted	Following (<i>n+2</i>) year budgeted
National budget					
Pollution Charges					
<i>Air</i>					
<i>Water</i>					
<i>Waste</i>					
<i>Other</i>					
Interest on loans issued					
Repayment of loans issued					
Foreign borrowing					
Other					
Total revenues					

The foregoing table helps to identify the source and amount of revenue on a yearly basis. It is also recommended to add columns to compare percent changes or by index between the budgeted and attained values. This is a good starting point for forecasting expenditures.

As a minimum, the expenditure plan should include:

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

Apart from fixed expenses, which are necessary to perform the adopted operational plan, there are other fixed costs related to different financial products, especially loans provided by the agency, such as:

- costs of establishing collateral (property valuation for mortgage purposes, legal 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 6. Expenditure Plan

Type of expenditure	Amount of expenditure				
	Previous year (<i>n-1</i>)	Current year (<i>n</i>) budgeted	Current year (<i>n</i>) estimated	Following year (<i>n+1</i>) budgeted	Following year (<i>n+2</i>) 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)					

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

Institutional structures for managing environmental expenditures

Once all other essential elements constituting the expenditure programme have been clarified, the government agency responsible for programme implementation can move to selecting the most appropriate institutional arrangement. A number of different institutional forms can be established to manage public environmental expenditure programmes. Regardless of the institutional form, however, 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

The various available institutional arrangements that can be employed to manage public environmental expenditures 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 – the project implementation unit – 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).

Environmental funds are the predominant institutional form for managing public environmental expenditures 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 typically disburse resources provided by donors or IFIs, at least in CEE and EECCA countries. These financial resources are usually earmarked for specific types of projects, such as energy efficiency, waste minimisation, and greenhouse gas reduction. The two main forms are:

- *Directed credit funds (DCF)*s 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 in charge of 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, yet some roles and responsibilities may be assigned or delegated to other institutions. The major reasons for this sharing of responsibility include: 1) management oversight; and 2) facilitation of participatory processes.

Management oversight

In practice, 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. Larger agencies also have a board of directors, with specific responsibilities, usually referred to as the Management Unit. Table 7 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 people. Such a size is conducive to efficient deliberation or decision-making, although 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 7. Possible division of roles and responsibilities in the implementing agency

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's 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, external consultants Management Unit Agency ranks and selects projects for financing and provides recommendations, Supervisory Body takes final decision Management Unit Agency's 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's Director, Chair of Supervisory Body Agency's Financial Department

The supervisory body could be administratively liable for ensuring the overall appropriate use of agency's financial resources. Yet, it is very difficult under the civil law meaning of most European countries to make the supervisory body members liable for decisions on financing projects. A practical reason underpins this as well. 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, and 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 of 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, 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;
- 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 uniform goods or services 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 expenditures 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 units 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 a supervisory body may guide some of the programming and project cycle tasks.

A third factor relates to staffing requirements to execute the expenditure programme. If significant differences in salaries exist between civil service positions and the salaries required to attract staff with needed 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 based on the Law on Foundations. On the other hand, remuneration at the Polish National Fund is also on par with the best paid government jobs in Poland in order 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. If funding is associated with revenue sources that are uncertain and unpredictable, however, 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 Environmental Development Fund). A third option could be to outsource loan portfolio management to a bank until in-house capacities are sufficiently developed. Regardless, if outsourcing – in whatever form – is the preferred option, the implementing agency will need to pay a fee to the bank or the institution sharing this function.

Finally, funders may impose conditionalities on the institutional form. 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 outsourced 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 revenue generated through taxes and fees and split between the federal, regional and local authorities. In 1984, a similar funding system was established to finance 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 through grants.

In 1993, after the collapse of the loan administration information technology system, which caused a number of loan portfolio management problems, the funding system underwent fundamental change. The Fund itself ceased disbursement activities and since has only existed as a financial body administering “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 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 beneficiaries have been free to raise financing for their projects as they see fit and 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 is an integral part of a larger environmental policy and supports the implementation of strategic national objectives. Effective programming needs to be based on a systematic economic, financial and market analysis in order to establish the priorities of the programme. While programming and priority-setting are a major responsibility of governments, involving key stakeholders in their design could significantly improve 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 realistic expenditure programme is specified in terms of sources of financing, types of projects and types of beneficiaries to be supported, financial instruments and conditions 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 accountable for its performance.

Figure 3 presents the linkages between the programming and project cycles that shape the management structure of an implementing agency. This is a generic structure to be modified in individual elements, depending on the specific circumstances in a given country/institution.

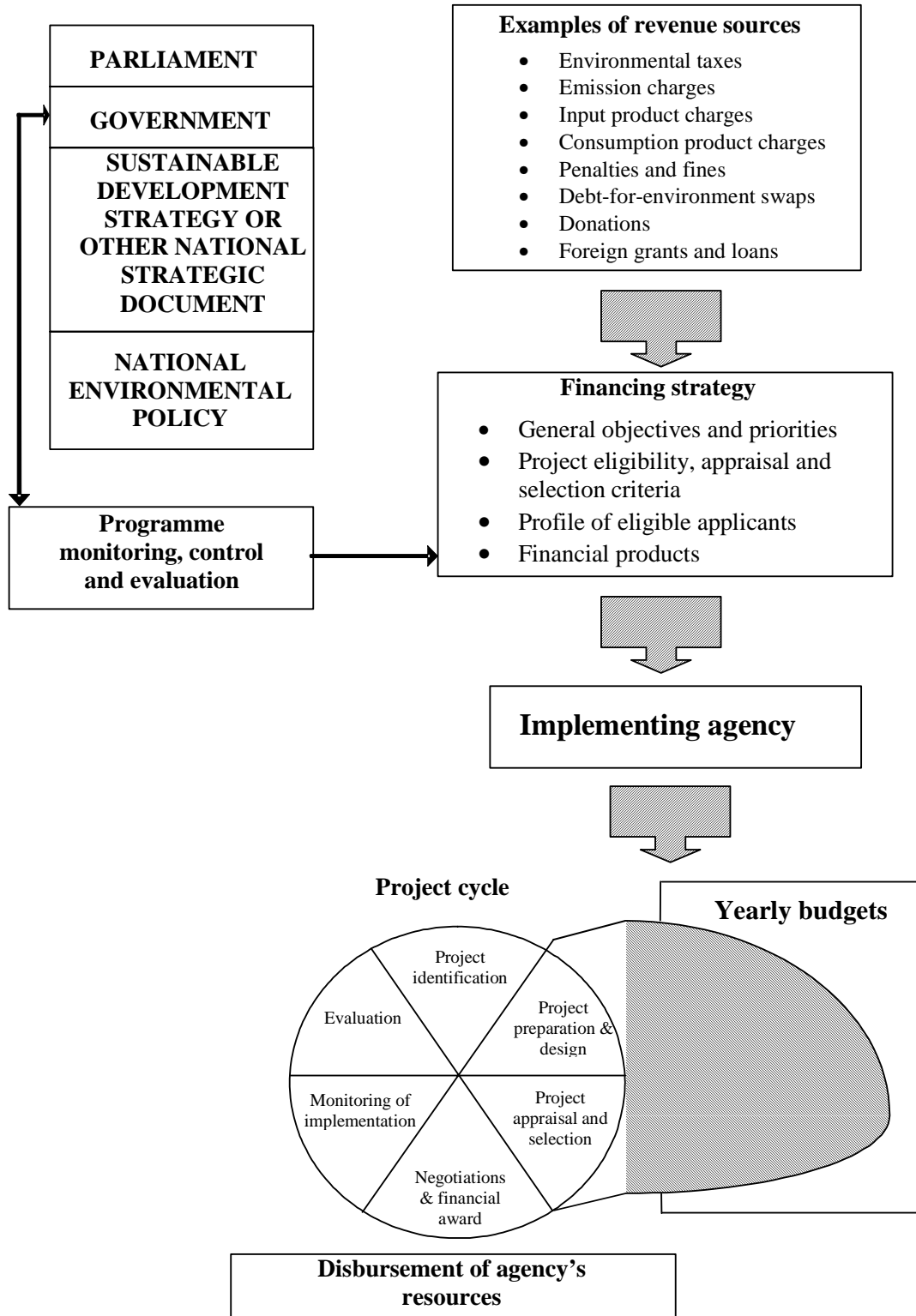
This chapter looks at the major stages of the project cycle. It is intended to provide managers of public environmental expenditure programmes with practical guidance in addressing problems and issues that occur at each stage of the project cycle as well as suggestions for possible solutions. It seeks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

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 comprises several major phases: project identification, appraisal, selection, financing, implementation, monitoring, and evaluation. While certain aspects are touched upon, project preparation and design are the responsibility of the applicant and are not the subject of this Handbook.

For the purpose of this Handbook, a project is defined as an economically indivisible series of works fulfilling a precise technical function and with clearly identified objectives from which it can be judged whether the project complies with the implementing agency's eligibility and selection criteria. A stage is a technically and financially independent part of the project that can be identified as operational in its own right (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 its project receives support from the agency.

Figure 3. Programme and project cycles



Overview of the main stages of the project cycle

The project cycle comprises several 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, which covers, as a minimum, information on application submission procedures, an application form with instructions on how to complete it, and criteria that projects should meet. This information package should be widely disseminated.

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

Project appraisal is the stage at which a detailed evaluation of those projects that have successfully passed through eligibility screening (pre-appraisal) is conducted. Such evaluation requires that the applicant provide additional information and data. 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 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 size of the projects. 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 than a threshold value.

During the **implementation stage**, particular attention should be paid to disbursement procedures. Support is provided for specific tasks and in principle resources should be disbursed only when these tasks are completed and receive agency approval. 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 – 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 environmental effects (i.e., the necessary cost-effectiveness indicator). 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 in Box 6.

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 careful design of both eligibility and appraisal criteria and procedures applied at each stage of the 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 require formal approval 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-intensive, it is essential that potential applicants be aware of all information needs 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 agency should also clearly list all the documents that need to be attached to the application. These documents may include: (i) feasibility studies in the agency-defined format, (ii) financial statements, (iii) environmental impact assessments, (iv) documents proving project co-financing, e.g., budgetary decision of the municipal council, and (v) other legal documents ensuring successful project completion and operation (e.g., various permits).

The procedures that ensure high quality and efficiency of the project cycle run by the agency should be valid for all staff. Staff competencies 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 and 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 to the success of particular projects. The friendly but professional attitude of

staff to applicants could further contribute to a healthy working relationship with applicants. When the performance of staff members is routinely and rigorously evaluated based on actual work results, there is no danger that such behaviour 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 agency needs to develop a decision flowchart, which should show the sequence of actions, actors responsible for them and time limits for each action. As a minimum, the flowchart needs to provide clear answers to the following questions:

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

Comprehensive and detailed explanations on these issues need to be provided in the agency's operational documents.

An example of a flowchart of decisions is provided in Figure 4. This example is based on the decision-making process in use at the Polish EcoFund. This flowchart presents 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 screened 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 not. 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 Fund's executive staff conduct a preliminary project appraisal (environmental, technical, and financial analysis). The Management Board provides the applicant with its 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 Council for a final decision. The Supervisory Council members discuss the project and make 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 a contract.

The relationship continues after the selection, through 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 needs to be set in order to induce staff discipline in processing applications and meeting strict deadlines as well as compelling the applicant to adhere to the time schedule. Applicants 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 Regional Environmental Fund, for example, screening of project proposals for eligibility takes about 2 weeks from the time of submission. The process after submission of the full application form through to the signing of a financial agreement with the applicant may last up to three months.

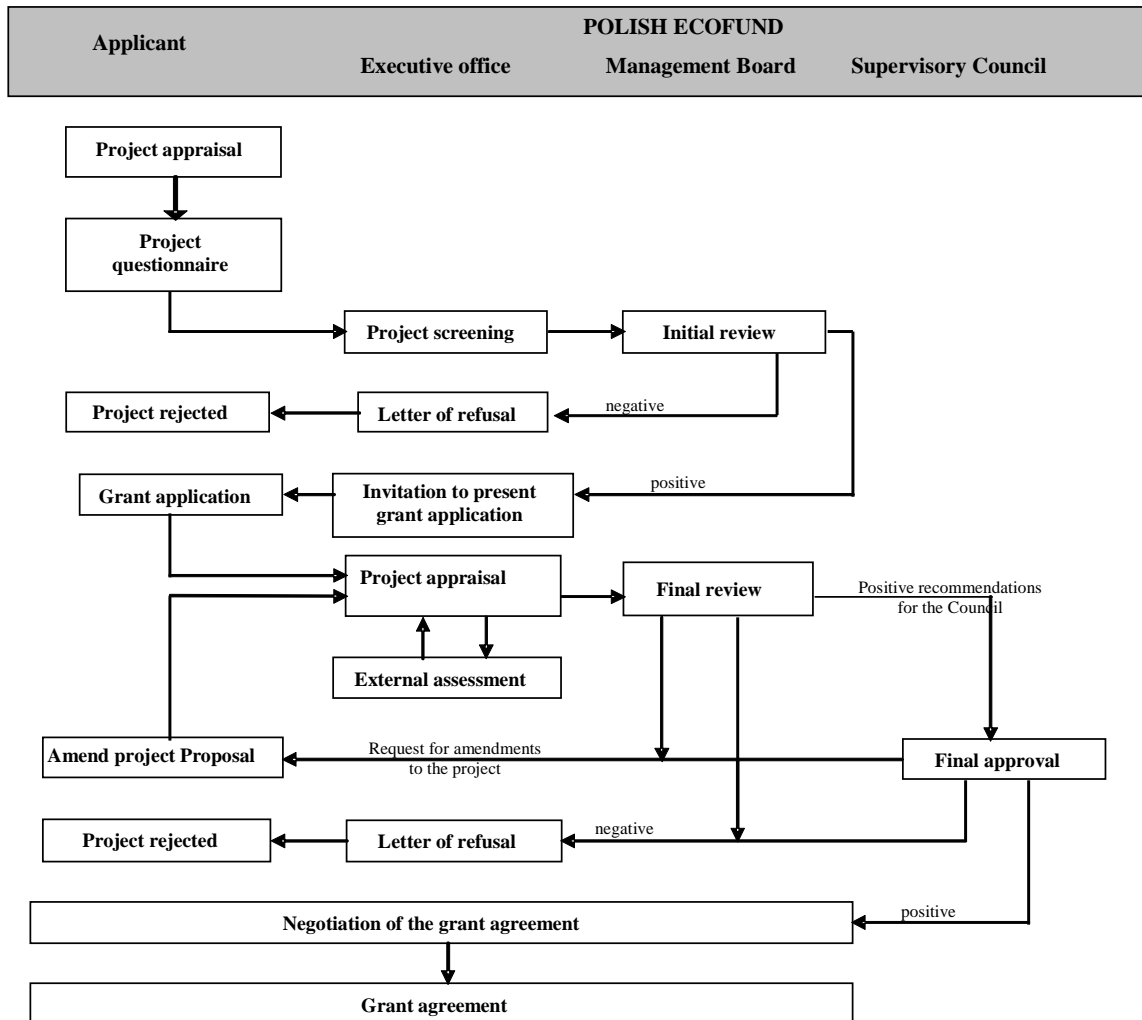
How to communicate with potential applicants?

The complexity of the agency's procedures 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 completing 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. Decision flowchart in the project appraisal process
Based on Polish EcoFund practices**



Direct contacts with project proponents 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 receive 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 can use the opportunity of meeting potential clients and seek their opinion on agency's requirements and make any necessary adjustments. Targeted visits to potential applicants from a specific sector or region could also help them obtain a better understanding of the financing opportunities the agency provides. Hot lines can be opened to respond to applicants' questions for clarification.

The main principle in communicating with applicants is that they all 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. 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.

Box 8. Information package for applicants

As a minimum, the information package provided to potential applicants should contain 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 complete the form (for large investment projects a two-stage application form may be introduced – a preliminary application form and an application form proper);
- framework conditions of the financial agreement between successful applicants and the agency;
- information on procurement procedures;
- decision-making flowchart.

Standard application forms reduce time to process applications and help staff more efficiently to check information that applicants provide. 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 complete it. 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 on www.kommunalkredit.at.

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 that will allow the agency to determine 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.

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 website, thus ensuring that the information is made equally available to everyone. 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 capacities 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 in the form of computerised data enabling the user to search for information by category 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 agency's involvement in pursuing a particular objective (priority), to follow the progress in the implementation of a project, and to estimate the workload 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., wastewater treatment plants and transfer collectors, energy savings, waste recycling, etc.) provides the basis for estimating the cost-effectiveness level typical of investment tasks of various kinds. Such data may be useful as benchmarks in determining the minimum expected cost-effectiveness indicators for new project proposals for the purposes of preliminary economic appraisal of projects.

The projects tracking database may co-operate 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 physical 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 built-in module options, with the participation of, and in accordance with, the suggestions of its users.

Box 9. Possible uses of a project-tracking database

- serves as a catalogue of projects
- allows quick and easy data and information searches by category
- helps prepare lists by various items (quantities, prices) and generates management reports
- helps track progress in the implementation of individual projects
- allows comparisons between expected and actual benefits from a project
- helps generate standard financial agreements
- helps generate financial tables and reports
- helps determine resource allocation (workload of individual staff members)

Outsourcing

Outsourcing of certain tasks can be another way to improve project cycle management efficiency. Outsourcing is an arrangement whereby the agency can enter into a contract with a supplier from outside the agency for the provision of goods and services previously provided internally. Outsourcing contracts should be awarded in a competitive bidding process. While governments have always purchased some goods and services externally, the last two decades have seen a movement toward broad use of outsourcing as a tool for public management.

Outsourcing has both advantages and disadvantages. The advantages 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 and technologies, better service quality, and 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, and the costs of outsourcing. Nevertheless, 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 performance.

In many cases, it is possible that a part 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 properly to size 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 is to be terminated at a known date;

6. relying on well-established experts to conduct, for example, audits or programme evaluations in order to enhance the accountability of the expenditure programme.

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. In addition to banks, consulting firms, and specialised NGOs can also be used as potential service providers.

Annex II.1 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 to identification of projects – **passive** and **active**. In this section, 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 set policy or determine the most important (priority) areas for support, but rather waits to receive applications. The extremely passive approach can only be recommended in the event the agency's competencies are very narrow (e.g., it finances WWTPs only) or if resources exceed potential demand. Usually, in this case, project identification is not the agency's task, but a product of a political process.

Alternatively, the agency can actively search for 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 based on the type and size of projects and their location, are discussed in detail further below. These approaches are based on the experience of the Polish EcoFund. The Fund distinguishes between:

- Individual (case-by-case) treatment for large (unique) projects of national significance, or at least of the greatest regional importance;
- Standard (open) competitions for numerous small projects of a 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

The easiest approach, here the agency identifies large and unique projects of particular significance for the country or region as a whole and ranks them according to the environmental benefit expected from each project.

After developing a ranking list, 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 accelerate considerably project preparation (documentation, obtaining permits, etc.). Another advantage of this incentive is

that the project owner knows upfront what financial assistance can realistically be provided by the agency. 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 the agency's available resources, the best solution would be to organise a competition. This approach allows the agency to select those projects that are most urgent, best prepared, propose the best technological solutions, and optimise costs. Therefore, standard competitions help increase project preparation. In order to be able to compare different projects, it is recommended that the agency develop a standard application form to simplify and guide the project design.

Well-defined, point-based 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, a jury can evaluate projects; project appraisal is then conducted based on the judgement of these experts through discussion and voting. The long-term experience of the Polish EcoFund shows the effectiveness of such an approach, as experts reviewing projects usually give useful comments that lead to an improvement in the project's quality.

It is important that the agency make **cyclical** (e.g., annual) announcements of competitions. Announcing the organisation of a competition early enough allows potential applicants better to prepare their projects and even to resubmit old project proposals the agency has previously rejected in a much better form. Thus, the quality of applications considerably increases compared to those prepared at the last minute. Such competitions, however, might significantly increase staff workload at certain periods and create strong pressures to meet deadlines. Therefore, it is recommended that 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 and other conditions it uses after a competition has run for 3-4 years. This assessment may reveal that some of the criteria and conditions might need to be changed.

Examples of thematic areas for which 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 10 000 – 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 the location of the project within the given country does not really matter.

Multi-year programmes

The third approach to identifying the best project opportunities is to develop long-term programmes. If the government has failed to do so, the agency should 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, is 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 co-operation with the authorities in the region concerned, including the best national experts. Programme preparation has the following steps:

- identification of major problems, including their scale and causes;
- specification of all projects that need to be implemented in order fully to address a given environmental problem or bring it into compliance with relevant 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, the total costs of addressing a problem are confronted with 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 10-20 most important projects rather than attempting to dilute funding across too many projects of more marginal significance.

The programmes the Polish EcoFund operates suggest that there may be times when the implementation of several projects with costs representing, for example, 20% of the total cost of all projects, yields 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, the business community, associations of municipalities, and other relevant parties. Once agreement is reached, the programme should go on to the regional authorities (or 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 first to prepare a **brief project information sheet** and then a detailed project analysis in the form of a **pre-feasibility study**, which would be used in the next stage to compare and select the best project proposals that the agency can fund.

Project preparation is the applicant's clear responsibility. The lack of well-prepared projects was one of the major failures of the centrally-planned economy, in which many projects remained unfinished and vast amounts of resources were simply wasted. In order to ensure the due and proper preparation of a project, the applicant needs to allocate sufficient time and resources to the project design at the beginning. Experience shows that in order to prepare good infrastructure investment projects, project developers need to spend on average about 6-10% of total project costs on project design. In addition, the presentation of 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 collect sufficient information enabling it to determine whether a project is eligible for support. As well as time-intensive, the collection, processing, and verifying of submitted information have costs for the agency. Particularly for investment projects, supplying information can also be expensive for the applicant. The applicant should not be burdened excessively with requirements for detailed technical and financial data. This should be done only after the agency has determined that the project is eligible for financing. Introducing a two-stage appraisal process can help in this regard.

The proper handling of applications during this stage requires:

- Choosing the application cycles and the appraisal process;
- Engaging in a dialogue with applicants.

Choosing application cycle and appraisal process

In order to avoid peaks in the application cycle, the agency may choose between two principal options: periodical and ongoing application processes.

Periodical application cycles are based on **competitions** with strict deadlines or time-bound windows under a specific programme. Applications submitted as part of a competition usually deal with similar topics and can be subjected to a common appraisal, ranking and selection procedure. That is why in such cases the pre-appraisal process can be omitted and a **one-stage appraisal process** can be used. When hot spots are used as an eligibility criterion, the preliminary application stage may be skipped.

With calls for projects to competitions, 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, project development takes time), the risk is that the agency will receive quite old projects instead of good ones. Another issue is the need to design the calls for projects very strictly in order to ensure that similar and comparable projects are obtained (e.g., wind projects after a year of wind speed

measurements, construction of WWTP – without sewer – serving 10 to 100 thousand population equivalents (p.e.). In addition, it is often difficult to improve an application within the same call. Further, the heavy workload (all projects arrive at the same time) can pose administrative problems within the agency. Given these restrictions and challenges, calls for projects are suitable only for specific measures.

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

The two-stage appraisal process saves both applicant and agency time and resources. 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 this measure falls to 10%.

Table 8. 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	Ongoing	Two-stage
Near market term loans	Ongoing	Two-stage

Engaging in a dialogue with applicants

The appraisal process should be managed interactively. Direct contact with applicants remains the best way to communicate and provide the applicant with clear answers to questions. As part of this information exchange, the agency should expect applicants to provide explanations on and justifications for the project's technical solutions and costs. Sometimes, in the process of clarifying different issues, particular suggestions on minor adjustments made by the agency may help improve a project. **Co-operation 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 entire process.

While engaging in a dialogue with interested applicants, the agency must be aware that it conveys information of real market value that may distort the relevant market and create unfair competition if applicants are not treated equally. Protectionism, political pressures and private sympathies should be avoided in communication with clients. Information should be made available to everyone on an equal basis and be provided in written and/or electronic form in order to pass it on to as many applicants as possible.

The Polish EcoFund experience shows that many projects have been “saved” by such a procedure, where normally, following formal rules, 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. Yet, help of this kind should strictly conform to the Fund's procedures aimed at avoiding excessive structural interference in (or even worse, the redefining of) a project. Excessive involvement of agency staff in the project preparation would imply the agency's authorship of a project and may raise doubts as to the objectivity of the appraisal process for such a project. Clearly,

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 some special 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.

such objectivity is not possible if the agency has participated in the project definition. In principle, agency staff can and should directly intervene when the technology proposed by the applicant is obsolete or known to cause more environmental problems than it aims to resolve. The multi-tier evaluation of the project with the involvement of agency staff, including Management Board members, facilitates the maintenance of a just balance between a reasonable extension of involvement 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 would provide 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 ISPA⁸ 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, the agency may receive requests to provide support for project preparation. The risk of providing such support is that it may be misconstrued by applicants as the agency's commitment to finance the project. **In principle, the agency should not provide project preparation support.**

If there is significant demand for such "project preparation grants," 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" project in another agency priority area. The fact that some projects have received grant support from the agency in the preparation phase does not commit the agency to actually finance them. Once such a project is fully developed, its proponent should apply to the agency in accordance with all procedures and requirements and undergo a full appraisal process.

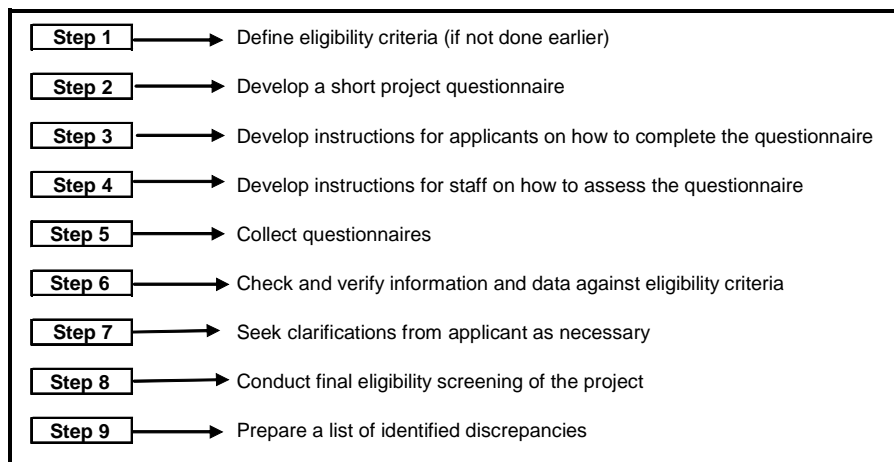
Eligibility screening (Pre-appraisal stage)

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.

⁸ Instrument for Structural Policy for Pre-accession – A financial instrument used by the EU to help CEE countries prepare for membership. Support through this instrument was provided in the area of environment and transport policies for the period 2000 - 2006.

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



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 type, project owner, type of expenditure).
- Compliance with the terms and conditions set by the agency to assign a given application to a particular programme. These can include, among others, indicators characterising the stage of project development, such as: the availability of a pre-feasibility study, selected technology, engineering design, construction permits, as well as sources of financing and the amount of support requested from the agency.

These are “**hard**” or “**threshold**” criteria that enable the agency to make binary (yes-no) choices. These criteria should be clearly and concisely formulated in order to avoid general statements from applicants. This technique means that if a project proposal fails to meet even one of these criteria, the project is rejected at this stage.

Some potentially good, but poorly 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 formal review stage, provided that project deficiencies are duly corrected. Instead, the agency can signal these revisions to the project owner so that the project can be resubmitted in the next application cycle.

In order to obtain the information necessary 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 on how to complete it. Examples of a standard questionnaire and instructions to applicants are provided in Annex II.2. These are tools in use at the Polish EcoFund.

As a minimum, the questionnaire should contain:

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

Agency staff begin the assessment of project eligibility by checking if the questionnaire is complete. The applicant should provide all required information in a concise but clearly formulated and understandable manner.

After all the necessary information is collected, agency 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 – applicants often present data on resources they plan to obtain from various financing institutions as if they were already awarded.
- In terms of environmental benefits – applicants present excessively optimistic estimates of benefits; these need to be corrected.
- In terms of engineering solutions – applicants claim unjustified effectiveness of the technology.

Before actual screening, it is useful to check whether the agency has already received other project questionnaire(s) from the same applicant and, if so, in which project area and what was the quality of this 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 the agency's eligibility criteria. The criteria are checked one after another and opinions formulated resulting in a list of gaps between the project's objectives and agency priorities. These may be subject to further explanations or be adopted as an end result of the screening. The final list of gaps closes the project screening stage. These discrepancies are assessed and the agency's management board makes a final review and decision on the project's eligibility.

The applicant should be duly informed about the result, regardless of whether a project is eligible or not. 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 the agency's **current rules for providing financial aid**.

Appraisal process

Those projects that have passed the eligibility test are then subjected to a detailed appraisal conducted using 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.

Appraisal is conducted on the basis of a full application form submitted by the applicant whose project has passed the eligibility test. During appraisal, the project co-ordinator should check the reliability of the estimates of environmental benefits, the feasibility of the proposed technology, and the credibility of the project budget. Appraisal comprises two phases. Phase one is when the agency engages in a dialogue with the applicant in order to better understand the project, to obtain clarifications, and to request missing information and documentation. In Phase 2 – based on the additional information obtained during the first phase – agency staff conduct full and definitive appraisal of the project.

During the first phase, the project co-ordinator evaluates the technical and environmental solutions proposed under the project. This evaluation is then presented to the management board for discussion (first phase of appraisal). This discussion may lead to yet additional comments and requests for revision. Board member comments serve as a basis for the co-ordinator to engage in a dialogue with the applicant in order to obtain clarifications and request amendments to the project, if necessary. The amended application then undergoes final technical and environmental evaluation as well as the assessment of the project's financial viability and cost-effectiveness (second phase of appraisal).

The results from the first phase of appraisal are summarised in a project sheet, prepared by the project co-ordinator with his/her comments on each criterion. The project sheet is then passed on to the management board for discussion. The project sheet from this first phase in use at the Polish EcoFund is similar to the project sheet shown in Table 14, which the Fund uses at the end of appraisal proper. The main differences between the two sheets are that (i) environmental effects during the first phase of the appraisal are considered preliminary (subject to verification after full appraisal is conducted); and (ii) there is no assessment of the implementation schedule and economic and financial analysis during the first phase.

This section looks at:

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

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 two parts: a **general data sheet** (containing meta-data and information and its format can be the same for all applicants) and a **technical data sheet** specific to the environmental areas the agency supports. Such a standard form also helps in the entry of data and information on each individual project into 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 (e.g., feasibility studies, environmental impact assessments, confirmation of co-financing).

Table 9 below presents an example of the possible contents of an application form. This form is at use at the Polish EcoFund (as provided on the EcoFund's website).

Table 9. 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 priority area supported by the project
5.	Project rationale and objectives
6.	Project description
7.	Environmental benefits
8.	Project substantive implementation schedule and financial plan
9.	Contractors
10.	Project sources of financing
11.	Project financial data
12.	Applicant current financial and investment liabilities
13.	Applicant declaration
14.	Annexes

The standard format builds on the information provided previously in the project questionnaire. Unlike the questionnaire, it allows for much 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 manner and scope in which the information should be presented. Instructions should include important definitions and explanations that enable the processing of information in a comparable form.

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

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

- Technical data;
- Financial data.

Information on the applicant

As a minimum, the information on the applicant required by the agency should include:

- Legal status of the applicant;
- Legal title to property and ownership of assets to be built with agency support;
- 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 the applicant's overall performance and managerial skills as an early warning of potential risks that might arise should the agency finance the project. If tender procedures (contractor selection) have been completed, detailed information on the procedures should be attached, including information on the selected contractor(s). All of these issues are discussed in detail in subsequent chapters.

Environmental data

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

Wastewater collection and treatment 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 into 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 as a result of 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 areas, nature reserves, urban waterways, etc.

In addition, applicants should be required to describe the current effluent levels 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 reduction 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 enable 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 contain information on the number of inhabitants in the area covered by the project, number of inhabitants connected to the sewer system, population equivalents from industry (in case of industrial wastewater), stormwater channelled to sewage, information on the arrangements for managing wastewater treatment sludge and other process by-products. Where projects concern **sewer construction**, the descriptions should be supplemented with a plan of the collectors indicating those sections for which the applicant requests agency's support.

In addition, applicants should be requested to provide a **technical implementation schedule**. For this purpose, project stages and phases should be clearly defined. If the agency is going to provide support for a specific project implementation phase, 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 the 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 the 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 project objectives 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.).

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 under implementation. This can also help reduce project costs.

Financial data

The project financial plan (including cash flow – schedule of investment outlays, forecasts of operating and maintenance (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 form). Payment documents and the dates of respective payments will then enable the separation of authorised tasks from others, while the revaluation coefficients introduced additionally allow for comparability and the calculation of total costs incurred. Thus, agency staff will be able to determine the average physical progress of all

authorised tasks in the project. This is important where the agency decides to establish an upper threshold on project progress that will make a project eligible for support from the agency.

Project financial plan

The applicant should provide detailed data on project **investment and O&M costs**, including fixed⁹ costs (such as office rent or amortisation of buildings and equipment already purchased, etc.) necessary to calculate different financial and cost-effectiveness indicators. **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 or for financial costs incurred by the beneficiary as a result of project implementation.

While the agency may accept the level of costs determined in a pre-feasibility/feasibility study, these should be verified and subsequently adjusted after the tender process is completed.

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

Table 10 presents a list of possible O&M costs data that need to be requested from the applicant.

Table 10. Possible O&M costs to be requested from the applicant

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								
Pollution charges and fines								
Taxes (e.g. property tax)								
Enterprise-wide costs								
Other (provide 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 provided services. If a project is capable of generating sufficient revenue to cover the O&M costs and generate a profit, it has a good chance of obtaining debt financing from commercial banks and other financing institutions. **In this case, the agency should plan to decrease the aid intensity for such projects.**

⁹ Fixed costs are those that do not vary with the level of production.

Revenue from operations should be presented for a time horizon at least as long as the period for which O&M costs have been estimated. For 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 flow for both the implementation and post-implementation periods. Table 11 below presents the main possible components to be considered in the cash flow calculations.

Table 11. Project cash flow

Project Cash Flow				
Revenue Sources		Years.....		
1.	Applicant own resources for investment			
2.	Investment credits and loans			
3.	Grants			
4.	Revenue from operations			
5.	Own working capital			
6.	Operating credits and loans			
7.	Other sources (please provide detail)			
8.	Total all sources			
Expenditure				
9.	Investment outlays			
10.	Operating costs (less depreciation)			
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.	Investment physical 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 repaid.

Sources of finance

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

Applicants should also be required to indicate if these resources are confirmed, committed, or requested. For those that are committed, the applicant should provide appropriate proof. If the applicant uses credits to cover project costs, 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 broken down by years or quarters depending on agency's requirements.

When presenting financial data some of the underpinning assumptions and parameters should be provided by the government or the implementing agency. These could include **input prices, discount rates, and 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, net present value, internal rate of return, etc. One main problem facing applicants is the choice of the correct 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 its **own financial situation**. Checking an applicant's general financial performance may help to detect potential risks related to future project implementation.

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

Annex II.3 provides an example of a full application form in use at the Polish EcoFund as well as an example of Instructions to applicants on how to complete the full application form.

Instructions to agency 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 that 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 databases, periodically revised, updated and differentiated by regions.

Even if the appraisal and selection criteria are ideal, the final result would not be optimal if the raw data are of low quality. One way to ensure good quality of the data and information obtained from applicants is by hiring well-qualified staff with sufficient knowledge in their respective fields. 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 on par with private sector financial institutions can help increase the stability and quality of agency staff.

Using consultants

In particularly complex or controversial cases, the agency could use the services of **external experts and consultants**, whose advice could be of great use in resolving a technical or financial problem related to a given project or as another source of knowledge for the agency when similar applications are submitted. While such external advice provides the agency with additional arguments upon which to base decisions, this does not release agency staff from their responsibility for making the 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 stemming from the fact that these same consultants could use their

knowledge of the agency's requirements and procedures to help other applicants develop projects for submission to the agency. In principle, it is not a problem if applicants use such consultants to 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 to the agency's criteria and obtain a high ranking for the project, thus increasing the chances for financing a project that may face problems in the implementation phase.

In order to avoid such situations, the agency should, at a minimum, sign contracts with such consultants including a clear provision prohibiting them from providing services to potential applicants intending to submit projects to the agency for at least 2-3 years after the consultants' last contract with the agency. Obviously, while it is not always possible to identify such cases, at least the agency can take legal action against consultants that have been found to be in breach of their contracts.

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 (similar) projects, they can help reduce the discretion of the management board in selecting projects for financing.

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, however, various techniques exist – such as cost-benefit analysis (CBA) or multi-criteria analysis (MCA) – that could, theoretically, enable any project to be compared to others. 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 for application at a higher, more aggregate programme level than at the project level. Because of the specific character of environmental infrastructure investment projects, simpler techniques, such as *cost-effectiveness analysis*, should be used to compare projects within topical baskets (e.g., wastewater treatment plant project basket, sewerage system project basket, etc.). Cost-effectiveness indicators measure the value for money and are best applicable when environmental effects are homogenous across alternative solutions or projects.

Two dimensions of project appraisal exist: **economic efficiency** and **financial viability**, which implies that financial analysis (for judging financial viability) and CBA (for evaluating economic efficiency) should be applied.

In CBA discounted benefit and cost streams are compared. If benefits outweigh costs, the investment is economically efficient and could be supported using public funds. If not, the investment should be abandoned. The CBA takes into account a broad spectrum of costs and benefits (i.e., costs and benefits accruing to society as a whole). Note that it is best not to apply CBA to projects that simply respond to mandatory legal regulations. Due to the nature of the water supply and wastewater management sector, investments in these areas cannot be abandoned as municipalities, utilities and enterprises must meet mandatory environmental standards: they must implement these investments in order to comply with regulations. Therefore, the logic of CBA is broken. The investment has to be undertaken even if the costs outweigh benefits. Investors can only blame politicians for adopting too stringent environmental standards.

In this context, the question of economic benefits outweighing economic costs for each investment is not relevant. When the issue is to identify the lowest cost of meeting environmental standards, the 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 CEA¹⁰.

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 for reasonable comparisons.

In addition, the agency may introduce numerical scores and weights that could help convert different variables into comparable units and aggregate them into a uniform and unambiguous indicator to be used in ranking comparable projects. Different options and algorithms for calculating such indicators are possible.

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, it is the cost-effectiveness indicator that is used as a key criterion in ranking projects as it integrates both the 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 project selection).

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 discretionary practices 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 for agency staff and the introduction of point values for each criterion.
- Discretion in assigning weights should also be limited, through point values or specific guidelines.

¹⁰ This procedure is used by some of the Polish Funds: the EcoFund, the Regional Fund for Environmental Protection and Water Management in Krakow, and the National Fund for Environmental Protection and Water Management with respect to projects to be financed by ISPA.

- Criteria should be not too numerous, unambiguous, and, in principle, uncorrelated.
- Criteria (including environmental, technical, financial, and economic) should be state-of-the-art in the respective field.
- Scores should be meaningfully aggregated into a single indicator.
- Assumptions used in forecasting certain unit costs and rates should be standardised. In order to ensure comparability and integrity, the agency should require the use of standard assumptions and formulas.

In addition to the three major criteria (environmental, technical, and financial/economic), the Polish EcoFund has also 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 WWTP projects on lakes or coastal waters is assessed. There are two options for setting location criteria: one in relation to the distance of the pollution source to the body of water and the second case in relation to the type/class of the receiving body of water.

Environmental and technical criteria

The criteria the agency uses to assess the environmental and technical qualities of a project should be designed in a way that enables the project's environmental impact after its implementation to be determined. Three major sub-criteria are discussed, namely: magnitude of the pollution source, technical scope of the project, and an assessment of project's potential to achieve its stated environmental effects.

a) Magnitude of the pollution source

This is the primary parameter indicating the project 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.

An assessment of the magnitude of pollution sources is based on the amount of wastewater planned to be treated in a wastewater treatment plant, amount of wastewater to be collected by sewers, or the population equivalents served by a plant or sewerage system. Another quantitative parameter that may be used is the degree to which pollutants load is expected to decrease.

b) Technical scope of the project

The magnitude of the environmental effects to be achieved depends on the technical scope of the project. In water 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 treatment level of wastewater);
- 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. Clearly, the greatest effect will be achieved when a new WWTP or sewerage system is built. Such projects would receive the highest scores and also place high in the rankings.

The scope of a project is the most important – though 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 defined in an unambiguous and measurable manner. An example of another 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 waste generated in wastewater treatment, i.e., sludge management. Projects that propose as part of sludge treatment not only de-watering, but also further waste processing (e.g., preparation for use with the addition of lime or drying), would receive the highest scores.

c) Assessment of potential to achieve stated environmental effects

The reliability of projections – as stated in the application – for a project's environmental effects that would be achieved once implementation of the project is complete. In many cases, such installations as wastewater treatment plants do not reach their peak capacity immediately after starting normal operations. 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 toward solid organisation of the investment process and to implement the project in as short a time period as possible.

**Table 12. Example of technical and environmental criteria
Based on Polish EcoFund example**

No.	Type of criterion	Number 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 function*)	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 sludge management</u>			
	- Preparation for natural disposal		10	
	- Minimisation of sludge volume		5	
1.4	<u>Community's level of contribution to sewerage after project completion</u>			
	- Over 70 %		20	
	- 40 - 70 %		10	
	- Below 40 %		0	

* - Wherever "assessed from function" is indicated, points will be assigned from a mathematical function showing the relationship between the size of the pollution source and the scale of the technical response proposed. The curve is constructed based on theoretical considerations or experience (see Annex II.4 for an example of such a function).

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 of wastewater, investment cost per population equivalent, the cost of constructing a meter of sewer network, etc.

A practical and widely tested method of calculating project costs is comparing selected quantitative costs of different tasks against **reference values (benchmarks)**. 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 previously implemented projects using agency support.

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 analysis is best applied when projects produce homogenous environmental effects. Calculating cost-effectiveness requires the estimation of investment expenditures, operating and maintenance costs, and the environmental effect. The cost-effectiveness indicator is the ratio of costs to environmental effects. The lower this cost, the better, as less public money is spent on purchasing the unit of environmental effect.

Environmental effect indicators

Different indicators exist to measure project effects: **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, such as N and P) to be removed, volume of treated wastewater, inhabitants served).

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 producer-reported parameters. Information on the actual changes to the environment can be found using such indicators as changes in the classification of the receiving body of water or more biological measures, such as the 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; instead, it provides 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. For municipal waste projects, these measures are almost completely equivalent. In the case of different sewerage systems (sanitary versus mixed system), a discrepancy will exist between the volume of wastewater and two other indicators (number of inhabitants and pollution load). If a system also serves industry, a discrepancy will exist between the number of inhabitants, the volume of wastewater, and the pollution load. In this case, another measure of environmental effect is recommended, namely pollution load expressed in population equivalents (p.e.).

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

For the purpose of calculating cost-effectiveness, indicators of environmental impact are recommended.

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 turn, are divided into unit investment costs and unit operating costs. On the other hand, two methods exist to calculate the

dynamic indicators, namely by calculating the unit annual cost and dynamic generation cost of investments.

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 value of the investment over the entire project life. The advantage of static indicators is that they are usually more precise, since assessing future costs is always subject to uncertainty and possibly miscalculated. As such, static indicators should be used along with dynamic indicators. In contrast, dynamic indicators are 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 a lower 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 in which the installation's full capacity is reached – the problem of a lower environmental effect in the years preceding the attainment of the 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.

Experience shows that unit investment cost (UIC) is one of the most common indicators used by the environmental funds in CEE and EECCA to calculate cost-effectiveness. This is a simple ratio between investment expenditures and an environmental effect that is generated in the first year after investment completion. This indicator has a number of drawbacks and should not be used in professional cost-effectiveness analyses. The unit operating cost is the ratio of total annual operating costs divided by the environmental effect. The formulas for calculating these indicators with a description of their respective advantages and disadvantages are provided in Annex II.4.

Dynamic indicators

There are two major dynamic indicators discussed in this section: unit annual cost and dynamic generation cost. Unit Annual Cost (UAC) allows the linking of investment expenditure and O&M costs. UAC is calculated as the sum of Annualised Capital Cost (ACC) and annual O&M costs (the annualised cost of a project or AC) divided by the average environmental effect expressed in physical units. This approach is used, for example, by the Polish EcoFund. Unit Annual Cost is a good indicator that in most cases produces a ranking of alternatives that is consistent with the true cost-effectiveness of alternatives. This is true when there is a uniform distribution of the environmental effect across alternatives. UAC, however, fails to account for the distribution of environmental benefits over time.

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.

Dynamic Generation Cost (DGC) is the ratio between discounted costs and discounted benefits. It is a dynamic indicator used by the Polish National Fund to conduct economic appraisals of ISPA investments¹¹. This indicator has a structure similar to the cost-benefit ratio used in CBA. The benefits, however are not monetised, but instead are expressed in physical units.

DGC is the measure of cost-effectiveness that has all the advantages of the unit annual cost and, in addition, is sensitive to changes in the distribution of the environmental effect over time. In fact, DGC is the best proxy of long-run average cost. This is an important feature that is very useful in designing tariff policies and checking whether a utility respects the Polluter-Pays Principle. These dimensions are very important for all IFIs and the EU Commission. A simple model for calculating the DGC, with instructions for its use, is attached as a CD-Rom to the Handbook.

A more detailed discussion of these two dynamic indicators with their formulas and respective strengths and weakness is presented in Annex II.4.

Box 10. Approaches to calculating cost-effectiveness indicators

Static indicators

Unit investment cost, UIC - ratio 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 the neglect of O&M costs. Hence, it produces a ranking of alternatives that is not consistent with true cost-effectiveness of alternatives. Engineers appreciate UIC, as technical designs contain all necessary data, making the indicator unambiguous.

Unit operating cost, UOC - ratio of yearly operating costs to an annual environmental effect expressed in physical units. This indicator is much closer to 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 annual cost, UAC – ratio of annualised 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 on 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 - ratio of discounted stream of costs and discounted stream of environmental effects measured in physical units. This is an ideal indicator, as it gives both a consistent ranking of alternatives and proxies the long-run average cost. Hence, it can be applied in cost-effectiveness analysis as well as in 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 whether public support is needed. This requires a comparison between overall expenditure (irrespective of source of financing) and environmental effects (benefits).

¹¹ DGC is also used by most development banks (see, for example, ADB, 1999), although each institution has a different name for it.

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 may support projects that are commercially viable.

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

In order to compare different investment opportunities, future cash flows are discounted 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 for a project implies that the project can generate more cash than is needed to service 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.

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 agency should provide the appropriate discount rate, which **could be determined in relation to alternative investments with a low level of risk (e.g., the 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 of the discount rate is provided in Annex II.5.

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.

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% in order to establish the level of IRR above which a project may be considered as commercial.

When calculating financial indicators, constant prices should always be used, that is 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 points and final scores are determined.

The example in Table 13 (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 the project's financial viability. In addition, the 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 13. Economic criteria in use at the Polish EcoFund

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

The ultimate aim of appraisal of a project is to convert criteria against which the project is assessed into point values that are then summed up into a single number used in the ranking list. The criteria that enter the ranking list are also called selection criteria. The criteria may vary in their detail, ranging from simple yes/no questions to more detailed and graded criteria depending on the degree to which the criterion is met (e.g., the extent to which a certain environmental effect is to be obtained).

In addition, these criteria may be assigned weights to 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 project's place on the ranking list.

The package of appraisal criteria and their respective points values presented in Annex II.6 are based on the Polish EcoFund 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. Yet, some of its elements may require modification (replacement, expansion, etc.) in relation to different types of projects.

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 staff will need guidance on how properly to implement it. Therefore, the agency needs to develop detailed, unambiguous, and precise instructions to staff on interpreting each single criterion and parameter; this will ensure a smooth and transparent appraisal process understandable to all.

In addition, the agency needs to decide if the appraisal, ranking, and selection criteria will be published or designated for use by agency staff only. It is not recommended that detailed information on the point-based assessment system be made available to any parties outside the agency.

Clear regulations for handling applicant claims and appeals should also be developed. Strict application of regulations should be required from all staff. The nature of the appraisal process essentially demands a system of internal and external audits. These checks are needed to ensure the precise application of appraisal rules and procedures.

In addition, the appraisal process should remain free from government interference or attempts to change the order of projects on the ranking list developed by the agency professional staff. Instead, they should provide the agency with sound, transparent, and rigorous appraisal criteria and rules and monitor their application.

A project sheet summarises the results of the appraisal process. The responsible employee at the agency (project co-ordinator) 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 14. This project sheet is then presented to the Supervisory Council for decision on granting support to the project.

Table 14. Project sheet in use at the Polish EcoFund

Project sheet		
	Agency priority area	
	Responsible employee (project co-ordinator)	
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 support	
10.	Environmental effects	
11.	Origin of the equipment supplier	
12.	Implementation schedule	
13.	Results of experts' opinions	
14.	Sources for covering of costs	
15.	Economic and financial analysis of the project (financial viability of the applicant, cash flow analysis)	
16.	Project co-ordinator's opinion	

Evaluating applicants

Apart from conducting a detailed appraisal of the project, and in order to determine an 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 that might undermine successful project implementation.

Evaluation of applicants requires the assessment of two major issues:

- Institutional capacity of the applicant to implement the project with a major focus on legal status and ownership titles to assets;
- Financial viability of the applicant with a major focus on 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 – legal status, ownership of assets, degree of autonomy, scope of responsibilities, nature of the constitutional charter, and legislation that regulates performance;
- Previous experience of the applicant in 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, hiring, 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 the applicant's fiscal balances;
- Possibility to fund operating expenditure from user charges, fees and taxes or through earmarking;
- Ability of municipality effectively to adjust its expenditure budget 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 an applicant's capacity is **legal status**. This issue is of particular concern as it defines the applicant's capacity to enter into legally-binding contractual relations or to incur debt. In complex infrastructure projects, the borrower, the owner of assets, the construction contractor, and the equipment supplier are often different legal entities. Therefore, it is of paramount importance for the agency to clarify from the outset who exactly will sign the financial agreement, and, if a loan is involved, who will pay back the debt.

Financial viability of the applicant

The main purpose of evaluating an applicant's financial performance is to ensure that the applicant will remain a reliable partner throughout the lifetime of the project. In addition, when the agency provides aid 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 applicant's financial viability, the agency can assess whether the applicant really requires public aid to implement the project or could use 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, and any auditors' statements;
- Applicant's ongoing liquidity to meet current obligations and ability to service and repay debt from operating cash flow;
- Applicant's ability to maintain an investment grade credit rating;
- Comparison of capital structure and financial position relative to comparable applicants.

Applicant creditworthiness

If loans are involved, the most important part of the financial viability analysis of the applicant is the assessment of **creditworthiness**. In the environmental infrastructure sector, municipalities are the major clients. In assessing their creditworthiness, the implementing agency can perform 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 is done, for example, by the Austrian Kommunalkredit Bank.

In addition, the most common methods of securing debt used by public implementing agencies are: guarantees, collateral, and 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 its contractual obligations.

The guiding principle for collateral policies adopted by the implementing agency with regard to municipalities is that the **collateral should be safe but flexible**. Currently, it seems that 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.

More recently, however, a number of CEE countries have begun accepting more liquid forms of collateral; for example, the agency could be granted the right to make direct withdrawals from the municipality's accounts in order to cover loan payments due. This **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 increasingly used world-wide is the **intercept provision**, which 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 rate of arrears in 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 11. 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 into account external factors affecting its budget revenues and expenditures. The Fund conducts an analysis of the budget forecasts for the requested financing period, and if such forecasts are considered unrealistic, the Fund requires additional clarifications and makes appropriate adjustments. Then, these adjusted forecasts serve as 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 financing period prepared on the basis of the current accounting period data.

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

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 surety¹² and bill of exchange backing by another 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 a 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, for a fee, to conduct this procedure for the agency.

¹² 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, the agency selects the projects highest on the ranking list for financing. 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 proper level of assistance is not an easy and straightforward process. It requires a political consensus of all major stakeholders, including, among others, industry lobbies and municipal associations. The contribution and participation of experts are particularly important as they can provide robust arguments to politicians to help make final decisions. Needless to say, a detailed study of the real demand for subsidised financing (versus other sources of financing) should precede any decision; the study should focus on the sectors, regions, project types, and project owners that need subsidies from this particular scheme as well as the eligible costs that the agency will cover. Based on the findings, aid intensities should be considered in a manner that would produce a leveraging effect of the resources the agency disburses.

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

- Definition of eligible costs;
- Form of subsidy – lump sum versus percentage of 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. Yet, no single definition of eligible costs exists. OECD and EU have defined eligible costs in state aid which are binding for their respective member states. These definitions could be used by transition economies as benchmarks.

Box 12. 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 standards 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 small and medium enterprises (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 Pollution and Abatement (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 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

Subsidies can be provided either as a lump sum of eligible costs or as a percentage of these costs. The exact cost of environmental infrastructure projects is difficult to calculate up-front. This is the reason why, sometimes, 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 defined. 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 beneficiary need;
- Aid intensity as a share of investment costs;
- Aid intensity as a module system;
- Aid intensity in a bidding procedure (auction type).

Aid intensity reflecting beneficiary need

In this case, the agency calculates aid intensity as part of the appraisal process based on 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.).

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

Aid intensity as a share 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. It works with averages, however, and does not reflect the beneficiary's real financial situation.

Aid intensity as a module system

This system implies that starting from a given base level intensity the applicant can obtain higher intensities by taking additional actions, such as improving its environmental performance or adopting good management practices. These higher subsidies could be expressed as a percentage of the project eligible costs or lump sums (money per meter, etc.). This system is very flexible and allows the state to introduce new objectives or to accelerate certain developments. The risk in this approach is that this system favours 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 WWTPs 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 bidding procedure (auction type)

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 obtain 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 a specific group of projects (see Box 13 on wind turbines). This mechanism creates the risk that rich municipalities receive support first, which might not always be justifiable from an environment perspective.

This system is best used for similar projects that have a large degree of technical or economic comparability.

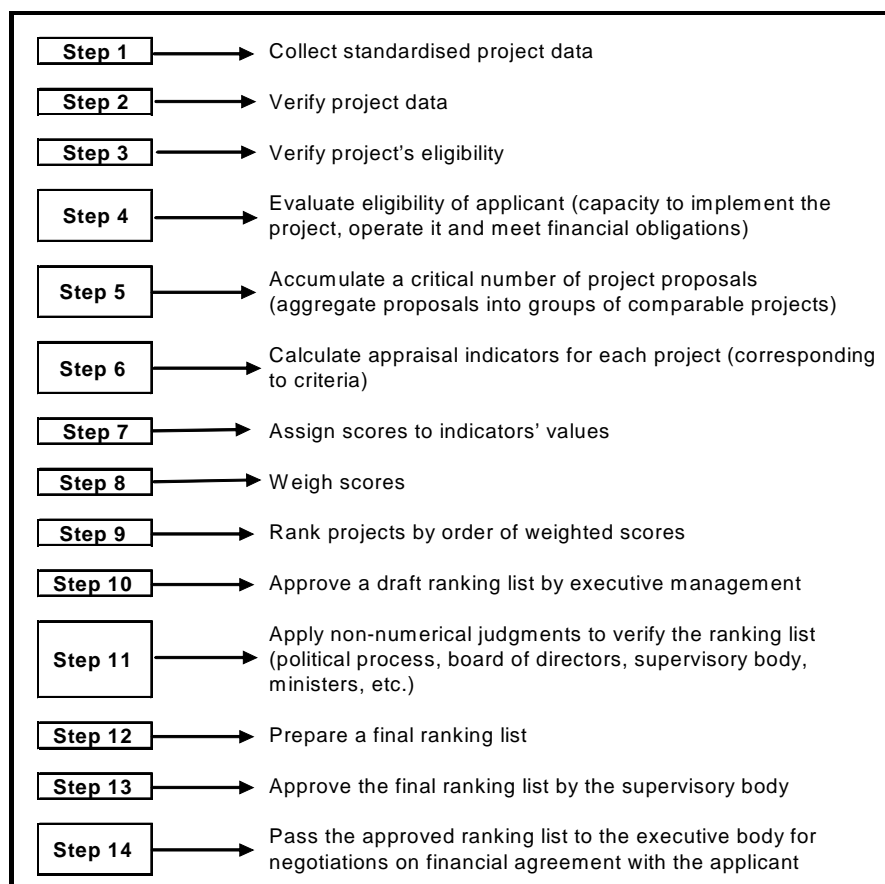
Box 13. Auction for subsidizing wind turbines in Austria

In 1997, as part of its programme on energy efficiency, Austria decided to open a financing mechanism to support project owners willing to build wind turbines. After discussions with experts, lobby groups and ministries, the aid intensity for such projects was set at 30 % of eligible investment costs. In 1998, an auction for distributing subsidies to wind turbine projects was organised and a fixed amount of money (approximately € 2.5 million) was put out to public tender. Application forms were provided exclusively in an electronic form and many parameters (such as the calculation of operating 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 could vary its data (such as costs, return on investment) in order to optimise the aid intensity requested. As a result of this system, the requested aid intensity decreased within 2 years from 30 % (which everyone considered to be necessary) to an average 7 % of investment costs.

Logical framework of the appraisal process

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

Figure 6. Project appraisal logframe



Summary and guidance for the implementing agency

Project appraisal constitutes the main function of any implementing agency and the core of project cycle management. 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 conducted by professionally competent staff, who are held accountable for decisions.

For complex investment projects, a two-stage appraisal is recommended. The first stage is eligibility screening and the second stage is the appraisal proper. Only projects that 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 need to be provided in standard application forms. Detailed instructions to both applicants on how to complete the forms and to staff on how to use and interpret the information in the appraisal process must be prepared. The agency needs to develop an optimal package of eligibility (threshold) criteria. It is recommended that appraisal criteria (environmental, technical, financial, and economic) be simple, yet robust. Cost-effectiveness 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 assess financial viability) and cost-benefit analysis (to evaluate economic efficiency). As cost-benefit analysis is not strictly applicable to

projects that simply respond to mandatory legal requirements and standards, the proper question is not whether benefits exceed costs, but rather what is the lowest cost for which regulated entities can meet the legal requirements. Cost-effectiveness analysis can provide this answer. In the appraisal of water sector investment projects, it is recommended to use a combination of financial and cost-effectiveness analysis. Different approaches are used to calculate the cost-effectiveness indicator, among which 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 that 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 aim 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 funds for environmental investments.

CHAPTER 3 IMPLEMENTATION

Project implementation is the last stage of the project management cycle. Its major components include:

- implementing agency commitment to support a selected project;
- negotiations with a beneficiary over the financing terms and project implementation programme;
- actual contracting;
- financial transfers to the beneficiary and monitoring;
- evaluation.

This chapter looks at the different stages of the project implementation 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 from the agency is formally not part of the project cycle, as this is the applicant's responsibility, the results of the tender procedure have important implications for the agency's final decision on whether to support the project. Tendering is discussed in order to shed some light on issues that are of direct relevance to the individual components of the implementation stage.

After-project evaluation

Commitments

Once a project has been selected for financing, the agency sends a **commitment letter** to the applicant. The commitment letter is not 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 and void.

In order to prevent applicants from manipulating project scope and costs 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.

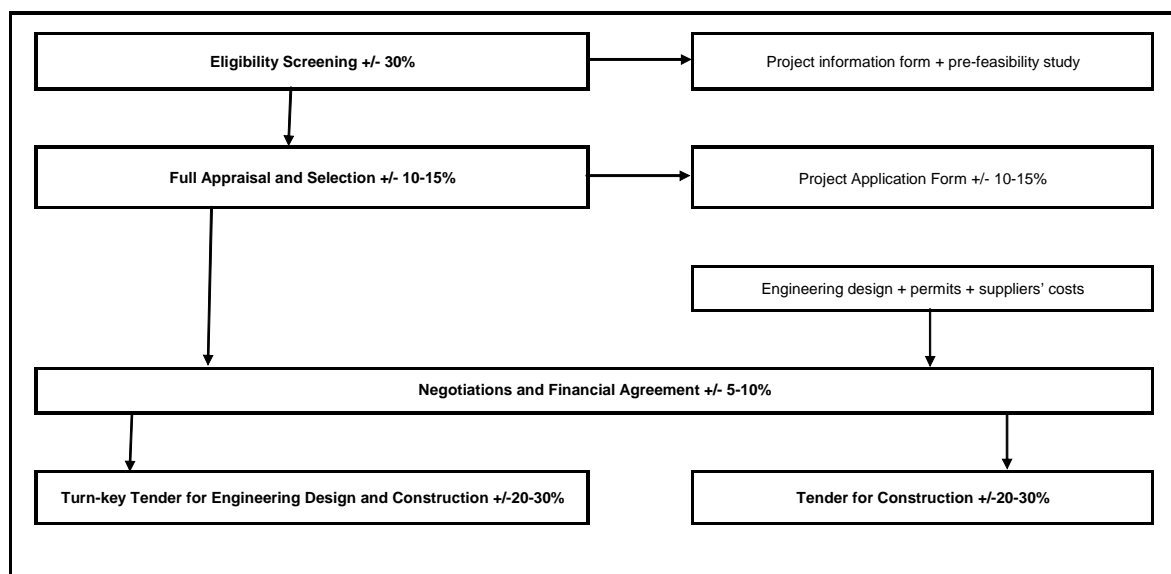
Issues related to procurement

Usually, after a project is selected for financing, and the applicant has obtained agency commitment to support the project, the applicant proceeds with full engineering design for the project and seeks price estimates from potential suppliers. Equipped with data from the design and estimates, the applicant enters into negotiations with the agency. Therefore, most often during negotiations 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 the 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 for that matter, expected environmental effects do not change or at least do not differ significantly from those stated in the application form?

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 the applicant originally claimed 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 project's rank in the list developed during the appraisal phase.** Figure 7 provides the margin of error in estimating project costs throughout the project cycle that could be used by agencies as a reference in project assessment. This comparison allows the agency to learn from this experience and better adjust its procedures.

Figure 7. Decreasing margin of error in project cost estimates throughout the project cycle



As seen in Figure 7, the closer a project is to the financial agreement, the smaller the margin of error. This margin can change (increase or decrease) during the tender procedure, when real costs, prices, and environmental effects finally become known.

The explanation for this decreasing margin of error is pretty straightforward. During eligibility screening and full appraisal the applicant works with rough cost estimates based on pre-

feasibility/feasibility studies and preliminary designs. After the applicant has obtained an initial commitment for support from the agency (at the end of the full appraisal and selection stage), it can then produce a complete engineering design and obtain estimates from suppliers. Using this more precise information, agency staff will then re-calculate the major cost-effectiveness indicators. If no major change in project's place in the ranking occurs, the agency invites the applicant to negotiations. If an agreement is reached and the contract signed, the beneficiary can commence the tendering of the project. These indicators should once again be re-calculated after procurement results are known. Even if a contract already exists, the agency should not make any financial disbursements to the beneficiary if after re-calculating the cost-effectiveness indicators the project's place in the ranking has changed.

Procurement is the procedure by which the beneficiary selects contractors to implement the contract. **Tendering is the beneficiary's – and not the agency's – responsibility.** The role of the implementing agency in the public procurement process is to ensure that beneficiaries select contractors and suppliers and work in compliance with national legislation on public procurement (or international, as appropriate). Hence, the agency should strictly enforce and ensure compliance with the procedures and rules of national public procurement laws.

In principle, when the beneficiary tenders more complex projects, it could be useful for the agency to obtain the right to sit as an observer on bid evaluation committee in order to ensure that the beneficiary observes procurement rules and that the most cost-effective engineering solutions are selected. As a minimum, however, the agency should require the beneficiary to provide proof that the procurement process has been conducted in line with the law. Depending on the size of the project, the agency may require that the beneficiary produce estimates from different suppliers or the results of the tender (whether open or restricted). In addition, the agency may require to be consulted on the preparations of the tender documentation for the project in order to ensure that procurement is conducted in a proper manner.

The tender for construction is the final stage of this process. For certain projects, however, a turnkey¹³ 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 the financial agreement are based directly on the results of the appraisal process.

In some cases (for instance, if the applicant has also applied for financing from a different source), the beneficiary 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 the financial 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.

¹³ Turnkey is a method of construction whereby the contractor assumes total responsibility for the project – from design through completion. Although this might sound like a good way for the agency to share the risk for project implementation with the beneficiary, this does not mean that turnkey projects should be exempted from the scrutiny of robust appraisal, as the agency's role is to ensure that environmental objectives are achieved, and not simply recuperation of funds.

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 procurement, actual costs differ from those laid down in the financial agreement in either direction – they could be 20-30% lower than the costs fixed in the contract or higher.

Different methods exist to deal with such differences in costs before and after tendering. One of the best approaches is to fix the aid level either in absolute amounts (e.g., Euro 1 million) or as a share of the total eligible cost (e.g., 50%) that the agency will support. Most of the well-performing agencies (Polish EcoFund, the Polish Krakow Regional Fund, Austria) use this practice and 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 aid 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, because otherwise, this would imply that agency staff have not been able to detect risk and problem areas in the project at earlier stages and they do not know the market for environmental goods and services well. 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 project appraisal** and only costs based on this project scope can be covered by the agency.

Box 14. How to deal with differences in prices before and after tendering

- Fix two limits for aid levels – as a percentage of the total project costs or in absolute terms. Apply the option that is more favourable to 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 that the agency can only cover costs based on this project scope.
- 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 the beneficiary tenders more complex projects, obtain the right to sit as an observer on the committee assessing the bids in order to ensure that the beneficiary observes procurement rules and selects the most cost-effective engineering solutions. Require that the beneficiary consult the agency in preparing the tender documentation for the project.

While these solutions may not fully solve the problem, if the contract contains a clause linked to costs identified in the original project scope versus tender costs, the problem could at least be 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 body should

inform the supervisory body of such changes before a final decision on disbursement of aid to such a project is made. In general, staff should have a limited scope for discretionary power.

Negotiations

Negotiations between the agency and applicants that have received a commitment letter are usually based on the information provided in 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 to eliminate potential misunderstandings. The agency staff responsible for the project appraisal should prepare a checklist of potential 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 provide sufficient time to prepare for the negotiations. An example of such a checklist is provided in Box 15.

Box 15. Checklist of potential issues for clarification during negotiations

During the negotiations with an applicant, agency 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 planned costs, and financial schedule of the project;
- agree on the exact amount of financial support to be 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, and 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 technical 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.

After negotiations are successfully concluded, a memorandum should be drawn up, agreed upon, and signed by all parties. This memorandum will further constitute the basis of the agency's final decision. The agency's management board should discuss the memorandum, along with the results of the environmental, technical, economic, and financial assessment of the project. If the final decision is positive, the agency can proceed with the preparation of the financial agreement (contract). If a project is rejected 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, clearly stating the reasons for rejection. In addition, the agency should allow for sufficient time (e.g., 15 days) for (unsuccessful) applicants to file 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 filed with the agency). The agency should keep record of all exchanges of correspondence with such applicants.

Having a very detailed implementation and financial plan with a clear definition of the activities that the agency will finance and will be invoiced separately is extremely important and should constitute the focus of the negotiations.

The agency's decision to provide support to a particular project should include a specified time period during which the decision remains in force (ranging 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 objective reasons exist 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 the contract is signed with the beneficiary. In addition, the Fund also requires that the beneficiary present the contract between it and the contractor, as well as a project implementation programme signed by the contractor.

Box 16. Step-by-step preparation process for negotiations

- Set a date for negotiations with the applicant
- Identify agency staff that will 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 involved
- Discuss the memorandum at a meeting of the Management Board
- For positive Board decisions – inform the applicant; for negative decisions – 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 contracting stage comprises preparation and signing of the financial agreement. 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, as well as level and schedule of disbursement of agency's support. The contract will also specify the method of and timing for supervision checks to be conducted by the agency in the course of 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 review 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 multilateral contracts as well. These may include contracts between the: implementing agency-beneficiary-contractor, or implementing agency-beneficiary-third party, or implementing agency-

beneficiary-bank. Regardless, before signature, qualified lawyers should prepare and verify the contracts.

Contract elements

Once an agreement is negotiated, supported by all the documentation, and checked in detail by financial specialists and lawyers, the project co-ordinator may apply to the Management Board for a decision on signing the contract. If the practice is for two Board members to sign the agreement, it is recommended that this include the one responsible for agency finances.

Box 17 presents the major elements included in a standard grant/loan agreement, based on the experience of the Polish National Fund.

Box 17. Possible elements of a standard grant/loan agreement

As a minimum, the standard grant agreement should specify:

- parties to the agreement;
- subject of the agreement;
- total project cost;
- grant amount and its share in 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 provided to the beneficiary;
- sanctions imposed in the event the agreement is inadequately fulfilled.

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 (see Box 18) and a conflict **resolution** clause. The latter should indicate 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 place of arbitration should be clearly specified. These clauses are of particular importance as they ensure the protection of public funds against misuse and corruption.

Box 18. Reasons for termination of a contract

The Polish National 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 portions thereof for purposes other than those set forth in the contract;
2. deviations from the implementation plan and/or financial schedule;
3. delay of more than 30 days with regard to the agreed repayment dates for both principal and interest;
4. 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. failure by the beneficiary to submit the information on its financial status, as required by the agreement and, in particular, when it 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 determined that the repayment is at risk;
6. renegotiations of loan conditions lasting for more than 30 days for reasons caused by the beneficiary;
7. refusal by the beneficiary to provide explanations on irregularities identified by the Fund or submit required documents; hindering Fund staff in the conduct of on-site inspections;
8. 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 in relation 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.

For 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.

For 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 interest.

Major contract annexes

In addition to the main text of the agreement, the contract may contain a number of substantive annexes. Experience shows that at 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 (in terms of frequency, number of copies, authorised officials to sign documents) and reporting requirements (in a standardised format provided by the agency).

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

Technical and financial implementation plan of the project

The technical and financial implementation plan should contain as detailed as possible information and data on the entire project, specifying 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 perspectives. The costs of each of these tasks should be clearly indicated.

In addition, the implementation plan should be supported by a number of administrative 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), discharge 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).

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, the applicant should quote the most recent and relevant costs available. 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 has not been conducted by the time the financial agreement is signed, 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 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.

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 that 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 19.

Box 19. Examples of types of costs not covered by the Polish National Fund

- preparation of project documentation
- preparation of pre-feasibility/feasibility studies
- fees for obtaining permits/licenses
- consultant fees related to project implementation
- surveying works
- greenery, landscape 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 glassware, 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-fired 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 exchange rates differences
- 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 fees, etc.)
- indirect costs (except for equipment purchase and start-up costs and customs duty)

Project implementation monitoring and financial transfers

Monitoring of project implementation is the penultimate stage of the project cycle. The supervision and monitoring of project implementation begins with the 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 section looks at the first (project 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. It also looks at issues related to financial transfers and possible precautionary measures that the agency can take when making such transfers.

Project implementation monitoring (first level control)

Monitoring is a management tool that allows implementing agencies to measure the performance and assess the impact of the individual projects they support. Monitoring provides a basis for the agency to learn from its own experience and use this knowledge in improving future project implementation. Monitoring is a continuous process of collecting and analysing information to measure the progress of a project towards expected results. Monitoring should continue beyond project completion.

It is important that the agency allocate sufficient staff time and financial resources and conduct proper monitoring. 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 institutional memory.

Project implementation monitoring requires that a number of checks be introduced. 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 and the attainment of environmental objectives. 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 Agency's Staff Manual or Staff Regulations.

Box 20 presents the list of the minimum measures needed to ensure good supervision and control by the agency during project implementation.

Box 20. Minimum prerequisites for ensuring good project supervision and monitoring

- each project should be assigned a dedicated project coordinator from the agency who will have a responsibility for close and regular monitoring of the progress of a given project
- each beneficiary should be required to prepare detailed substantive interim and final reports, following a format developed by the agency and in accordance with the contract
- 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 by agency's staff 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
- continuous monitoring of the project beyond implementation and in its operational phase should be ensured by the agency

Rules for reporting on project progress

Project implementation monitoring starts with the signature of the financial agreement with the beneficiary. In essence, 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 project 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.

The final project report should contain information on environmental benefits achieved as a result of the project and provide comparison with the expected environmental effects as stated in the application form. In case of non-attainment of the expected environmental benefits, the beneficiary should provide a clear explanation of the reasons and the agency should proceed in accordance with the contractual agreement.

Rules for conducting proper project implementation monitoring

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

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

Monitoring during implementation can be divided into technical and financial supervision. Monitoring is a responsibility of the agency's co-ordinator, who will follow the project from start to 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 financial agreement. If the information submitted by the beneficiary is unclear or does not correspond to the technical implementation plan, the agency's co-ordinator 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:

- summary report showing completion of all tasks planned for the specific project stage;
- complete set of invoices (with copies) as specified in Table 15, confirmed by the beneficiary;
- copy of the technical acceptance protocol attached to the invoice;
- list of project implementation costs covered by the Fund's resources, prepared in tabular form (see Table 15) and confirmed by the beneficiary.

Table 15. Standard form for reporting costs incurred during a given project stage
(to be completed by beneficiary, in use at the Polish EcoFund)

Item	Item in the Procurement Plan	Contractor / Supplier	Invoice	Material scope of tasks	Invoice amount (PLN)	
	<i>(Annex 2 to the agreement)</i>		<i>(Number and date)</i>	<i>(Completed)</i>	<i>Total</i>	<i>Net (excl. VAT)</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. Since external experts cost money, they should be used in exceptional cases, for example, when the agency has decided to discontinue support to a beneficiary and 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 properly spent. Financial supervision requires the verification of financial documentation (invoices) submitted as project implementation progresses, but it also necessitates checks conducted at the beneficiary. At this stage, it is **important also to 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 co-ordinator as well as separately by the financial manager alone.

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

The major purpose of an **on-site visit** is to assess the beneficiary's compliance with contractual arrangements. During the visit, the agency's co-ordinator inspects 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, and 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 prior notice to the beneficiary and agreement on the time and issues to be discussed. The agency's co-ordinator should have a list of issues for inspection and control. If discrepancies or delays in project implementation are revealed, 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 weekly management meetings during which management staff discuss problems related to individual projects, look carefully at the additional information provided, and record final decisions in management protocols. If necessary, the agency's co-ordinator 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 discontinuing payments or terminating the agreement with the beneficiary.

Financial transfers

Financial transfers are a central issue for the agency. If mistakes are made during the previous stages of the project cycle, these have no financial implications for the agency; yet, this is not the case when actual disbursements to the beneficiary have been made.

Monitoring of how the beneficiary spends agency's resources 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 or, even worse, all of the support has already been transferred to the beneficiary, the agency has little recourse to recover its money. Litigation may be an option, but it is very costly and will waste 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 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 instalments;
- 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 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 up-front, before actual costs are incurred, should be strongly discouraged. Experience shows that when such practice is used, the risk of misuse of public resources is very high. 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 assume the financial burden for start-up operations. Only in exceptional cases, such as support provided to NGOs for nature conservation projects, schools, kindergartens, and churches, can the agency decide to provide up-front 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 to the agency for payment. The actual transfer should be made only after all financial and

reporting documents have been checked by agency 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 in with other transactions.

In case of a failure of the beneficiary to meet a deadline, the agency may suspend the payment of invoices. The agency should duly inform the beneficiary of such action and explain the reasons for the decision. The beneficiary should bear all consequences of a suspension of payments.

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 its costs by implementing certain tasks at a cost lower than indicated in the financial plan;
- (ii) total project costs change for objective reasons, such as a sharp increase in certain prices leading 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 obtain benefits by implementing certain project tasks at a cost lower than the cost stated in the financial plan to the contract. As mentioned earlier, in such a case, the agency should operate on the principle of equal share in cost savings, by retaining an equivalent percentage share of its committed support. If, on the other hand, cost over-runs occur 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 its intentions and the agency has agreed to such changes. It is important that the agency should be in contact with the beneficiary on a permanent basis, which would allow its staff better to understand any changes in project implementation. However, no disbursements to the beneficiary should be made until the situation is clarified. For example, in Austria, if cost overruns are more than 15% over the initial agreement, the entire application procedure must be restarted and the grant component is lowered.

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 that can be serviced only with the consent of the agency. For example, the Polish EcoFund and the Austrian Kommunalkredit keep 5% of each grant on 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 it to inform the agency of achieved environmental effects. This shows the need to continue project monitoring in the operational phase, as certain environmental benefits can be achieved only after the equipment has reached 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 final technical and financial reports 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 21. 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:

- withhold (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 it can withdraw money only with agency consent;
- introduce the equal share principle in cost savings;
- impose a penalty for delay in project delivery;
- 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 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

Post-implementation monitoring (second-level control) and evaluation of project results close the project cycle. Evaluation is largely based on the beneficiary's final report. There are three elements that should be carefully considered during evaluation, namely:

- inputs – the resources provided by the agency to cover agreed project costs;
- outputs – the physical assets produced, for example, a WWTP built;
- impact – the environmental effect obtained or pollution reduction achieved. The output and the impact are different notions. A WWTP may well be built, but if insufficient wastewater is delivered for treatment due to the fact that the sewage system has not been completed as agreed, or – even if the necessary volume of wastewater is delivered but the technology does not meet the required standards – the result (output) is not equal to the expected impact.

If the impact (environmental effects) is not achieved upon project completion, the agency should require the return of its funds or start negotiations, provided objective reasons exist for such discrepancies. Such reasons may include a lack of resources (beneficiary thought it 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, reasonably sufficient time for the beneficiary to achieve the planned 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 project identification process. The evaluation of individual projects also provides a broader basis to assess the project contribution to achieving overall programme objectives as well as the effectiveness of the entire programme and the impact agency's resources have on actual environmental improvements in the country.

Such ongoing 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 communicate successfully with these stakeholders, the agency needs to have a clear policy how best to do this. A good communication strategy is essential to help the agency be 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, as suggested by the EcoFund, include:

- opening ceremony of a completed investment in the presence of the Fund's managers;
- press conferences focused on 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 experience;
- preparing and disseminating 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 refine its selection process, contractual arrangements, and monitoring mechanisms. Lessons learned should be incorporated in the report on programme implementation, which the agency should send to the appropriate ministry and to the parliament.

Summary and guidance for the implementing agency

The after-project selection stage includes commitments, negotiations, and contracting. The initial intent shows the agency's interest in supporting a project. It is only during negotiations and with the signing of a financial agreement with an applicant that this intent becomes the agency's financial obligation.

Contractual clauses in the agreement should ensure the protection of public funds from misuse and mismanagement. It is recommended that the financial agreement contain a number of essential annexes, such as a detailed technical and financial implementation plan. 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 ensure that the financial agreement contains a clause stipulating how the agency will deal with changes in costs and/or expected environmental effects. Differences in costs before and after tendering, however, should not be significant, as experienced agency staff should have been able to detect unrealistically low or high prices early in the evaluation process and reject such projects at early stages of the project cycle.

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

Project implementation monitoring requires clear rules and standards for technical and financial reporting by the beneficiary and for conducting supervision by agency staff. The agency needs to require that the beneficiary submit progress reports at every stage of project implementation. A project stage can be approved only after agency 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 funds. Monitoring of project implementation should continue in the operational phase of the project, as often the full extent of environmental benefits is achieved when the entire 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.

CHAPTER 4 CONCLUSIONS

Public environmental expenditure programmes are one of the instruments of environmental policy used to achieve 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.

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. This Handbook was prepared as a supplement to the Good Practices. It is intended to show how to implement these good practices 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 need to make to define and effectively manage environmental programmes. It identifies a set of core principles that agencies managing public resources need to follow. It also offers a number of practical management tools that such agencies can use in daily operations. Thus, this document deals with all the 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 project implementation monitoring and evaluation.

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

The appraisal of projects is a technical concept and is usually conducted by professional staff held 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, programming and project cycle management responsibilities need to be separate 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 project cycle management. The appraisal process provides mechanisms and tools to select the most cost-effective projects with the aim of achieving the expected 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, effective, and efficient manner. This requires assessing projects for financial viability and cost-effectiveness. Cost-effectiveness 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 the successful implementation of the project.

All decisions made during the project appraisal, selection, and implementation process should aim at optimising the use of public resources provided by the agency and leveraging additional resources for environmental investments. In addition, rules and procedures need to 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 support. Project implementation monitoring implies an effective set of checks for both technical and financial control from project start to completion. Monitoring of project implementation should continue in the operational phase of the project, as often the full extent of environmental benefits is achieved only when the entire project is completed and the installations have reached full operational capacity.

Equally important is the evaluation of the entire programme and the entire project cycle, and not just individual projects. 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 require public support in order to be implemented.

REFERENCES

ADB (Asian Development Bank) (1997), *Guidelines for the Economic Analysis of Projects*, ADB, Manila.

ADB (1999), *Handbook for the Economic Analysis of Water Supply Projects*, ADB, Manila.

EC (European Commission) (1997), *Guide to Cost-Benefit Analysis of Investment Projects*, Valuation Unit, DG Regional Policy, EC, Brussels.

EC (1999), *Council Regulation No 1265/1999 of 21 June 1999*, Official Journal of the European Communities, EC, Brussels.

EC (2001), *Community Guidelines on State Aid for Environmental Protection (2001/C37/03)*, OJEC, C37/3, EC, Brussels.

OECD (Organisation for Economic Cooperation and Development) (1995), *The St. Petersburg Guidelines on Environmental Funds in the Transition to a Market Economy*, OECD, Paris.

OECD (2000), *Performance Review of the Slovenian Environmental Development Fund*, OECD, Paris.

OECD (2001), *Managing Public Expenditure, A Reference Book for Transition Countries*, Ed. by Richard Allen and Daniel Tommasi, OECD, Paris.

OECD (2006a), Pearce D., Atkinson, G. and Mourato, S., *Cost-Benefit Analysis and the Environment, Recent Developments*, OECD, Paris.

OECD (2006b), *Good Practices for Public Environmental Expenditure Management (C92006)84*, OECD, Paris.

OECD (2006c), *Mechanisms for Managing Public Environmental Expenditure in Selected OECD Countries*, OECD, Paris.

OECD (2007), *Trends in Environmental Finance in Eastern Europe, Caucasus and Central Asia*, OECD, Paris.

Pedro Belli, et al. (1997), *Economic Analysis of Investment Operations. Analytical Tools and Practical Applications*, The International Bank for Reconstruction and Development/World Bank Institute, Washington, DC.

Peterson, G. (2000), *Building Local Credit Systems*, World Bank, Washington, DC.

Regional Environmental Center (REC) (2001), *Environmental Funds in the Candidate Countries*. REC, Szentendre, Hungary.

Squire, L. and G. Van der Tak, H. (1975), *Economic Analysis of Projects*, World Bank, Washington, DC.

Stanek, R. (2003), *Economic and Environmental Criteria for Evaluating Investment Projects*, The Institute for Environmental Tax Reform, Warsaw, Poland.

UNEP (United Nations Environmental Programme) (2004), *Guidelines on Municipal Wastewater Management*, UNEP, The Hague.

ANNEXES

Annex I: Programming

Annex I.1: Illustrative environmental and natural resource priorities

Media/Natural resource category	Group within category	Individual problem within category	Technology or process within category
Air quality	<ul style="list-style-type: none"> • Combustion pollutants • Toxic air pollutants • Global air pollutants 	<ul style="list-style-type: none"> • Sulfur oxides, ground-level ozone • Cadmium, asbestos • Carbon dioxide, methane 	<ul style="list-style-type: none"> • Coal-fired boilers • Vehicles without catalytic converters • Cement kilns
Water	<ul style="list-style-type: none"> • Biological pollutants • Chemical pollutants • Anthropogenic and natural sources of radiation 	<ul style="list-style-type: none"> • Biological oxygen demand • Microorganisms • Nitrates and phosphates • Pesticides • Heavy metals 	<ul style="list-style-type: none"> • Wastewater treatment facilities • Water supply and treatment • Food processing plants • Agricultural operations • Household sanitary facilities
Waste management	<ul style="list-style-type: none"> • Household and commercial wastes • Industrial wastes • Medical wastes 	<ul style="list-style-type: none"> • Plastics, newspaper, glass • Construction materials • Hazardous waste • Materials contaminated with low level radiation 	<ul style="list-style-type: none"> • Landfills • Municipal and hazardous waste incineration • Segregation, recycling, composting
Nature protection	<ul style="list-style-type: none"> • Protected areas • Biodiversity and habitat 	<ul style="list-style-type: none"> • National parks • Designated biosphere areas • Endangered species (large cats, migratory birds, etc.) 	<ul style="list-style-type: none"> • Land acquisition and relocation • Public education and awareness • Species breeding

Annex I.2: Possible co-financing rates per project type

Table I.2.1 suggests possible options for the range and type of co-financing that can be provided to different recipients for various types of projects. It is expressed as a share of the grant in eligible project costs. The values contained in the table are for illustration only.

Table I.2.1: Possible options for the range and type of grant co-financing provided to different recipients for various types of projects (as percent of eligible project cost)

Project area Recipient	Biodiversity			Climate change			Water resources protection			Capacity building		
	I*	II	III	I	II	III	I	II	III	I	II	III
Central government	0%	75%	75%	0%	50%	75%	0%	50%	75%	0%	75%	85%
Local authorities	0%	75%	75%	0%	50%	75%	0%	50%	75%	0%	75%	85%
Utilities (e.g., water utilities, district heating companies)	0%		75%	0%		75%	0%		75%	0%		85%
Budgetary institutions (e.g., schools, hospitals)	0%	85%	75%	0%	50%	75%	0%	50%	75%	0%	85%	85%
Non-governmental organisations	0%	85%	75%	0%	50%	75%	0%	50%	75%	0%	85%	85%
Private sector	0%	50%	75%	0%	50%	75%	0%	50%	75%	0%	50%	85%
Private sector: small and medium enterprises, small farmers, community groups	25%	50%	75%	25%		75%	25%		75%	25%	50%	85%

* I – potentially commercial; II - cost-recoverable; III - non-commercial

In addition, an example from the Polish EcoFund presented in Table I.2.2 below shows possible levels of assistance the Fund offers across various types of beneficiaries.

Table I.2.2: Grant limits for typical projects in use at the Polish EcoFund

Applicants	Income levels	Grant limits for typical projects Non-commercial projects (IRR < IRR Limit)
Entrepreneurs*		Up to 30%
Self-governments		
Group I	($x \leq X_{20}$)	Up to 60%
Group II	($X_{20} \leq x \leq X_{70}$)	Up to 50%
Group III	($X_{70} \leq x \leq X_{90}$)	Up to 40%
Group IV	($x > X_{90}$)	Up to 30%
Other applicants		Up to 50%
<p><i>Note: * - For enterprises fully owned by municipalities (100%), the rate for the corresponding self-government applies.</i></p> <p><i>x – Total per capita income, calculated as the arithmetic mean of this parameter recorded annually in the first three years of the four-year period preceding the year in which the grant is to be awarded.</i></p> <p><i>$X_{20, 70, 90}$ – Income ratio thresholds (maximum per capita income) for municipality groups covering the poorest 20%, 70%, and 90% of all the municipalities ranked according to increasing total per capita income.</i></p> <p><i>IRR – Internal Rate of Return.</i></p> <p><i>“Other applicants” include charitable and religious organisations and institutions, voluntary environmental organisations, as well as management boards of national and landscape parks, educational and health service institutions, and housing co-operatives.</i></p>		

Typical projects for the Polish EcoFund include both non-commercial projects as well as innovative and standard projects. The Fund does not support commercial projects, as they generate a profit and can easily obtain and repay commercial loans. The EcoFund supports only non-commercial projects in their priority areas and the grant limits are related to income levels in beneficiary municipalities.

Annex II: Project appraisal

Annex II.1: Outsourcing opportunities

The potential opportunities for outsourcing are summarised in Table II.1.1. For a range of expenditure programme functions and tasks, the table describes the potential for outsourcing, possible service providers, and the risks of outsourcing.

In considering outsourcing tasks to private companies, it must be checked whether incompatibilities exist. Absolute objectivity is required and should be ensured in contracts. This is essential to show beneficiaries that the evaluation of their applications is based on objective criteria and not influenced by commercial interests. Table II.1.2 presents an assessment of potential outsourcing incompatibilities between different programme functions. A “yes” in a cell indicates that the two functions (across the top of the table and on the left column of the table) would be compatible if both were outsourced.

Table II.1.1: Summary of outsourcing opportunities

Outsourcing target	Tasks	Outsourcing potential	Possible service providers	Risks
Submission and information	Develop information on the submission of applications, how the process works, eligibility criteria, and appraisal criteria. In addition, applicants may require additional assistance in preparing applications. Whether such assistance is provided by the agency or outsourced, the agency must communicate that the information (including consulting) and submission services are without prejudice to further appraisal.	High. A submission unit (including information provision) plays only a minor role in the funding process.	For a national agency, services could be provided by regional departments or inspectorates of the government. While these government entities could assist on technical aspects, other possible partners such as banks with outlets in all regions could better assist on financial issues.	1) Regional departments will have inadequate resources or access to information to execute these tasks fully. 2) Banks can perform these tasks properly as long as the services are provided competitively and the quality of services is a decisive criterion for customers to co-operate with the bank in question. 3) Lobbying by regional departments on behalf of applicants may become too powerful and the level of assistance excessive. This may happen as regional departments try to promote local projects in relation to other regions.
Formal evaluation (eligibility screening)	<u>Evaluation of the formal aspects of the application:</u> This includes checking all necessary forms, annexes and permits for completeness and accuracy. <u>Formal evaluation of the substantive aspects of the application:</u> Verification of eligibility using stated criteria for organisation form and ownership, project size, project and regional priority, etc.	High. The basic review of the application (formal aspects) could be done easily by units independent from the agency. The outsourcing potential, however, is low for the evaluation of the substantive eligibility aspects of the application.	The outsourcing partners for submission and information would be suitable for the first step in the formal evaluation process since this covers only the basic check for application form completeness. For the assessment of eligibility, outsourcing should only be considered if a higher level institution is involved. This unit must be credible with regard to potential local and regional pressures to promote selected applications.	The major risk is not related to outsourcing <i>per se</i> but rather to the fact that eligibility criteria may not be clearly defined and transparent. As a result, the outsourcing agent would face a difficult task, unless its role is limited to the first step of formal evaluation. The greater the ambiguity and potential for other interpretations, the more likely that political pressures could undermine the process.

Outsourcing target	Tasks	Outsourcing potential	Possible service providers	Risks
Technical appraisal	The technical appraisal covers the review of the project with respect to technical and environmental criteria.	High. Staff in the administrative unit will often lack the technical expertise to evaluate proposed technologies or estimate the potential benefits of the project.	Private sector consultants and experts from universities and research institutions can be identified to conduct the technical appraisal.	Key risk stems from potential conflicts of interest as a pool of suitable technical appraisers will be in demand to assist applicants in the preparation of project applications, given their knowledge of the technical appraisal process. Agencies can minimise this potential risk through carefully designed contracts, use of contract provisions limiting consultation for a certain period of time, etc.
Financial appraisal	The financial appraisal is conducted to verify and check the applicant's financial plan and creditworthiness if loans or interest rate subsidies are offered. This appraisal should also include checking proposed co-financing sources.	Medium. It may be difficult to find experts in this field because of the need of skills combining knowledge in both public infrastructure and the financial and economic analysis. The best option is to establish co-operation between the agency and financial institutions that conduct such financial appraisals on a regular basis.	Banks provide financial appraisal services and agencies can either retain their services or, if banks are co-financing agency projects, rely on the participating bank to share the financial appraisal with the agency. Private consultants could conduct financial appraisal but this raises questions of accountability for erroneous appraisals.	Most of the risks are related to accountability for poor decisions. Co-operation with established banks and financial institutions can prevent this risk, especially if the co-operating institution is a co-financier. Co-operation with a single bank could have competitive implications in the credit market.
Consultations with different stakeholders	The tasks related to consultations with stakeholders generally relate to comments on programme priorities, eligibility and appraisal/selection criteria, and comments on individual projects. Usually, comments on individual projects are solicited during the application process.	Low. All discussions with stakeholders on individual projects should be managed by the administrative unit. There is some scope for outsourcing the solicitation and processing of comments on the annual programme (priorities, eligibility, and selection criteria) to ensure objectivity.	For comments on programmes, the preferred outsourcing partner would be an NGO or other credible public or private institution experienced in handling written comments.	Risks are minimal, provided consultations on individual project applications are conducted by the expenditure programme's administrative unit in a transparent manner ensuring that project development and ownership stay with the applicant.

Outsourcing target	Tasks	Outsourcing potential	Possible service providers	Risks
Approval	After the full appraisal, the comments of the applicant and the opinion of the management body, the final step is the approval or rejection of each project application.	Low. These decisions should be made by the agency unit established to make final decisions (e.g., supervisory committee, management board, senior official).	No outsourcing envisaged.	Risks are minimal.
Contracting	Applicants should be officially informed if their applications are rejected or accepted. In case of rejected applications, a letter is sent by the agency. For accepted applications, negotiations ensue to reach an agreement on a contract.	High. Correspondence concerning rejected applications should not be outsourced, but preparation of a model contract and instructions, negotiations and review of the contract could be outsourced, provided the final approval of the contract is the agency's responsibility.	The service could be done by internal or external institutions, including banks, lawyers, insurance companies or all institutions considered competent to run the administration unit.	Risks should be minimal provided appropriate oversight and approval authority are established in the agency for contracts facilitated by outsourcing agents.
Disbursement	This task involves the disbursement of funds to the beneficiary in one or multiple form. For interest rate subsidies, payments may be made directly to the lender.	High. For long term financing, it is necessary to find organisations with a business strategy at least over the agreed financing period.	The logical choice would be the agency's banking partner, although regional or local authorities might assist in disbursing grant monies, particularly if there are numerous recipients of small amounts.	Except for long-term disbursement programmes for large infrastructure investments, risks should be minimal. For long-term disbursements, it is important to select outsourcing agents with stable operations.
Control of projects	The control at a project level should ensure that all parties meet their contractual obligations. This requires the issuing of certificates of good operation of plants financed with public aid from the agency as well as checking the beneficiary's financial statements. A selected number of	Medium. External experts, such as technicians or external auditors, could be involved in the process. Yet, the final responsibility should stay within the control authority.	Any technical or audit company could be used for this activity. Local environmental agencies or environmental inspectorates could also play a role.	The main risk lies in the appointment of the outsourcing agent. This risk can be minimised by performing random spot checks of the reports prepared by the agent.

Outsourcing target	Tasks	Outsourcing potential	Possible service providers	Risks
	projects can be subjected to more thorough inspection.			
Expenditure programme monitoring and reporting	On an annual basis, the expenditure programme activities are monitored and reports prepared covering both financial and project cycle results. The form of reports may be mandated in enabling legislation. More extensive evaluations of the programme may be undertaken less frequently, such as every three years. The scope of such a review is focused more on programme administration and policies.	Medium. Control of this task should be maintained by the implementing agency or the government agency overseeing the programme. It may be appropriate to outsource the financial audit or the preparation of the annual report, depending on what is allowed in operational procedures or legislation. The less frequent programme evaluation will typically be outsourced.	Private companies or external agencies could prepare financial and annual reports. The less frequent programme evaluation should be conducted by a reputable international management firm and/or auditing company or an international organisation.	This is a critical activity in promoting accountability and transparency. There are minimal risks provided the expenditure programme outsources these tasks to reputable firms or organisations.
Data management	Data are required at all stages of the programming and project cycle. All decisions and results have to be documented by indicating the date of the decision, the responsible person, and the person responsible for preparing the data set. This task should accompany all decisions made by the agency. All changes in databases have to be properly registered.	High. Data collection and data management can be external in order to provide maximum independence. This task can be an additional safeguard against corruption.	In order to guarantee independence, international companies should be involved in configuring the system. An international tender is suggested.	External data management bears the risk of creating (after the tender) a monopoly. Due to dependence on current systems, it may prove impossible to change the service provider after some years.

Table II.1.2: Compatibility check

	Submission and information	Formal appraisal	Technical appraisal	Financial appraisal	Consultations	Approval	Contracting	Disbursement	Control	Reporting	Data management
Submission and information		Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	No
Formal appraisal			Yes	Yes	No	No	Yes	Yes	No	No	Yes
Technical appraisal				Yes	No	No	Yes	Yes	No	No	Yes
Financial appraisal					No	No	Yes	Yes	No	No	Yes
Consultations with different stakeholders						No	No	No	Yes	Yes	No
Approval							Yes	Yes	No	No	No
Contracting								Yes	No	No	Yes
Disbursement									No	Yes	Yes
Control										No	No
Reporting											Yes
Data management											

Annex II.2: Polish EcoFund Project questionnaire and guidelines for applicants

(For EcoFund use)

Received by the EcoFund on:

No

PROJECT QUESTIONNAIRE
APPLICATION FOR ECOFUND FINANCIAL SUPPORT

1. PROJECT NAME:

2. APPLICANT:

3. PROJECT LOCATION:

4. ENVIRONMENTAL SECTOR:

	PRIMARY	SECONDARY
I. Elimination of SO₂/NO_x Emissions	<input type="checkbox"/>	<input type="checkbox"/>
II. Protection of the Baltic Sea	<input type="checkbox"/>	<input type="checkbox"/>
III. Climate Protection	<input type="checkbox"/>	<input type="checkbox"/>
IV. Biodiversity Conservation	<input type="checkbox"/>	<input type="checkbox"/>
V. Waste Management & Contaminated Soil Reclamation	<input type="checkbox"/>	<input type="checkbox"/>

5. PROJECT ENVIRONMENTAL OBJECTIVE(S) AND JUSTIFICATION:

6. TECHNICAL DESCRIPTION OF THE PROJECT:

7. SELECTED OR PLANNED SUPPLIERS (MANUFACTURERS):

8. PROJECT FINANCING:

FUNDING SOURCES	FINANCIAL RESOURCES (PLN)				SHARE (%)
	DISBURSED IN THE YEARS:	COMMITTED	PLANNED	TOTAL	
OWN FUNDS:					
LOANS:					
GRANTS:					
ECOFUND: GRANT:	XXXXXXXX	XXXXXXXX			
TOTAL					100

**PERSON PREPARING THE
QUESTIONNAIRE
PERSONAL DATA / STAMP**

**PERSON SUBMITTING THE
QUESTIONNAIRE
PERSONAL DATA / STAMP**

(DATE & SIGNATURE)

(DATE & SIGNATURE)

Guidelines for preparing the project questionnaire

1. PROJECT NAME

The name should be as short and concise as possible – comprising a single sentence – and clearly state the nature of the undertaking presented in the application.

2. APPLICANT

In this section, the Applicant provides the name and address of the institution or person identified and acting as the prime investor (for investment-related projects) or prime executive agent (for biodiversity conservation projects). The legal status (budget entity, local government, public enterprise, company, foundation, civic organisation, other) is also to be provided. The name of the person authorised to manage the project on behalf of the Applicant, together with phone and fax number, needs to be provided as well.

3. PROJECT LOCATION

The town / city or region of the country where the project is to be implemented.

4. ENVIRONMENTAL SECTOR

Ticks should be made in the boxes next to the name of the environmental sector to which the project applies. The EcoFund provides grants to projects implemented within the following sectors:

1. Reduction of transboundary SO₂ and NO_x emissions;
2. Reduction of pollution into the Baltic Sea;
3. Abatement of gaseous emissions that cause global climate changes (CO₂, methane, freons, others);
4. Biodiversity conservation;
5. Waste management and contaminated soil reclamation.

Should the project apply to more than one sector, both the primary and other related sectors should be underscored.

5. PROJECT OBJECTIVES AND JUSTIFICATION

The Applicant should clearly state the objective of the project. In the event the project serves to achieve a number of objectives, both the primary and secondary objectives should be listed. The wording of the objective(s) should refer to the change in the condition of the environment as a result of project implementation.

In presenting the project objective, the current environmental threats that the project will address (either eliminating or limiting) should be identified. The project justification must show that the project addresses at least one of the five EcoFund priority sectors, is cost-effective, and complies with at least some of the EcoFund's criteria. The following factors are considered of particular importance:

- project is innovative on the national scale;
- project involves the transfer of best technologies from countries that have agreed to the Polish debt-for-environment swap;
- project launches environmentally-friendly manufacturing in Poland.

The justification must specify all measurable environmental benefits that will result from project implementation (e.g., reduction in emissions into the atmosphere, decrease in waste quantity, mass, or volume, etc.) and describe any difficult-to-measure benefits (such as those related to nature conservation).

6. TECHNICAL DESCRIPTION OF THE PROJECT

The technical description must specify the type of technology to be applied and the main technical parameters (including country of origin).

In this section, the Applicant needs to present and discuss the general technical and organisational assumptions for investments at an early stage of preparation (including the preparation of documentation and funding).

For investments already commenced, the Applicant must state the current status of technical and financial implementation, as well as identify the companies responsible for the technical design and the prime contractor. A more detailed description must be provided for the part of the investment that remains to be completed; the grant application to the EcoFund should only cover this part of the investment.

For organisational projects (such as those concerning nature conservation), the Applicant must list all crucial elements and define their functions within the project structure. The investment component must also be clearly specified, if it is applicable to the project.

The start and completion dates (month, year) should be specified for each and every project (related to expenditure on implementation). Alternatively - the number of months allocated to the implementation of the project.

7. SELECTED OR PLANNED EQUIPMENT SUPPLIERS (MANUFACTURERS)

In this section, the Applicant provides the names of companies (Polish and/or foreign) selected or expected to act as equipment suppliers. A distinction, however, needs to be made between the supplier, i.e., trading or supplier company, and manufacturer, who may submit a '*certificate of origin*'.

If the suppliers are yet not known, the Applicant must state the planned procedure for their selection (e.g., the course and scope of the bidding procedure).

The EcoFund finances the procurement of equipment originating from Poland or creditor countries that have joined the EcoFund. As of September 2001, these countries include: USA, France, Switzerland, Sweden, Italy, and Norway.

8. PROJECT FINANCING

The Applicant must provide a complete list of the sources of project financing, using the table shown in the Questionnaire.

Own funds include the Applicant's budgetary or investment funds allocated toward project implementation. This category also includes contributions from future investment participants (such as gas or sewerage network users).

In the table, project implementation funds are divided into funds disbursed, granted, and planned. Amounts that have actually been placed at the Applicant's disposal (as supported by documents), but

not yet disbursed shall be considered committed. The remaining money necessary to complete the project is referred to as “planned”. EcoFund support falls into this category.

Under the table, please specify the amount sought in the grant application from the EcoFund for the current and all subsequent years of the financial plan.

The data on financing sources should demonstrate that the total funding is sufficient to cover all project costs.

Costs incurred prior to the submission of the application for support from the EcoFund should be converted into current prices, whereas costs to be incurred in coming years should be quoted in current or forecast prices (the Applicant needs to include a brief description of the method of cost determination in a commentary below the table, as well as the calculation / conversion and forecasting ratios).

EcoFund, September 2001

APPENDIX TO WATER PROTECTION PROJECT QUESTIONNAIRE

To be completed when applying for financial aid from the EcoFund

(Note: This form is also available in Word 6.0 format.

To obtain the file by e-mail, please contact: woda@ekofundusz.org.pl)

Formal and legal status of the project:

	YES	NO	NOT REQUIRED
Project assessment, as provided under the Water Law	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treated wastewater disposal permit*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental impact assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Building permit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please specify:

* The "treated wastewater disposal permit" specifies conditions (quantity and quality) for the disposal of wastewater after treatment.

Experts' opinions and reviews:

Project scope:

- ☐ Construction of a wastewater treatment plant
- ☐ Construction of transfer collectors to a combined wastewater treatment plant
- ☐ Modernisation and/or expansion of a wastewater treatment plant

Quantitative balance and qualitative characteristics of effluents:

- Daily average volume of wastewater to be processed: [m³/d]**

** For holiday resorts and other places with seasonal peaks, please specify the on and off-season averages.

Pollutant concentrations in effluent:

Pollutant	Unit	Maximum allowable value***	EU allowable value****	Present value	Planned value	Absolute change	Relative change [%]
-	-	-	-	a	b	c = a – b	d = c/a × 100%
BOD ₅	g O ₂ /m ³						
COD	g O ₂ /m ³						
Suspended solids	g/m ³						
Nitrogen	g N/m ³						
Phosphorus	g P/m ³						

*** According to the treated wastewater disposal permit

**** European Union requirements

Pollutant loads:

Pollutant	Unit	Present value	Planned value	Absolute change	Relative change [%]
		a	b	$c = a - b$	$d = c/a \times 100\%$
BOD ₅	Mg/a				
COD	Mg/a				
Suspended solids	Mg/a				
Nitrogen	Mg/a				
Phosphorus	Mg/a				

Receiving waters (please describe):

Sludge management system:

Sewer network coverage of the relevant area as a result of implementation of the project presented in the Project Questionnaire is completed:

.....%

Planned project commencement date:

Planned project completion date:

Structure of project costs: ****

- Wastewater treatment plant: PLN (please round to the nearest thousand PLN)
- Transfer collectors: PLN (please round to the nearest thousand PLN)

**** Applies to projects involving construction of both a wastewater treatment plant and sewage collectors.

Annex II.3: Polish EcoFund complete Water Application Form and Instructions to Applicants

APPLICATION LAYOUT

- 1. Project Name**
- 2. Applicant**
- 3. Project Location**
- 4. Environmental Protection Sector**
- 5. Project Objective and Justification**
- 6. Project Description**
- 7. Environmental Benefits**
- 8. Material and Financial Project Implementation Schedule**
- 9. Contractors and Suppliers**
- 10. Project Financing Sources**
- 11. Project Financial Data**
- 12. Applicant Current Financial and Investment Liabilities**
- 13. Applicant Declaration**
- 14. Appendices**

INSTRUCTIONS FOR THE PREPARATION OF THE APPLICATION FORM

The information covered by items 1 - 4 should be written on the attached *Application Cover Page Form*.

1. PROJECT NAME

The project name should be as brief as possible – limited to a single sentence – and clearly define the main undertaking presented in the *Application*.

2. APPLICANT

Please specify the name and address of the Applicant – this should be the main Investor – and its legal status (budgetary unit, local government, state-owned enterprise, company, foundation, non-governmental organisation, natural person, or other – please define). The name and title of the person authorised to manage the project on behalf of the Applicant as well as his/her telephone and fax numbers should also be provided.

3. PROJECT LOCATION

Please specify the name of the town or village and the name of the plant or facility where the project is to be implemented. If the project covers a larger area, please specify the name of the municipality, district, and region.

4. ENVIRONMENTAL PROTECTION SECTOR

Please tick the box beside the designation of the relevant environmental protection sector appropriate for the *Application*.

If the project involves more than one sector, please indicate the primary and other sectors.

5. PROJECT OBJECTIVE AND JUSTIFICATION

5.1 Description of the project objective

Please clearly and concisely state the project objective or, if the project is aimed at more than one goal, please specify all objectives, but indicate the main one. The objective(s) should be presented in terms of changes in environmental conditions that are to be achieved as a result of the project.

Please specify the existing environmental hazards that will be eliminated or reduced as a result of project implementation.

The project justification must show that the project is important for at least one of the EcoFund's priority sectors, is cost-effective, and meets at least some of the EcoFund's criteria. In particular, preference will be given to projects that:

- include innovative solutions on a national scale;
- promote the best and proven technologies or organisational methods on the Polish market (demonstration installations, replicability), especially those to be imported from the countries that have joined the Polish debt-for-environment swap.

The project justification should also explain the reasons for undertaking the proposed project. In particular, the Applicant should describe the circumstances related to the international conventions to which Poland is a party, the requirements under Polish law and environmental protection standards, and other requirements, such as those related to reducing risks to human health, etc. The Applicant should also confirm that the proposed solutions will result in compliance with European Union directives.

It is also important to present the broader context of the project, i.e., how the project fits into the land use plan, "master plan," and international or transboundary programmes for environmental protection or nature protection, etc.

In addition, the Applicant should also provide information on the alternative solutions that were considered. The project justification should demonstrate that the proposed engineering solution is the optimal approach, by clearly enumerating its advantages over other possible options of solving the environmental problem the project is intended to address.

Moreover, the EcoFund attaches considerable importance to the replicability of the proposed project in terms of the applied technology that would be useful for other similar projects (demonstration effect).

One of the main criteria the EcoFund has adopted to evaluate projects is **cost-effectiveness**, understood as the ratio of project investment and operating costs to pollution reduction (in particular in comparison with the ratio of other similar projects).

If, apart from environmental benefits, the project is expected to generate income (profit), the reasons for applying for EcoFund support should be explained in detail (based on the economic information provided in item 11).

5.2 Information about the Applicant

- The **Application** should include the basic formal and legal information on the Applicant's status (documentary evidence of legal title to conclude an agreement with the EcoFund under civil law and to own the assets created as a result of project implementation).
- The Applicant should list its environmental protection projects completed, under implementation, and planned (excluding the project proposed in the **Application**).

5.3 Information about project location

- Functional description of the project area;
- Special environmental value of the project area (e.g., location in relation to protected areas);
- Town and country planning data (density and type of buildings, population size and density, etc.).

6. PROJECT DESCRIPTION

A description of the selected wastewater treatment technology (including a block schematic of the wastewater treatment plant) should be provided, specifying the technical characteristics of the system and the method of handling the sludge and other waste generated in the wastewater treatment process. For modernisation projects, the facility's starting conditions before modernisation should also be described. For a project covering a larger area (e.g., transfer collectors to be built as an alternative to the construction of one or more WWTPs), a map of the collector system should be provided, indicating the part covered by the **Application**. Depending on the project scope, the project description should include the following information:

6.1 Construction of a new wastewater treatment plant:

- a) Description of the project scope (planned or implemented);
- b) Description of the wastewater source, specifying the population size in the wastewater treatment plant catchment area;
- c) Degree of sewer network coverage in the wastewater treatment plant catchment area;
- d) Wastewater type (domestic, municipal, industrial, etc.);
- e) Quantitative balance and qualitative characteristics of the effluents used as the basis for preparing engineering design specifications of the wastewater treatment plant (characteristic flow rates, pollutant contents and loads);
- f) Technical description of individual facilities of the wastewater treatment plant:
 - The description of the wastewater treatment section facilities should include: dimensions of the facility, effective cubic capacity (for tanks), cubic volume (for buildings), brief description of the engineering design, list of process equipment including type and basic technical data (e.g., "Q" and "H" for pumps), manufacturer, and country of manufacture for the equipment items already selected. In addition, the description of the primary and secondary settling tanks should include the main operational data of the facilities, such as sewage dwelling time, hydraulic load of the surface of the settling tank, etc. For biological reactors, the description should also include cubic capacities of individual sewage treatment zones, internal and

external re-circulation values, sludge concentration in the reactor, BOD content of the sludge, sludge age, excess sludge quantity, etc.

- The description of the sludge management facilities should include: quantity and characteristics of the sludge, dimensions and cubic volume, brief description of the engineering design, and list of process equipment – specifying the equipment type, manufacturer, and country of manufacture for the equipment items already selected. Moreover, the quantity of the sludge to be removed from the plant and the sludge disposal method should be specified.
- The description of each of the other plant facilities (administration buildings, laboratories, workshops, etc.) should include information on the intended use, dimensions, and brief description of the engineering design.
- The description of the systems and networks to be installed on the plant premises (process pipelines, power supply system, water supply system, central heating system, etc.) should specify main technical data of these networks.
- The description of the measuring, monitoring, and automatic control system should include information on what parameters will be measured and on the method of controlling the wastewater treatment plant. Moreover, a list of the main parts of the system should be provided, specifying the equipment type, manufacturer, and country of manufacture for the equipment items that have already been selected.

g) Planned direct costs of operating the plant to be built:

Item	Description	Quantity	Unit	Unit price [PLN]	Annual cost [PLN]
1.	Electricity				
2.	Wages and salaries				
3.	Heating				
4.	Polyelectrolyte				
5.	PIX (coagulant)				
6.				
7.				
8.	Annual operating cost				
9.	Cost of the treatment of 1 m³ of wastewater				

h) Estimated start-up working capacity of the wastewater treatment plant and expected time to achieve planned capacity.

6.2 Modernisation (or development and modernisation) of a wastewater treatment plant:

The description should include all information as specified in item 6.1 above and a description of the existing wastewater treatment plant and its performance parameters.

6.3 Construction of transfer collectors (as an alternative to the construction of one or more wastewater treatment plants):

The technical description of the project should include the reasons why the proposed solution was selected, taking into account both technical and environmental aspects. Moreover, the description should include a comparative cost-effectiveness analysis to confirm the advisability, in economic terms, of making this selection.

The presentation of the technical characteristics of the technology should include information as specified in item 6.1, sub-items (a) through (e). In addition, it should include such data as length of individual collectors, pipe diameters, average depth of laying the pipes, number and throughput capacity of intermediate sewage pumping stations, etc. (Note: The reference symbols of collectors and pumping stations should be consistent with those used in the engineering design specifications). A project layout plan, including technical information on collectors (length, diameter, materials, etc.) should be attached to the ***Application***. Information on the local conditions in which the collectors are to be installed, such as existing buildings and building structures situated along the collector routes, existing and planned surface pavement, water table, need to place collectors in revetted trenches, etc., should also be provided.

In addition, the ***Application*** should also include a description of the materials to be used – specifying the material manufacturer(s) – technical description of the pumping stations with information on the manufacturers of pumps and other pumping station equipment (manufacturer name and country for the equipment that has already been selected), and description of the system of monitoring and controlling the project facilities.

The project description must also include information on the operating cost of the transfer collector system as well as on the efficiency and cost of wastewater treatment at the plant the transfer collector system feeds.

In each of the cases described above, the current physical and financial completion status of project implementation should be specified.

In all cases referred to in sub-items 6.1 through 6.3, the Applicant should also specify who has prepared the **project feasibility study** (which should be attached to the ***Application***) and the engineering design specifications of the project.

If any experts' opinions or reviews of the project have been issued at any stage of the project work, they should be attached to the ***Application***. This also applies to the **Environmental Impact Assessment**. Any documents regarding required permits or approvals related to project implementation (or information on the current status of the procedure to obtain such documents) should also be attached to the Application, in accordance with the **List of Appendices** provided by the EcoFund.

6.4 Planned allocation of EcoFund aid:

Please specify the project components to be financed with EcoFund support. When formulating the proposal, please remember that the aid, if granted, may be allocated mainly toward building project facilities or process lines, in particular to purchase process machinery or equipment (or importing such products from abroad). Also remember that the EcoFund's requirements for contractor and supplier selection procedures through public tenders must be met. Please note that supplies and technologies from EcoFund donor countries are preferred.

6.5 Compliance with EU regulations:

This sub-item of the ***Application*** should include the WWTP designer's opinion on the technical potential to bring the parameters of treated effluents into compliance with the relevant regulations currently in force in the European Union. For the construction of transfer collectors, this opinion should be issued for the wastewater treatment plant that is to process the sewage delivered by the transfer collector system.

7. ENVIRONMENTAL BENEFITS

The data on the measurable environmental benefits expected as a result of project implementation should be presented in a table as shown below:

Pollutant concentrations of effluents:

TABLE 1

Pollutant	Unit	Maximum acceptable value	EU acceptable value	Present value	Planned value	Absolute change	Relative change [%]
–	–	–	–	a	b	$c = a - b$	$d = c/a \times 100\%$
1	2	3	4	5	6	7	8
BOD ₅	g O ₂ /m ³						
COD	g O ₂ /m ³						
Suspended solids	g/m ³						
Nitrogen	g N/m ³						
Phosphorus	g P/m ³						

All of the maximum acceptable values of pollutant concentrations as laid down in the treated sewage disposal permit should be specified in the table.

In column 4 of the table, the relevant EU requirements should be specified, adjusting them to the throughput capacity of the installations built or planned, according to EU regulations.

If transfer collectors are to be built, the data shown in the table should be determined for the wastewater treatment plant that is to process the wastewater delivered by those collectors.

Pollutant loads:

TABLE 2

Pollutant	Unit	Present value	Planned value	Absolute change	Relative change [%]
–	–	a	b	$c = a - b$	$d = c/a \times 100\%$
1	2	3	4	5	6
BOD ₅	Mg/a				
COD	Mg/a				
Suspended solids	Mg/a				
Nitrogen	Mg/a				
Phosphorus	Mg/a				

All the maximum acceptable values of pollutant loads as stipulated in the treated wastewater disposal permit should be specified in the table. In the event of seasonal fluctuations in pollution loads, the assumptions on the values used in the project design (the on and off-season wastewater flow rates and the season duration time) should be specified in the comments to the table.

The expected approximate date of achieving the planned environmental benefit (after completion of the system start-up stage) should also be specified under the table.

Moreover, it is recommended that the Applicant describe the anticipated environmental improvement that is to result from the planned reductions of pollutant loads within the project impact zone.

Apart from the data shown in the tables, the Applicant should detail all significant non-measurable environmental benefits of both domestic and international importance resulting from project implementation.

8. MATERIAL AND FINANCIAL PROJECT IMPLEMENTATION SCHEDULE

Please provide a complete project implementation schedule (including the preparatory stages), prepared in the form of a **table** as shown below:

TABLE 3

Item	Task	Date (month, year) of		Cost [PLN thousand]	Financial progress [%]	Financing source [PLN thousand]
		commence- ment	completion			
1	2	3	4	5	6	7
a. WORK COMPLETED						
	...				100	
	...				100	
b. WORK IN PROGRESS						
	...					
	...					
c. WORK PLANNED						
	...				0	
	...				0	
TOTAL						

All partial tasks composing the project proposed in the *Application* should be specified in the table. A task is understood to be a part of the project that can be taken as a separate unit in terms of its function, technology, or completion time. Taken together, the tasks should total the complete project.

For projects that have commenced, please clearly divide the tasks into the following separate groups:

- Tasks completed, with all related accounts settled and cleared. Please provide the task commencement and completion dates (for these tasks, the financial progress is 100%);
- Tasks in progress. Please specify the task commencement date and the planned task completion date. Please also specify the financial progress (money already spent as a percentage of the total cost of the task);
- Tasks not commenced yet. Please specify the dates for commencement and completion of planned task (for these tasks, the financial progress is 0%). These tasks are of particular interest in terms of their eligibility for EcoFund coverage of a portion or all of their total costs.

For projects that have not started yet, all tasks to be listed in the project implementation schedule should be classified into group “c”.

For tasks that have already been fully or partially completed (groups “a” and “b”), a list of invoices should be compiled in the form as shown below in order to provide documentary evidence of the actual investment outlays already made (please do not submit the invoices).

TABLE 4

Item	<u>Task name</u> Invoice Number	Invoice amount [PLN]	Invoice issuing date	Financing source	Valorisation factor (see Table 5)*	Task cost, valorised [PLN]
..						

* For lump sum contracts, the valorisation factor is equal to 1.

For projects in progress, the portion of the project constituting work completed (group “a”) should not cover a period longer than 3 years, inclusive of the current year. This applies in particular to projects referred to as “open” projects (such as the gradual expansion of a district heating network, construction of successive hydraulic engineering structures, etc.).

The EcoFund will not consider projects where the total financial progress exceeds 60%.

In general, the total EcoFund’s share in covering the project costs remaining to be spent (group “c” and, to some extent, group “b”) should not exceed 60%.

The costs that have already been incurred should be valorised according to the prices of the year when the Application is submitted by multiplying the costs actually borne in the previous years using the valorisation factors specified in **Table 5**.

TABLE 5

1998, the 1 st half	1998, the 2 nd half	1999, the 1 st half	1999, the 2 nd half	2000, the 1 st half	2000, the 2 nd half	2001, the 1 st half
1.365	1.286	1.239	1.178	1.125	1.066	1.012

The costs to be incurred in subsequent years should be stated in forecast prices, i.e., the prices anticipated at the time the costs will actually be incurred, with a brief comment on the adopted cost forecasting method. The particular tasks taken together compose the total cost of the entire project. The Applicant must also specify the time of starting the operation of all project installations at full capacity and the time of attaining the planned performance of the process installations after the start-up period.

When Applicants pay VAT, the amounts shown in column 5 of Table 3 should be listed as net of tax. For all other Applicants, gross amounts should be provided. At the same time, in the field under the table the Applicant should specify which of these options was used to determine the costs. Since the EcoFund does not cover expenditures on VAT, the costs of tasks for which the Applicant is seeking support from the EcoFund should always be specified in net terms.

The support provided by the EcoFund originates from foreign aid that does not need to be repaid. Therefore, the Applicant may be able to recover VAT expenses.

The data shown in column 7 of the table should indicate, in analytical form, the sources of funds to cover the incurred or planned costs of each task. The data shown in the table should be supplemented with a more detailed description of the planned use of the EcoFund resources. When

developing proposals, please remember that the financial aid, if granted, may be allocated toward building the main project facilities or process lines, in particular to purchase process machinery or equipment (such products may also be imported from abroad). The Applicant also needs to take into account the EcoFund's requirements to select contractors and suppliers through a public tender procedure and the fact that supplies from the EcoFund donor countries are preferred.

9. CONTRACTORS AND SUPPLIERS

If the Applicant has already selected specific contractors or suppliers (at the project design or implementation stage), the names of these contractors and/or suppliers should be specified. Moreover, the method of their selection should be described (direct purchase, public or limited invitation to tender addressed to international, domestic, or local bidders, etc.), and the records on the selection of the contractors and/or suppliers (or reports of the tender selection procedure) issued by the tender selection committees should be attached to the *Application*. These documents should include information on the form and date of inviting, opening, and selecting tenders, the number of bidders, the main selection criteria and reasons for selecting the specific contractors and/or suppliers, and the legal basis for the procedures carried out to select the contractors and/or suppliers.

In the case of suppliers other than the product manufacturers, the product manufacturer's name and origin (country) should also be specified. To be clear, the EcoFund supports the delivery of products made in Poland or in the countries taking part in the debt-for-environment-swap.

Applicants subject to the Public Procurement Act should state and support that the tender procedures they conducted to select contractors and/or suppliers were (or will be) organised in compliance with said Act.

If the Applicant is preparing or carrying out a project-related tender procedure to select a contractor or supplier, the tender documentation (or draft documents, as applicable) should be attached to the *Application*, which in particular should include **the call for tenders or invitation to tender, instructions to tenderers, Terms of Reference, tender opening records**, etc.

If contractors and/or suppliers have not yet been selected or the Applicant is not regulated under the Public Procurement Act, it is important that the Applicant explicitly declare that it shall respect the rules of selecting contractors and/or suppliers by tender, as required by the EcoFund and stipulated in the document "Supplier and Contractor Selection Rules Applicable when Receiving Aid from the EcoFund." The assessment of the procedures used by the Applicant to select a contractor and/or supplier and the results of these procedures is one of the main criteria for the EcoFund's final decision on granting support. Therefore, Applicants are strongly encouraged to consult the EcoFund as closely as possible on any actions to be taken in this regard.

Regardless of whether the procedure is subject to the Public Procurement Act, the main documents related to the procedure (the announcement or invitation to tender, Terms of Reference, tender evaluation criteria) must be submitted to the EcoFund **before** these documents are published or revealed to potential bidders.

The essential data on the selection of contractors and/or suppliers should be provided in a **table**, as shown below.

TABLE 6

	Task name	Job or supply ordered	Cost	Planned completion time	Contractor or supplier selection method	Contractor or supplier
1	2	3	4	5	6	7

The task names (column 2) should be identical to those specified in the material and financial project implementation schedule.

The “job or supply ordered” (column 3) refers to the specific scope of work, device or a set of devices, or service (as well as reasonable combination of the above, e.g., purchase and installation of a piece of equipment) ordered from a specific contractor or supplier.

In column 4, the estimated cost of purchases or work items planned should be specified. If the transaction has already been made, please specify the cost as stipulated in the relevant contract.

Column 6 should include information defining the method of the planned (or conducted) selection procedure of the contractor or supplier for the specific task, e.g.:

- invitation to tender (public or limited; addressed to international, domestic, or local bidders);
- competition of offers;
- direct purchase.

If a contractor or supplier has already been selected (using the method specified in column 6), the contractor’s or supplier’s name and the date of contract signing should be provided in column 7.

10. PROJECT FINANCING SOURCES

A list of all sources of financing to cover the project costs should be prepared in a table format as shown below.

TABLE 7

FINANCING SOURCES	FINANCIAL RESOURCES [PLN thousand]							SHARE [%]	
	Used in	Allocated for			Planned for				Total
	2002-2003	2002	2002	2003	2002	2002	2003		
OWN RESOURCES:									
LOANS (source):									
1. ...									
2. ...									
... ...									
GRANTS (source):									
1. ...									
2. ...									
... ...									
ECOFUND	X	X	X	X					
– Loan									
– Grant									
TOTAL:									100.0

The amount of the funds already spent should be consistent with Table 4 (taking into account valorisation).

The Applicant's own resources are understood to be those funds allocated to project implementation from the budget of the local government applying for financial aid, the Applicant's own funds if it is a private business, or contributions from potential future users of the project installations. The nature of "own resources" should be described in the comments to the table and documents confirming that the Applicant has the stated amount of money available should be attached to the *Application*. If the Applicant uses or is planning to use commercial or preferential loans, he should specify the names of the lenders (bank, fund, or other similar financial institutions) and the loan amount, describing also the loan terms that have been or will be contracted (interest rate, repayment conditions, etc.). If the loan has already been extended, a document confirming this fact must be attached to the *Application*.

If the Applicant has obtained subsidies for the project implementation, the names of the subsidy providers and the subsidy amounts should be specified in the table and documents confirming the award must be attached to the *Application*.

If applications for loans or subsidies are under review, copies of the most recent correspondence between the Applicant and the financial institutions involved must be attached to the *Application*.

For each year of the project implementation, the amount of the financial aid requested from the EcoFund should be specified in the appropriate row, for each year.

The funds to cover project costs are divided into costs incurred, allocated, and planned. The funds allocated are understood to be those formally at the Applicant's disposal (supporting documents should be made available to the EcoFund) but not yet released. The other financial resources necessary for project implementation are referred to as "planned" funds. The sum of all funds specified in the table must fully cover the project costs.

11. PROJECT FINANCIAL DATA; DESCRIPTION OF PROJECT OPERATIONS

- *Current (or target, if applicable) operator of the project facilities; legal status of the unit that will bear the costs of operating the project facilities.*
- *Current scope of services provided by the operator of the project facilities; review of the major customers; method of pricing the services provided.*

A – Operating costs

The anticipated costs of operating the project facilities after the project is completed should be presented in annual terms.

All amounts should be specified in current prices for the year in which the Application is submitted. Individual cost items should be classified according to the following table:

For projects where existing facilities are to be modernised or developed, the structure of the operating costs incurred before project start should also be presented, taking into account the annual average consumption of utilities for the past three years.

TABLE 8

SYSTEM OPERATING COSTS	BEFORE PROJECT START	AFTER PROJECT COMPLETION
Fuel		
Electricity		
Other utilities		
Materials		
Gross wages and salaries, including overheads on salaries		
External services		
Maintenance and repairs		
Environmental charges and penalties		
General plant operating costs		
Others (please specify)		
TOTAL COSTS		

B – Revenues from operating the project facilities

The calculation of anticipated revenues to be generated by the project after the project facilities are put into service should be presented in annual terms. The revenues forecast should be presented in terms of quantities and values and describe future potential customers.

For projects where existing facilities are to be modernised or expanded, the revenue structure before project start should also be presented. All amounts should be provided in current prices for the year in which the Application is submitted.

C – Cash flow forecast for the project

A **cash flow forecast table** (see Table 9) should be presented. *The table should be compiled for the project implementation and operating stages, for a time horizon covering the period until all loans contracted, if any, are fully repaid or the period of at least 5 years of the project facilities being in service, whichever is longer.*

TABLE 9

Item	FUNDS AVAILABLE, BY SOURCES	19....	19....	19....
1.	Applicant own investment funds			
2.	Loans contracted and credits incurred for the investment project			
3.	Subsidies			
4.	Receipts from operating project facilities			
5.	Applicant own working capital			
6.	Short-term credits and loans			
7.	Other sources (please specify)			
8.	TOTAL, SOURCES (1+2+3+4+5+6+7)			
	USE OF AVAILABLE FUNDS			
9.	Investment outlays			
10.	Operating costs (less depreciation allowance)			
11.	Repayment of credits and loans			
12.	Interest on credits and loans			
13.	Taxes			
14.	Demand for working capital			
15.	Other use (please specify)			
16.	TOTAL FUNDS USED (9+10+11+12+13+14+15)			
17.	SURPLUS OR DEFICIT OF THE FUNDS AVAILABLE (8-16)			
18.	ACCUMULATED BALANCE			
19.	Project work progress status [%]			

Legend for the table:

- 1-3** – Applicant’s own funds, loans, credits, and subsidies to be allocated toward project implementation, consistent with the amounts declared in the *Application* (see Section 10, “Project Financing Sources”).
- 4** – Receipts from operating project facilities. The amounts listed should be consistent with the calculation referred to in “B – Revenues from operating the project facilities” above. For projects where existing facilities are to be modernised or expanded, please specify the growth in receipts only.
- 5** – Applicant own working capital intended to cover expenses related to generating net working capital or to cover an operating deficit if the turnover is insufficient to cover the operating costs and the costs of financial servicing of the project.
- 6** – Short-term credits and loans intended for the purposes as described in item 5.
- 7** – Other sources of financing, not otherwise specified.
- 8** – Total funds available from all sources in the given year.
- 9** – Total amount of the annual investment outlays for the given year, consistent with the amounts declared in the *Application* (see Section 8, “Material and Financial Project Implementation Schedule”).
- 10** – Annual operating costs (less depreciation allowance). These amounts should be consistent with the calculation referred to in “A – Operating costs” above. For projects where existing facilities are to be modernised or expanded, please specify the incremental costs only.
- 11** – Total amount of the principal instalments payable in the specific year, according to the loan or credit servicing schedule referred to in the *Application* (see Section 10), increased by the repayment of short-term credits and loans, if any.

- 12 – Total amount of the interest payable in the given year, according to the loan or credit servicing schedule, increased by the interest accrued on short-term credits and loans, if any.
- 13 – Any regular payments made to the State Treasury and related to the operation of project facilities (this calculation should be attached to the *Application*).
- 14 – Expenses incurred mostly at the stage of starting-up the project facilities and related to generating net working capital. For projects related, for example, to the water and wastewater management system, this is to be understood as the expenses aimed at providing the adequate stock of consumable materials (mostly chemicals) needed for the proper operation of the wastewater treatment plant. This item should be adjusted to take into account the difference between the balance of receivables and current liabilities and, depending on whether the Applicant pays VAT, the balance of the account settlements related to that tax. For projects in which the start-up period for project facilities is short, the demand for working capital may occur in one year only. On the other hand, if large project facilities are involved where an extended start-up period is necessary, this demand may gradually increase until the project facilities reach their full production or service capacity. Please remember that in the latter case, only the **growth** in the demand for working capital in later years, i.e. the difference between the necessary working capital in a given year and that of the preceding year, should be provided in the table.
- 15 – Other expenses to be covered from other financing sources, not otherwise specified.
- 16 – Total amount of all expenses to be incurred in the given year.
- 17 – Surplus or deficit of funds available, as shown in cash flows.
- 18 – Algebraic sum of the balances of the funds available in the preceding years and in the year in question. In the first year, the accumulated balance is equal to the amount specified in item 17. In each subsequent year, the accumulated balance is the sum of the amounts specified in item 17 for the given year and in item 18 for the preceding year.
- 19 – Physical progress of the construction and assembly works at the end of the specific year, in percentage terms (when the project facilities are put into service, the physical progress is 100%).

The time horizon for the cash flow forecast should cover the project implementation period, the start-up of project facilities, and the operating the project facilities for at least 5 years or until all financial liabilities incurred for the project are repaid.

12. APPLICANT CURRENT FINANCIAL AND INVESTMENT LIABILITIES

The relevant data and information should be presented in a format as shown below:

A. Credits and loans contracted

Please specify the purpose and amount of the credit or loan, the financing institution, the amount of the credit or loan paid back as of the date of compiling the data, and the form of security. Please complete the table below to show the continued plan for servicing the credit or loan.

TABLE 10

PRINCIPAL TO BE REPAID		INTEREST TO BE PAID	
Instalment amount	Date	Interest amount	Date
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
.....
Principal to be repaid, total		Interest to be paid, total	

B. Guarantees

Please specify the name of the unit for which the guarantee has been given, the subject and amount of the guarantee, and the time schedule of settling the possible liabilities thus undertaken.

C. Securities issued

Please specify, in annual terms, the total amount of the liabilities arising from securities (bonds, commercial coupons, etc.) issued.

D. Other investment projects concurrently implemented

Please provide a list of all other projects under implementation as well as the total project costs, amounts already disbursed, amounts planned for disbursement (by years), and financing sources (in particular Applicant's own share). If the Applicant is a municipality (or another administrative unit represented by a local government), only projects for which the project cost exceeds 1% of the annual budgetary expenditure should be reported.

In addition, the following documents and materials should be attached to the Application:

a) Applicants subject to the Act on Accounting (excluding local governments, budgetary units, and forest inspectorates):

- Financial reports (income statement, balance sheet, and cash flow statement) for the three most recent years, prepared in compliance with the rules and standards set out in the Act on Accounting;
- Complete report by a statutory auditor of the financial reports of the most recent accounting year (applies to entities that are required by law to have their statements audited);
- Confirmations issued by the tax office and social insurance agency to certify that the Applicant has no outstanding payments to the State budget;
- Opinion of the bank managing the Applicant's main account;
- List of the subsidies received over the past 3 years from sources other than the State budget (also specifying the name of the financing institution, purpose and amount of the subsidy, and period of use).

b) Local governments:

- Local government budget performance reports for the past three years and for the quarter preceding the day on which the Application was submitted, drawn up in the form required by the executive order of the Minister of Finance on preparing quarterly reports of the performance of municipal budgets;
- Current budget resolution, including the appendix on capital investments;
- Budget plan for the next year;
- Opinion of the regional accounting chamber [agency that checks budgetary compliance in Poland] on the budget;
- Opinion of the bank that manages the Applicant's main account;

- List of the subsidies received over the past three years from sources other than the State budget (also specifying the name of the financing institution, purpose and amount of the subsidy, and period of use).

c) *Applicants that are not subject to the Act on Accounting:*

- Copies of annual tax declarations submitted to the tax office for the past two years;
- Summary showing the structure of revenues for the past two years (specifying the sources and amounts received);
- List of subsidies received over the past two years from sources other than the State budget (specifying the name of the financing institution, purpose and amount of the subsidy, and period of use).

d) *Budgetary units:*

- Report on the performance of the budget resolution for the past year;
- Budget resolution for the current year, demonstrating adequate funds for the investment project;
- List of subsidies received over the past two years from sources other than the State budget (specifying the name of the financing institution, purpose and amount of the subsidy, and period of use).

e) *Forest inspectorates:*

- Financial reports (income statement, balance sheet, and cash flow statement) for the past two years, prepared in compliance with the rules and standards set out in the Act on Accounting;
- Complete report of a statutory auditor on the annual financial report of the most recent accounting year (this only applies to forest inspectorates that are obliged by law to have their financial statements audited);
- Information about the amounts written off for the Forest Fund and the supplementing payments received from that Fund for the past 2 years;
- Confirmation issued by the Regional Directorate of State Forests to guarantee the availability of forest inspectorate's own funds as declared in the ***Application*** in the table on project funding;
- List of the subsidies received over the past two years from sources other than the State budget (specifying the name of the financing institution, purpose and amount of the subsidy, and period of use).

The EcoFund may also require additional documents as a prerequisite for examining the Application.

13. APPLICANT DECLARATION

The signatures of the Applicant's representatives responsible for preparing and submitting the *Application* (found on *the last page of the Application* and shown in these "Instructions") demonstrate that the Application for aid has been formally submitted to the EcoFund Foundation and, at the same time, constitute a declaration that all information provided is true and accurate.

14. APPENDICES

The Appendices specified on the "*List of Appendices*" form, shown in these "Instructions," constitute an integral part of the *Application*. More details about the appendices may be found in this text. While Appendices must be submitted, there are a few exceptions to this rule. First, the requirement to present a feasibility study (item 1 on the "*List ...*") applies to new projects only and the requirement to present an "Environmental Impact Assessment of the Project" (item 2.2) is only applicable to projects for which the preparation of such an "Assessment" is required by law. Moreover, the external experts' opinions and reviews (item 7) should only be submitted if they were formulated during project preparation. With regard to the required permits (item 2) and documents confirming the availability of adequate funds (items 5 and 6), the Applicant may submit them after the EcoFund has begun the *Application* evaluation process. In addition, the scope of the tender documentation for the selection of contractors and suppliers (item 3) depends on the status of that process at the time of submission of the *Application* to the EcoFund.

If any of the required Appendices is unavailable at the time of submitting the *Application*, this should be indicated in the List of Appendices. The blank space provided should be used to specify the reasons for this fact, the current status of preparing or obtaining the missing document, and, if possible, the expected date upon which the document will be submitted to the EcoFund. On these grounds, the EcoFund may consider evaluating the *Application* on a provisional basis.

The Appendices constitute an indispensable supplement to the *Application* and other documents cannot be substituted. This means that submitting other documents does not release the Applicant from the obligation to provide all the information required by the EcoFund, as specified in these "Instructions."

NOTE

The EcoFund Foundation reserves the right to require additional information about the Applicant and the proposed project, if this need arises from the specific nature of the project or the terms and conditions of the competitions organised by the Fund.

DECLARATION

I hereby declare that all data provided in the “*Application for EcoFund Financial Aid*” are true and accurate.

I also declare that if a loan and/or grant is awarded, it will be used exclusively for the purposes as specified in the “*Application*” in accordance with the contract concluded with the EcoFund as stipulated in the “*Financial Aid Agreement*.”

**Personal data (or stamp)
of the person who prepared the Application**

**Personal data (or stamp)
of the person who submitted the Application**

(Date and signature)

(Date and signature)

Act on the Protection of Economic Commerce and on Changing Certain Provisions of the Penal Code” (Journal of Laws No. 126 of 30 November 1994, item 615):

Art. 3. § 1. If those seeking to obtain a credit, loan, credit guarantee, grant, subsidy, subvention, or other form of public aid submit a falsified document or one that asserts a falsehood or make unreliable declarations related to circumstances important to the obtaining of such a credit or loan, credit guarantee, grant, subsidy, subvention, or other form of public support, they are subject to imprisonment of up to 5 years.

ECOFUND'S RESERVATIONS, REQUIREMENTS, AND GENERAL REMARKS

1. The information and data of any kind provided in the *Application* or in the Appendices will be exclusively used by the EcoFund for the purposes of evaluating the project in order to make a decision on providing financial aid to the project in the amount requested. The Applicant may additionally claim confidentiality of some of the information provided due to its commercial importance.

2. The EcoFund will only review *Applications* that are complete, i.e., where all the information required has been provided and all documents required have been submitted.

3. Before any *Application* is submitted to the EcoFund Council for consideration, it will be verified by EcoFund's specialists in accordance with the EcoFund's environmental, technical, and economic criteria. If any significant discrepancy is found between the data provided in the Application and the actual status, the *Application* review process will be terminated.

4. The EcoFund may propose that the Applicant introduce changes to the project, making further review of the application contingent on the Applicant's acceptance of this proposal. This may apply to the scope as well as the technical and organisational details of the project in that portion which is to be supported by the EcoFund, and in particular to the planned selection of contractors and suppliers within the scope of the project tasks to be financed by the EcoFund. As a rule, the EcoFund may provide financial aid for projects involving Polish contractors or contractors from the countries taking part in the debt-for-environment swap. Imported equipment financed through EcoFund grants should also be purchased from these countries, which should be confirmed by submitting certificates of origin. As of 30 April 2001, these countries are: France, Italy, Norway, Sweden, Switzerland, and the United States.

APPLICANT:

LIST OF APPENDICES TO THE APPLICATION FOR FINANCIAL AID

- | | | | |
|-------|--|------------------------------|-----------------------------|
| 1. | <u>Feasibility study</u> | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 2. | <u>Permits and approvals as required by law</u> | | |
| 2.1 | Documentary evidence of the legal title of ownership of the real estate involved | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 2.2 | Major environmental permits and licenses (e.g., treated wastewater disposal permit) [if YES, 2.4 is NOT applicable] | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 2.3 | Environmental Impact Assessment of the Project | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 2.4 | Opinions on environmental protection issues (e.g., issued by the Regional Epidemiological Control and Hygiene Promotion Station) | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 2.5 | Construction permit or validated notification of construction commencement
[if YES, 2.6 is NOT applicable]
(A validity statement should be attached to these documents) | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 2.6 | Decision on the Site Development and Management Requirements | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 3. | <u>Tender documentation for the selection of contractors or suppliers</u> | | |
| 3.1 | Reports or records of the selection of contractors and/or suppliers through tenders | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 3.2 | Tender documentation on the procedures under preparation or already conducted to select a contractor or supplier (calls or invitations to tender, instructions to tenderers, Terms of Reference, tender opening records, or appropriate draft documents) | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 3.3 | Contract(s) concluded with the Contractor(s) | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| | | | |
| 4. | <u>Financial documentation related to the Applicant</u> | | |

a Business entities

- 4.1 Documents confirming the Applicant's legal status, including the appropriate permits and/or licenses for conducting business activities (if the permits and/or licenses are required by law) YES ☐ NO ☐

.....

- 4.2 Description of the activities conducted over the past 3 years, including financial reports (income statement, balance sheet, and cash flow statement), prepared in compliance with the rules and standards set out in the Act on Accounting YES ☐ NO ☐

.....

- 4.3 Reports of statutory auditors on the annual financial reports (for the past 3 years) YES ☐ NO ☐

.....

- 4.4 Confirmations issued by the tax office and the social insurance agency certifying that the Applicant has no outstanding payments to the State budget YES ☐ NO ☐

.....

- 4.5 Opinion of the bank that manages the Applicant's main account YES ☐ NO ☐

.....

b Local governments

- 4.6 Municipal budget performance reports for the past 3 years and for the quarter preceding the day upon which the Application was submitted, prepared in a format required by the executive order of the Minister of Finance on preparing quarterly reports on the performance of municipal budgets YES ☐ NO ☐

.....

- 4.7 Current budget resolution, including the Appendix on the capital investment plan YES ☐ NO ☐

.....

- 4.8 Budget plan for the next year YES ☐ NO ☐

.....

- 4.9 Opinion of the regional accounting chamber on the compliance of the budget with the law YES ☐ NO ☐

.....

- 4.10 Opinion of the bank that manages the Applicant's main account YES ☐ NO ☐

.....

c Associations and foundations

- 4.11 Copies of the financial reports submitted to the tax office for the past 2 years YES ☐ NO ☐

.....

d Budgetary units

- 4.12 Extract from the budget resolution to confirm that adequate funds have been made available in the budget for the investment project YES ☐ NO ☐

.....

5. Documents to confirm the availability of adequate funds from Applicant's own resources YES ☐ NO ☐

.....

6. Documents to confirm the availability of adequate funds from other sources YES ☐ NO ☐

.....

7. Experts' opinions and reviews YES ☐ NO ☐

.....

8. Other YES ☐ NO ☐

.....

.....

.....

.....

(Signature of the person
submitting the Application)

Annex II.4: Calculating cost indicators

Cost indicators are divided into static and dynamic indicators. Two major static indicators, the unit investment cost and the unit operating cost, are largely in use at the CEE and EECCA environmental funds. The unit annual cost and the dynamic generation cost are dynamic indicators that yield results that can be used to rank alternatives based on more consistent economic grounds.

Static Indicators

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 to calculate cost-effectiveness. This is a simple ratio between investment expenditures and an environmental effect that is generated in the first year after investment completion.

Box II.4.1: 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 operating and maintenance costs. Second, UIC does not account for differences in the operating period of installations. It is possible that a more expensive device will serve longer than a cheaper one; yet, the UIC will always give preference to the latter. Third, UIC is not sensitive to changes in the profile of the environmental effect. It may occur that a reduction in pollution will change over the lifetime of an investment (e.g., a plant will be closed or the production profile will change to one less polluting). Hence, UIC should not be used in professional cost-effectiveness analyses.

In general, however, it is better to use a simplified tool than use nothing. The Polish National Fund, for example, when using this indicator, tries to compensate for some of its deficiencies. In addition to UIC, it calculates two separate measures that control for operational costs. These are discussed in the sub-section below.

Unit operating cost

The first measure is a ratio of total annual operating costs divided by the environmental effect. The second measure is a ratio of total annual energy consumption divided by the environmental effect.

Box II.4.2: Formula for calculating unit operating cost

$$UOC = OE / EE$$

Where:

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

Dynamic indicators

Unit annual cost

Unit Annual Cost (UAC) allows the linkage of investment expenditure and O&M costs. UAC is calculated as the sum of Annualised Capital Cost (ACC) and annual O&M costs (the annualised cost of a project or AC) divided by the average environmental effect expressed in physical units. The Polish EcoFund, for example, uses this approach. The generic formula takes the form presented in Box II.4.3.

Box II.4.3: 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 operating 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 and in most cases produces a ranking of options that is consistent with true cost-effectiveness. This is true when there is a uniform distribution of the environmental effect across options.

In order to understand this feature, it is useful to see how the timing of attainment of environmental effects impacts social welfare, as illustrated in the following example. A polluted lake needs to be revitalised and two options have been identified to do so. Each option involves the same profile of expenditures. One technology, however, will clean the lake in the next year, while the other in three years' time. A rational citizen, or implementing agency for that matter, would prefer the former, as this would allow people to enjoy an additional stream of environmental benefits generated

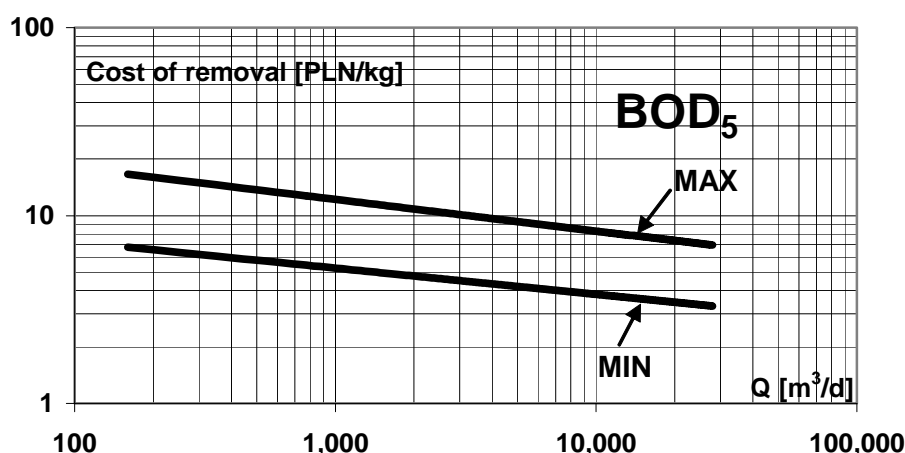
by the cleaned lake two years sooner than the second option. The sooner an environmental effect is achieved, the better for society and thus time matters in investment projects.

UAC fails to account for the distribution of environmental benefits over time. UAC will give an equal rank to an investment that produces 10 units of environmental effect in the first year of operations and 1 unit per year in the remaining 9 years of operation and an investment that has the reverse 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, however, 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 to the values already observed in similar projects previously implemented. Figure II.4.1 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 II.4.1: Example of an environment indicator



Source: Polish EcoFund.

When there are more pollutants in effluents (e.g., 4 pollutants - BOD₅, suspended solids, 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, the two best values are used in the point-based assessment.

Dynamic generation cost

Dynamic Generation Cost (DGC) is a ratio between discounted costs and discounted benefits. This index has a structure similar to that of the cost-benefit ratio used in CBA. Benefits are not monetised, but instead are expressed in physical units. The DGC formula is provided in Box II.4.4.

Box II.4.4: 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 2002¹⁴. This has significantly improved the Fund's appraisal procedure.

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

¹⁴ Most development banks use DGC (see, for example, ADB, 1999). Each institution, however, uses a different term to describe it.

Annex II.5: Selecting the discount rate and calculating financial viability indicators

Anyone who has ever considered saving should understand discounting and thus the discount rate. For example, suppose a household has a total of USD 1 000 at its disposal and that it has two choices: spend the money or save it. If it chooses to spend the money now, the value of its spending will be USD 1 000. If it deposits the money in a bank at an interest rate of 5 percent per year and takes the money out the following year, it would then have USD 1 050 to spend. In two years, if the money is not withdrawn previously, this value would grow to USD 1 102.50. Thus, it follows that a dollar now is worth more than a dollar later, because a dollar saved now can be converted to more dollars later. This is also true for a benefit or cost: a benefit or cost is worth more now than later, because the present benefit or cost can be “saved” and converted into more later.

Benefits and costs realised at different times can be made comparable by expressing them in terms of present values. Thus, whenever a sum is realised, it is expressed as if it were received today. The key to converting is to have a “conversion” rate. This is the discount rate. Thus, the discount rate reveals preferences between present and future investment or consumption. A discount rate of 10 percent means that USD 0.91 of consumption (investment) today must be foregone to obtain USD 1.00 worth of consumption (investment) in the future (as found using the discounting formula $1/(1+r)$). On the other hand, with a discount rate of 5 percent, USD 0.95 of consumption (investment) today must be foregone to obtain USD 1.00 worth of consumption (investment) in the future. Thus, the higher the discount rate, the lower the value of the future benefit.

In short-term investments, the discount rate is not so important in evaluating the stream of costs and benefits. When dealing with long-term investments, however – such as environmental infrastructure projects that the agency will finance – the selection of the discount rate becomes very important. For instance, in considering a stream of benefits of USD 1 000 per year for a period of 5 and 30 years, the choice of the discount rate will make a considerable difference. In a five-year period, a discount rate of 5 percent will yield a net present value about 14 percent higher than the net present value using a discount rate of 10 percent. For a stream of benefits spread over a thirty-year period, however, a discount rate of 5 percent will yield a net present value about 63 percent higher than the net present value using a discount rate of 10 percent. Thus, as a benefit stream gets increasingly longer, the influence of the discount rate increases, with the higher discount rates effectively making the future benefits count for much less than the lower discount rates. As the time horizon grows, the difference becomes increasingly great and these greater differences are cumulated into a present value sum, the difference in which also becomes increasingly great. An apparent small difference between discount rates can translate into very large differences in present values for long-term projects. Thus, it is easy to see why a lower discount rate (even below interest rates) may be termed the “social” discount rate – signifying that future benefits count for more. A higher, or commercial rate, leads to under-valuation – and thus perhaps under-investment – of future benefit streams that typically arise for public sector and environmental projects.

For example, the Krakow Regional Fund uses two discount rates in its analysis: the social (S) and the commercial (C) discount rate. The social discount rate is used for public investments. It is the lowest possible discount rate applied in evaluating public sector projects with high social benefits. The commercial discount rate is understood by the Fund as the lowest discount rate acceptable in the commercial sector. The selection of these two discount rates for project evaluation is based on the Fund’s internal decision-making based on the available information.

The selection of the discount rate is a subject of much debate by economists and deals with issues of the relative valuation of future versus present generations, the effect of public investment on private

investment (for instance, possible crowding out), and other issues. If capital markets worked perfectly, the market rate of interest would appear to be the appropriate social discount rate. Since they do not, other considerations also come into play. Future generations do not have a direct voice in current markets, yet perhaps they should have some standing in economic analysis. This is evidenced in the willingness of people to pass inheritances to their children and to pay to preserve unique resources, thus giving indirect standing to future generations. Future generations in theory inherit a larger wealth of knowledge than current generations, but at a cost of current consumption of natural resources. Taxes can create a gap between the rate of return on private investment and the rate at which consumers are willing to trade current and future consumption. Adjustments for risk are also another factor that may be considered.

One method of defining the discount rate is recognising that each investment may be considered as foregoing some kind of current consumption in favour of some less certain future benefit. The reward for this assumption of risk is the rate of return (interest rate). The rate of return is the sum of four components:

- real rate of return (rr) – cost of money at market equilibrium (supply equals demand);
- inflation rate (ir);
- liquidity premium (lp) – considers the period of investment. Investments with longer periods of return have a premium;
- risk premium (rp) – price of risk connected with the investment.

Thus, the rate of return (interest rate) is: $r = rr + ir + lp + rp$. The discount rate in this scheme is the sum of the real rate of return, the liquidity premium, and the risk premium. Clearly, this requires access to much information. The Asian Development Bank, for example, specifies four separate approaches to estimating the discount rate for economic analysis, which focus on, respectively:

- Economic rate of return on alternative marginal projects or the economic opportunity cost of capital. This is done in order to select investments that yield a minimum rate of return that is not exceeded by other possible investments.
- Real cost of foreign borrowing. This ensures that investment funds are committed to projects that will be able to meet the country's debt obligations, especially where investment is highly dependent on inflows of foreign capital.
- Real rate of return on the capital market. This indicates the return a project must earn before investors will forego more liquid types of investment to invest in physical assets.
- Overall demand and supply of investment funds. This provides an overall estimate of the economic price of capital.

A final approach used is to report values for NPV over a range of discount rates. For policy, however, the most important issue is to choose a consistent rate at which to evaluate all projects that are to be ranked and considered for financing. For such cases, the government should specify the discount rate.

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

Box II.5.1: 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 discount rate

IRR is calculated using the following equation.

Box II.5.2: 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.

Annex II.6: Package of appraisal criteria in use at the Polish EcoFund

Table II.6.1: Protection of lakes of high natural value

Project title:

No.	Type of criterion	Number of points achievable	Project evaluation
1	<u>Criteria concerning valuable natural features and threats</u>		
1.1	- Natural value of lake (annex no. 1)	up to 30	
1.2	- Vulnerability to degradation and assessed anthropopressure (annex no. 2)	up to 30	
	TOTAL item 1 max	60	
2	<u>Technical and environmental criteria</u>		
2.1	Magnitude of pollutant source Q average ('000 m ³ /d) (assessed from function*)	up to 50	
2.2	<u>Main investment tasks in project</u>		
	- Construction of a new wastewater treatment plant or collector as alternatives	40	
	- Modernisation or redevelopment of a treatment plant	20	
	- Construction of sludge management installations	10	
2.3	<u>Complexity of sludge management solutions</u>		
	- Preparation for natural disposal	10	
	- Minimisation of sludge volumes	5	
2.4	<u>Sewer network coverage in project area after project completion</u>		
	- Over 70 %	20	
	- 40 - 70 %	10	
	- Below 40 %	0	
	TOTAL item 2	120	
3	<u>Economic criteria</u>		
3.1	<u>Indicators of pollution abatement costs</u>	up to 40	
3.2	<u>IRR indicators of investment profitability</u> (assessed from function*)	up to 20	
3.3	<u>Level of own resources</u> (assessed from function*)	up to 20	
	TOTAL item 3	80	
	Maximum number of points	260	
	Minimum total points required	130	
	Number of points awarded to project		
	Percentage of total points achieved		

* "Assessed from function" means the comparison of a unit cost of reducing BOD, N or P in a project against an established benchmark based on an average in already accepted and implemented projects. Initially, the agency will not have access to such historical data. In this case, it should adopt a theoretical benchmark from economic literature or based on the experience of other similar institutions. Over time, the agency can develop its own database. The EcoFund began using its own benchmarks after the implementation of its first 30 projects; this required three years of operations.

The criteria presented below are used to assess the lake's natural value. The result of the assessment is given under item 1.1 of the project's points assessment.

No.	Feature	Number of points achievable	Project evaluation
1.	Nature Reserves and "lobelia lakes"	30	
2.	Lakes in which underwater meadows occur deeper than 8m, and species include crayfish and/or lake trout and/or whitefish (at least one of these species)	20	
3.	Lakes in which underwater meadows are present at depths of 5 - 8 m, while the dominant predatory fish are pike and perch	15	
	TOTAL (maximum)	30	
	Number of points achieved by project:		

The criteria presented below are used to assess the anthropopressure to which the lake in question is subject. The result of this assessment is given under item 1.2 of the project's points assessment.

No.	Feature	Number of points achievable	Project evaluation
1.	<u>Susceptibility of lake to degradation</u>		
a.	Susceptibility class I	8	
b.	Susceptibility class II	4	
c.	Susceptibility class III	2	
d.	Beyond classification	0	
2.	<u>Anthropopressure</u>		
a.	Location of point sources of pollution within lake basin – distance from lake		
	- directly on lake	4	
	- up to 5 km	2	
	- up to 10 km	1	
b.	Surface pollutants		
	- over 50% of shoreline in agricultural use:		
	flat land	8	
	inclined land	12	
	- up to do 50 % of shoreline in agricultural use:		
	flat land	5	
	inclined land	8	
	- no agricultural use	0	
c.	Diffused sources		
	- very intensive use in tourism (numerous holiday centres)	6	
	- intensive use in tourism (holiday centres)	3	
	- moderate level of use in tourism (no holiday centres)	1	
	- no use in tourism	0	
	TOTAL (maximum):	30	
	Number of points obtained by project:		

Annex III: Cash flow and loan portfolio management

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

Cash flow management

Effective cash flow management implies skills to manage financial resources in a sound and prudent manner 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, proper risk assessment is key to the success of these operations. Any of the existing options has its advantages and disadvantages and the agency should carefully weigh them before making a final decision on where to invest, under what terms and conditions, and what debt instruments to employ to cover shortfalls.

The types of revenue 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 a more detailed discussion on this issue). The agency should aim to manage its cash flow in such a way that ensures smooth budget performance and liquidity of its operations. Even if the budget is well prepared and based on realistic and objective aggregate revenue and expenditure estimates, however, the agency could still experience cash flow shortages, or alternatively, have 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 only invest in secure instruments, such as time deposits at selected commercial banks or state bonds. Risky instruments that can jeopardise the public money the agency manages should be avoided. For example, the Slovenian Fund invests in treasury bonds and bills of the Bank of Slovenia and stable foreign currencies. It is important that the agency’s legislation explicitly prohibit risky financial investments and 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 can have initial maturities of 10 years. Treasury bills, on the other hand, are short-term securities most often with a maturity of 52 weeks. For obvious reasons, treasury bills could be the more appropriate instrument in which to invest.
- **Time deposits** are also a safe financial instrument. Holding time deposits in the commercial bank that also manages the agency’s accounts could be a very good option for investing the temporarily available resources, as such a bank can often offer very good deposit rates (for example, the Slovenian Fund practices this).

Risk mitigation measures

Making financial investments always carries some risk and in order to diversify the risk, the agency should seek to invest in different instruments. One way to reduce risk is to hire external brokers or internal investment bankers to provide the agency with competent advice on such operations. Obviously, using bankers in such a capacity costs money. These additional costs can 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 in which it is considering investment. 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 the agency should avoid them.

Box III.1: Minimum risk mitigation measures in cash flow management

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

- ✓ Invest in safe instruments only – such as time deposits and state bonds;
- ✓ Conduct 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. Most of the approaches proposed below, however, are typically available to agencies that 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 the section on Loan portfolio management below).

Another option to cover shortages is to **borrow on the financial market**. In most countries, agencies that manage public environmental expenditure are not permitted to borrow directly on the market (this applies in particular to long-term borrowing). Only the Ministry of Finance, on behalf of the agency, 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 a bond issue. 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, the European Bank for Reconstruction and Development (EBRD), or the European Investment Bank. These institutions often offer attractive terms on their loans as they prefer disbursements of large instalments while charging implementing agencies with the on-lending to final clients and with the management of individual small projects and investors. These institutions, however, 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 (or a portion of) its loans** to a bank at a discount rate that 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 obtain cash immediately. If cash is urgently needed, the agency could also raise debt from the general public by **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 of properly identifying the risks in projects and borrowers. Most commercial banks have staff specialised in risk management. Most public implementing agencies or smaller banks do not have such capacity. 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 the conduct of proper due diligence, including risk and collateral assessment. Hiring such experts is usually expensive and often unaffordable for agencies in the 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. In order to be able prudently to value loans, the agency should have a **system to classify reliably 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 recovery 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 monitor and analyse collateral periodically, 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 of principal and interest in a timely manner (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:
 - risk of non-performance of the planned activities or non-achievement of the planned environmental effects within the specified period of time;
 - risk related to the application of new technologies and high share of construction and assembly works;
 - risk related to interest rate variations, changes in tax regulations and potential exchange rate fluctuations/variations;
 - risk related to the long-term financial forecasts; the longer the term, the higher the risk of the forecasts not 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. Different ways exist to secure loans. Some of the major collateral types that the agency can accept include:

- state guarantees;
- bank guarantees;

- mortgages.

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

- relevant government guarantee;
- guarantee of a bank acceptable to the Fund;
- mortgage on a market attractive property, acceptable to the Fund, of at least twice the value of the loan after the borrower has obtained a positive opinion on its creditworthiness from a rating agency (a list of rating agencies is an integral part of Tender Documents);
- other equivalent (first-class) security 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 the possibilities to develop in-house skills to manage properly 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 III.2: Mortgage as collateral

A 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 becoming increasingly popular with investors as a way, among others, to avoid obtaining costly bank guarantees. yet, this instrument requires the existence of a relevant legal framework (e.g., Law on Mortgages) which is clear about:

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

When using a mortgage as collateral, accurate methods for appraising 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 entire 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 with a total portfolio of about Euro 100 million, would pay for 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 a loan portfolio fully in-house could become a viable option to consider.

Box III.3: In-house loan portfolio management

The Slovenian Environmental Development Fund is among the very few CEE environmental funds that developed very strong in-house skills in loan portfolio management. The Fund 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 also developed detailed operational rules for portfolio management that are strictly enforced by management and complied with by staff, including good internal control practices. The Fund enforced a consistent collateral policy, which helped ensure loan repayments and maintenance of the real value of the Fund's capital. Fund employees monitored the borrower's financial position throughout the entire loan repayment period. In addition, the Fund also controlled the borrower through its annual balance sheets and business reports and constantly measured its creditworthiness. In addition, the Fund maintained its own rating system. The Fund classified its borrowers into groups from A to E, depending on their financial position and their repayment practices (including overdue payments).

The Fund also developed a clear system of loan repayment by instalments. The Fund required borrowers to pay their debt instalments quarterly. The fee for servicing the loan was also paid each quarter. Interest on loans was paid monthly starting from the beginning of the grace period. Such a system helped improve the quality of loan supervision as the borrower was closely monitored throughout the whole repayment cycle, including the grace period.

If problems with loan repayments occurred, the Fund established a reminder procedure. When the repayments were overdue for more than 14 days, the Fund initiated the reminder procedure by sending a letter to the delinquent borrower. If over the following 30 days the borrower had not yet paid his debt, the Fund proceeded to collateral guarantees. As these steps were implemented systematically, the Fund had a very small percentage of bad loans.

(ii) Outsourcing loan portfolio management

If the agency has not reached a sufficient level of maturity and does not manage a substantial amount of resources, outsourcing 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 may already be available at the bank and well-tested in many credit operations. The incremental cost of the bank of adding one additional portfolio will be 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 (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 cases, the agency should cease its lending operations to the enterprise sector and sell its loans.

When bad loans are sold, they usually go for 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 it puts up for sale¹⁵.

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 that offers the most attractive conditions. One way to achieve this is to hold a public tender and invite all interested parties to submit a bid. It is important that the selected bank should have, among others, trustworthy management, a good reputation, and a well-developed information system.

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

¹⁵ 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 repaid.

Annex IV: Checklists for measuring compliance with Good Practices for PEEM¹⁶

The Checklists below can be used to measure the performance of public environmental expenditure programmes against good practices. Each of the three Checklists contains five major principles, which are operationally described in the right column of the checklist. Performance auditors can assign the three following scores to each principle: “**zero**”, if no good practices are applied, “**one**”, if some but not all good practices are applied, and “**two**” if all good practices are applied. The scope of application of the good practices is assessed by assigning a “yes”, “no” or “partially-applied” judgement. In this way, any particular programme or its implementing agency can achieve a maximum of ten (10) points in each performance dimension. In order to visualise the results of performance assessment, a performance triangle is constructed by plotting the score in each dimension on the three axes of a radar chart.

Checklist 1. Performance in terms of environmental effectiveness

Principle	Good practices
1. Additionality and consistency with other environmental policy instruments	<ul style="list-style-type: none"> • The need for any proposed public environmental expenditure programme should be justified with reference to the Polluter- or User-Pays Principles. Public funds cannot and should not substitute for weak environmental policies; they should not be spent on achieving environmental objectives that could have been attained with administrative or economic instruments or by eliminating environmentally-harmful subsidies. • Public funds should not be used for environmental projects that would have been implemented anyway e.g., projects that have high, risk-adjusted financial rates of return and could have been financed privately. • Public environmental expenditures should reinforce other environmental policy instruments and be consistent with their stated objectives. • Public expenditure programmes typically should be used to finance investments in fixed assets or precisely defined non-investment projects, and not the operational costs of environmental administration. • External auditors should periodically review the environmental value-added of public expenditures; there should be provisions to phase out public funds after they have fulfilled their purpose.
2. Well- defined programming framework	<ul style="list-style-type: none"> • Public funds should be spent in the framework of a publicly-available expenditure programme approved by appropriate authorities. • The expenditure programme ideally should specify measurable, agreed, realistic, time-bound objectives. It should identify eligible beneficiaries, financing needs, eligible project types and rules to guide decision-making so that objectives could be met at least cost. • Expenditure programmes should be established as part of a wider environmental programme or policy. • Economic, social, poverty reduction or other non-environmental objectives may be integrated into the public environmental expenditure programme, but, unless explicitly included in the expenditure programme objectives, they should not undermine the achievement of the programme’s environmental objectives. • The wider economic effects of public environmental expenditure programmes (e.g., in terms of public deficit, growth, employment) should be assessed, where appropriate, prior to their establishment and further evaluated during implementation.

¹⁶ See “Good Practices for Public Environmental Expenditure Management“, (C(2006)84).

3. Clear identification of environmental outcomes	<ul style="list-style-type: none"> • Standard application forms should be used to the extent practicable to solicit quantitative and qualitative information on projects' environmental outcomes. Once obtained, the accuracy and reliability of this information should be verified. • Indicators of environmental outcomes should be as unambiguous as possible and used as essential criteria in project appraisal and selection. Where appropriate, environmental outcomes should be valued in monetary terms for the purpose of explicit benefit-cost testing of projects. • Environmental outcomes should be monitored throughout the project cycle and after implementation; project level environmental data should be stored in a publicly available database that allows <i>ex post</i> verification and analysis. • If the project fails to achieve its intended outcomes, as stated in the application form or the contract, project beneficiaries should be liable to sanctions specified in the contract and enforced in proportion to the violation. • Information on the environmental results achieved by the programme should be periodically reported to those responsible for programme oversight and to the public, reviewed by external auditors and used to assess the programme's performance.
4. Maximising environmental effect from available funds	<ul style="list-style-type: none"> • Quantitative information on full, life-time project costs (investment, operating and maintenance) should be requested from applicants in a standard application form and verified; project level cost data should be tracked and stored in a database format in a way that allows <i>ex post</i> verification and analysis. • Project selection criteria should aim to achieve the greatest environmental outcome with the programme's resources. A clear cost-effectiveness indicator (unit lifetime cost of achieving environmental effects) and the rate of financial leverage should form the core of the quantitative basis for appraisal, scoring, ranking and selecting projects. Where justified by project size or other relevant considerations, project selection should be supported by transparent benefit-cost analysis. • Quantitative information on cost-effectiveness should be periodically reported to those responsible for programme oversight and to the public, be subject to periodic external, independent reviews and be used to assess the programme's performance.
5. Leveraging additional finance	<ul style="list-style-type: none"> • To maximise their environmental impact, public funds should aim to cover less than 100% of project costs; options for co-financing by the retained earnings of the beneficiary or other sources should be assessed. • The rate of financial leverage should be used to assess the programme's performance. • Public environmental expenditure programmes should not distort competition in financial markets, nor obstruct the development of private financial institutions. Financial products used in environmental expenditure programmes should not compete with those offered by private financial institutions. • Full financial plans of environmental projects should be required; commitments for financing from other sources should be verified. No disbursement should be made until full financing for the project is adequately secured.

Checklist 2. Performance in terms of budgetary good practice

Principle	Good practices
1. Fiscal integrity of revenues	<ul style="list-style-type: none"> All financial resources available to public environmental expenditure programmes should be clearly specified in the enabling legislation or regulation. If the financial resources managed within the programme come directly or indirectly from compulsory transfer payments (taxes, charges, fees), they should be treated as public funds in the meaning of the rules and regulations applicable to public finance, public procurement and/or state aid, as appropriate. As such, these resources should be subject to the usual fiscal discipline and requirements for transparency. Revenues should be recorded in treasury accounts before they are allocated to the environmental expenditure programme.
2. Avoiding constraints to efficiency	<ul style="list-style-type: none"> Earmarking of revenues should be avoided as it usually results in inefficient use of public resources. However, if it is demonstrated that the advantages of earmarking outweigh the risks, an expenditure programme may be established using earmarked revenues, but it should be limited to a specified period of time. At the end of this period, earmarking should only be continued if it can be demonstrated that it provides value-added in relation to its stated objectives. Earmarking within earmarked schemes (e.g., sub-funds for specific sectors or groups of polluters within earmarked environmental expenditure programmes) also should be avoided since it further infringes on efficiency. If earmarking is nevertheless applied, safeguards that prevent inefficient resource allocation and perverse incentives should be implemented, such as competition between projects submitted by different firms within a sector, external controls and/or checks of project appraisal.
3. High standards of fiscal discipline and transparency	<ul style="list-style-type: none"> The risk of environmental expenditure programmes resulting in unplanned fiscal deficits should be avoided. Debt, and in particular, contingent and implicit liabilities (such as loan guarantees) should not be incurred without an explicit, prior approval from fiscal authorities. Medium-term financial forecasts, including contingent and implicit liabilities of all implementing agencies, should be regularly prepared and disclosed in financial statements. For all public environmental expenditure programmes, an estimate of the financial resources available and the corresponding expenditures should be provided in the state (or sub-national) budget, at least as an annex. Statements on debt and contingent liabilities, especially of any extra-budgetary environmental institutions controlled by the government should be submitted along with the budget of the Ministry of Environment to the Ministry of Finance. Mandatory internal and external independent financial audits should be regularly carried out. <i>Ex post</i> reporting, according to a transparent expenditure classification system, should be regularly conducted and publicly disclosed.
4. Accountability	<ul style="list-style-type: none"> Appropriate provisions should be made for holding managers of public environmental expenditure programmes accountable for their decisions. Appropriate safeguards should be put in place to protect public funds against corruption and fraud, e.g., through dynamic systems of management control, including internal and external audits. Any potential conflicts of interest should be identified and eliminated. <i>Ex post</i> reports on performance of managers and results achieved (in terms of specified performance criteria) should be periodically conducted and disclosed to the public.
5. Collection of revenues and public procurement separated from expenditure management	<ul style="list-style-type: none"> The primary task of agencies implementing public environmental expenditure programmes should be programme and project cycle management and project financing. Collecting revenues or making direct procurement of equipment and construction services should be performed by the government agencies usually assigned these responsibilities. Revenue from fiscal or quasi-fiscal instruments should be collected by the appropriate fiscal authorities under the control of treasury services. National or international public procurement rules should apply for all purchases that are co-financed by public funds, even if purchasing is outsourced to a private entity.

Checklist 3. Performance in terms of management efficiency

Principle	Good practices
1. Sound governance	<ul style="list-style-type: none"> Public environmental expenditure programmes should be governed by clear, explicit rules. The terms and conditions of financing, decision-making and administrative procedures, internal policies and principles of project appraisal and selection should be available to the public. They should be coherent and consistent, not change frequently or without explanation, and be periodically reviewed in order to identify areas for improvement. A clear distinction should be made between policy-making and executive management functions. An appropriate arrangement should be made for the policy-making function, such as the establishment of a supervisory board. Policy-making in this context includes programming, priority-setting, establishing rules, performance evaluation, supervision and control. Political oversight should be confined to programming and supervision. This is where the political process has a legitimate and important role to play. The supervisory board of a public environmental expenditure programme should include representation from the key stakeholders with appropriate checks and balances between different interest groups. Consideration should be given to involving non-environmental authorities, parliament and non-governmental organisations, as appropriate.
2. Professional executive management	<ul style="list-style-type: none"> Responsibilities for the day-to-day management and implementation of environmental expenditure programme should be clearly separated from policy-making, clearly defined in statutory and operational documents, and shielded from <i>ad hoc</i> political pressures in support of specific projects. An implementing agency should have a clear, legal mandate. It should be a professional, executive management body with an appropriate degree of operational autonomy, subject to strict accountability for performance. Its responsibilities should focus on project cycle management, and in particular, on impartial project appraisal and selection. Executive managers should be held accountable for their performance. The supervisory board of the public environmental expenditure programme should apply explicit performance criteria and indicators when assessing the performance of executive managers. Implementing agencies of large specialised environmental expenditure programmes should have staff assigned exclusively to their management and selected by executive managers. The skills of the staff should adequately match the technical requirements of a given expenditure programme. The recruitment and remuneration of managers and of staff should be based strictly on merit. Remuneration should be adequate to attract and maintain appropriately-qualified people and to reward integrity and commitment.
3. Sound project cycle management	<ul style="list-style-type: none"> The project cycle should be subject to intelligible, transparent and written procedures which are consistent and publicly available, in particular to all potential beneficiaries; a project cycle manual should be available and staff required to use it. Project identification should be proactive (for example by advertising the programme to potential beneficiaries), follow from the objectives of the public environmental expenditure programme, and be based on a realistic analysis of market trends and demand for financing. Applications for financing should be accepted only in standard forms tailored to different project types and supported by clear, user-friendly instructions. Application forms should be easily available to all potential applicants, preferably in an electronic version. Project appraisal and selection criteria and procedures should be objective, transparent and clear. Discretionary elements of project appraisal and selection should be subject to explicit, written procedures, and the results of such decisions kept in publicly-available files. Appraisal systems and procedures should be tailored to the size and complexity of different project types. For large investment projects, a two-stage appraisal process should be used (first stage - screening against eligibility criteria; second stage – appraisal and ranking of

	<p>eligible projects).</p> <ul style="list-style-type: none"> • The appraisal system should be relatively simple, based on impersonal rules, and allow for meaningful comparison of comparable projects against one another, or against a benchmark. The appraisal system should also allow for an <i>ex post</i> verification of the selection process, including tracking personal responsibilities for important judgements and decisions. Appraisal reports should be clear and publicly available.
4. Fair and unbiased relations with external stakeholders	<ul style="list-style-type: none"> • Relations with external stakeholders (beneficiaries, intermediaries, consultants) should be handled in a transparent, unbiased, and arms-length manner. Communication policy should ensure that all applicants have equal access to information on funding opportunities and equal opportunity to have their projects impartially reviewed on a merit basis. • Any outsourcing of tasks should be undertaken through a fair, transparent, competitive process.
5. Effective management of financial products and related risks	<ul style="list-style-type: none"> • Only financial products specified in the terms and conditions of the public environmental expenditure programme should be used by the implementing agency. • The complexity of operations, and the choice of financial products, should be proportional to the institutional capacity to manage associated risks. • Grants are the most administratively simple and transparent financial product. When used, they should be designed and disbursed so as: to maximise incentives for timely and cost-effective implementation of individual projects and of the implementing agency's entire portfolio; to maximise the leveraging of other resources; and to minimise chances of misuse of public money by applicants. • Other financial products could be considered in proportion to institutional capacity and in order of increasing risk and these include: interest rate subsidies, loans through intermediaries, direct loans, leasing, equity investments and loan guarantees. Before a new financial product is adopted, its feasibility should be checked through an assessment of risks, market needs and supported by a financial plan.

Assessment in each dimension forms a *performance triangle*, which is constructed by assigning scores to the checklists presented above. A high score in all dimensions indicates a programme or an implementing agency that performs well in terms of expenditure management. A lower score in any dimension implies a need for targeted institutional reforms and strengthening or even closing down the expenditure programme.

Annex V: List of useful links

OECD PEEM web-page - <http://www.oecd.org/env>

Bulgarian National Trust EcoFund – www.ecofund-bg.org

Czech State Environmental Protection Fund - <http://www.sfzp.cz/en/>

Federal Ministry of Agriculture, Environment and Water Management of Austria - <http://www.lebensministerium.at/>

Kommunalkredit - <http://www.kommunalkredit.at>

Lithuanian Environmental Investment Fund - <http://www.laaif.lt>

Polish EcoFund – <http://www.ekofundusz.org.pl>

Polish Krakow Regional Environmental Fund - <http://www.wfos.krakow.pl>

Polish National Fund for Environmental Protection and Water Management - <http://www.nfosigw.gov.pl>

Slovenian Environmental Development Fund – <http://www.ekosklad.si>

SST-Consult - <http://www.sst-consult.pl>

GLOSSARY OF MAJOR TERMS

Term	Definition
Accountability	A government policy or management concept that means (i) politicians and public officials have to respond periodically to questions concerning their activities (answerability) and (ii) must be held responsible for the exercise of the authority provided to them. For effective accountability, clear lines of responsibility must be firmly established and consistently maintained. Accountability measures should address three questions: accountability by whom; accountability for what; and accountability to whom. To ensure that accountability is properly enforced, there is a need for predictable and meaningful consequences related to performance. In the public sector, accountability of individual officials, within their organisation and to external controlling bodies, is applied most often to how money has been spent and what results have been achieved. Crucial too in democratic systems is the general accountability of ministers to parliament and to the public at large.
Accounting basis	Defined in the International Federation of Accountants (IFAC) as “the body of accounting principles that determine when the effects of transactions or events should be recognised for financial reporting purposes. It relates to the timing of the measurements made, regardless of the nature of the measurement“. There are many variations of the basis of accounting. IFAC identifies two basic reference points (cash and accrual) and two variations (modified cash and modified accrual) in the spectrum of accounting bases. <u>Cash-based accounting systems</u> recognise transactions and events when cash is received or paid. <u>Accrual-based systems</u> recognise transactions or events at the time economic value is created, transformed, exchanged, transferred, or extinguished and when all economic flows (not just cash) are recorded. Certain modifications of the cash basis recognise receipts and disbursements committed in the budget year and allow a specified period after year-end for payments of these to be recorded and reported (the so-called “complementary period”). Under certain modifications of the accrual-based methods, physical assets are expensed at the time of purchase.
Additionality	New investment generated through public resources. Public resources can be used to promote foreign and private investment in priority sectors of the economy. Public money may attract additional donor assistance.
Appraisal	Examination of the details of a policy proposal or investment project on the basis of an analysis of its economic, financial, environmental and other effects. Policy/project appraisal is sometimes called <i>ex ante</i> evaluation.
Assets	Property functioning as a store of value over which ownership rights are enforced by institutional units, individually or collectively, and from which economic benefits may be derived by holding them or using them over a period of time. “Tangible” assets may either be financial (e.g., cash or government securities) or physical (e.g., buildings, roads, national parks, etc.). Assets may also be “intangible” such as copyright or mineral exploitation rights.
Audit	Expert examination of legal and financial compliance or performance, carried out to satisfy the requirements of management (internal audit), or an external audit entity, or any other independent auditor, to meet statutory obligations (external audit). A particular task of internal audit is to monitor management control systems and report to senior management on weaknesses and recommend improvements. The scope of the audits varies widely, as does the terminology in this area, and includes (according to the auditing standards prepared by the International Organisation of Supreme Audit Institutions (SAI):

	<p>1) Financial audit (regularity audit) comprising:</p> <ul style="list-style-type: none"> - Attestation of financial accountability of accountable entities, involving examination and evaluation of financial records and expression of opinions of financial statements; - Attestation of financial systems and transactions, including an evaluation of compliance with applicable statutes and regulations; - Audit of internal control and internal audit functions; - Audit of the probity (high standards of correct moral behaviour) and propriety of administrative decisions taken within the audited entity; - Reporting of any other matters arising from or relating to the audit that the SAI considers should be disclosed. <p>Note that the first item above is commonly known as attestation audit. The third and fifth items are commonly known as compliance audits.</p> <p>2) Performance audit (value-for-money audit) comprising:</p> <ul style="list-style-type: none"> - Audit of the economy of administrative activities in accordance with sound administrative principles and practices, and management policies; - Audit of the efficiency of utilisation of human, financial and other resources, including examination of information systems, performance measures and monitoring arrangements, and procedures followed by audited entities for remedying identified deficiencies; - Audit of the effectiveness of performance in relation to the achievement of the objectives of the audited entity, and audit of the actual impact of activities compared with the intended impact.
Balance sheet	A financial statement showing the values of the stocks of assets and liabilities held by an entity at a particular point in time. A balance sheet is typically compiled at the beginning and end of an accounting period. Balance sheet summarising starting balances, incomes and outflows, and ending balances are generally required for each distinct agency within a government's accounting structure. However, in practice, very few governments prepare statements of their financial position that can genuinely be described as comprehensive balance sheets covering all assets, liabilities and equity.
Benefits principle (of taxation)	The benefits principle of taxation states that only the beneficiaries of a particular government programme should have to pay for it. The benefits principle regards public services as similar to private goods and regards taxes as the price people must pay for these services.
Best Available Techniques	Best Available Techniques (BAT) involves the use of proven technologies and methods of operation in order to prevent or minimise emissions to the environment as a whole. For more information on BAT see http://eippcb.jrc.es/
Capital (capital assets)	A stock of physical or financial assets.
Cash flow	Cash flows refer to the flow of money to or from a firm or economic agent. Income is a positive cash flow and expenses are negative cash flows.
Cash flow statement	Statement showing where cash comes from and on what it is spent. The net result is reflected in the balance of the cash account as of a certain date. In its most refined form, the statement explains and accounts for the flows of cash rather than of working capital.
Contingent liability	Obligations that have been entered into, but the timing and amount of which are contingent on the occurrence of some uncertain future event.
Cost-benefit analysis	A type of analysis that includes measures in pecuniary unit of costs and/or benefits (such as leisure time or environmental impacts) which do not necessarily have a market value. Cost-benefit analysis involves the application of three logical steps: (i) defining objectives and alternatives for accomplishing those objectives; (ii) analysing incremental changes with each

	alternative intervention versus without the respective alternative; and (iii) comparing costs and benefits of the various alternatives.
Cost-effectiveness analysis	A type of analysis that compares projects or programmes having broadly common outcomes or outputs. Used to compare alternatives for which major outputs can be identified but not valued. Cost-effectiveness indicators include the cost per unit of output, or units of output per unit of costs, and is aimed at identifying the least costly method of achieving a particular good or objective.
Depreciation	The reduction in the value of an asset over time that is brought about through physical use or obsolescence. Under accrual accounting, depreciation estimated over the useful life of an asset is progressively deducted (written off) from the value of the asset each year. Depreciation as recorded in business accounting, or as allowed for taxation purposes, may deviate from the value of consumption of fixed capital estimated for the national accounts, especially during periods of inflation.
Discount factor	A discount factor is a number that reflects the value in the present of a unit of money received in the future. A discount factor of 0.95 for money received in a year's time indicates that the value of a monetary unit received in a year's time is worth only 95 cents today. The discount factor is related to the discount rate through the following equation: $1 = (1+i)^n$, where i is the rate of interest (discount rate) and n is the number of years.
Discounting	A method of comparing costs or benefits that will occur (or have occurred) at different times. 1 Euro in year n is given a "present value" of $1/(1+r)^n$ Euro in year 0, where r is the "discount rate".
Discount rate	The discount rate is a number used to calculate the net present value of a stream of future benefits and costs. It usually represents the cost of capital for the person or entity calculating the net present value of the stream.
Earmarking	Tax earmarking is the practice of assigning revenue from specific taxes or group of taxes to specific government activities or areas of activity.
Economic cost	The economic cost of an activity or resource is the cost to society of that activity or resource. Economic costs include the private costs borne directly by economic agents undertaking the activity, and all other costs borne by other economic agents. For example, the economic costs of driving automobiles include the private costs of petrol and wear and tear on the vehicle borne by the vehicle operator, plus the additional costs of congestion, borne by other users of the roads plus the costs of pollution, borne by society in general.
Effectiveness	The extent to which programmes achieve their expected objectives, or outcomes. Effectiveness is the most important element of value for money in the public sector. Goods or services may be provided economically and efficiently but, if they do not achieve their intended objectives, the resources used will be largely wasted.
Efficiency	The relationship between the goods and services produced by a programme or an activity (outputs) and the resources used to produce them (inputs). Efficiency is measured by the cost per unit of output.
Escrow account	A special account at a bank through which all revenues of the borrower are channelled and the debt service is retained first. After this, the remainder of the revenues go to the borrower – this set-up decreases the risk for the lender – note that it does not eliminate it – the revenue risk still exists – it is more like an additional security against default of the borrower.
Excludability	The ability of suppliers to restrict the availability of outputs to those who can pay for it, or by other criteria. See also Public goods.
Expenditures	The term "expenditures" is sometimes loosely used to refer to cash payments. However, a strict definition is the cost of goods and services acquired, regardless of the timing of related payments. Expenditures on goods and services occur at times when buyers incur liabilities to sellers, i.e. when either (i) the ownership of the goods and services concerned is transferred from the seller to the new owner; or (b) when delivery of the goods and services is completed to the satisfaction of the consumer.

Expenses	The term “expense” defines the set of transaction flows that reduce net worth over the accounting period. Expense transactions include compensations of employees, use of goods and service transactions, consumption of fixed capital, property expenses (interest and rent), social benefits, subsidies, and miscellaneous transactions, such as transfers to non-profit organisations and compensation of damage or injury. Acquisition of non-financial assets and financing transactions are not expense transactions.
Externalities	<p>Externalities are by-products or side effects of a production or consumption process. In general, an externality is said to exist when the production or consumption of a good or service by an economic agent has a direct effect on the welfare of other producers or consumers. Externalities may be positive or negative.</p> <p>A <u>positive externality</u> may reduce the costs of a production process of an unrelated economic agent, as when the bees of a bee grower pollinate a neighbour’s apple orchard. They may also increase the enjoyment of another economic agent, as when musicians playing for their own pleasure delight those around them.</p> <p>A <u>negative externality</u> increases the production costs or reduces enjoyment for another economic agent. Traffic congestion and the numerous forms of environmental pollution, such as the pollution created by a manufacturing plant, are examples of negative externalities.</p>
Extra-budgetary agency/account	The term generally refers to government activities that are not included in the annual budget presentation. Moreover, they may be subject to different systems of cash management, control and reporting than the budget itself. A wide variety of extra-budgetary arrangements are used, including agencies (such as social security agencies) set up under separate legislation, commodity agencies that use proceeds of commodity aid, and earmarking certain revenues for specific purposes (e.g., through environmental funds).
Financial management	The legal and administrative systems and procedures put in place to permit government ministries and agencies to conduct their activities so as to ensure correct usage of public funds that meets defined standards of probity, regularity, efficiency and effectiveness. Financial management includes the raising of revenues; the management and control of public expenditures; financial accounting and reporting; cash management; and in some cases, asset management.
Financial reporting	The communication of financial information by an entity (e.g., the government, a line ministry, an agency) to interested parties (e.g., parliament, the ministry of finance). It encompasses all reports that contain financial information based on data generally found in the financial accounting and reporting system.
Financial statements	The accounting statements prepared by a reporting entity to communicate information about its financial performance and position. An accrual accounting system commonly entails the preparation of a Financial Position Statement, or <u>Balance Sheet</u> , which shows the total assets, liabilities and the net worth; a Financial Performance Statement, or Operating Statement or <u>Income Statement</u> , which shows the revenues and expenses of the period; and a <u>Statement of Changes of Net Worth</u> , which explains movements in the opening and closing balances. These accrual-based statements are supplemented with a <u>Statement of Cash Flows</u> which shows how operations and future growth are financed.
Financial sustainability	The assessment that a project will have sufficient funds to meet its resource and financial obligations, whether these funds come from user charges or budget sources; will provide sufficient incentives to maintain the involvement of all project participants; and will be able to respond to adverse changes in financial conditions.
Goals and objectives	Both terms are used to describe the desired, measurable results to be achieved from government programmes or activities. “Goals” (or “general objectives”) typically refer to broad results which may take a number of years to achieve and often involve many people, activities, processes, and intermediate achievements. “Objectives” (or “specific objectives”) tend to refer to more specific results, often precisely measured (time, cost, number, quality) which can usually be accomplished in a shorter time period, and are often an intermediate step in achieving a broader goal.

Governance	Governance is the exercise of political powers to manage a nation's affairs. Sound governance invokes as essential elements political accountability, freedom of association and participation; reliable and equitable legal frameworks; transparency; and effective and efficient public sector management.
Grants	A grant is a voluntary current or capital transfer between government units, or between a multi-national organisation and a national government (e.g., TACIS grants). In addition, a voluntary transfer to a private organisation or a person is often also called a grant.
Income Statement	A financial statement of a company's or agency's operations. The income statement shows a company's/agency's revenues, expenses, and income for a period of time such as a year or a quarter. Figures for the same period in the previous year usually are included for easy comparison.
Institution	Sometimes used synonymously with the term "organisation" or "body", e.g., a ministry or government office. However, the term is also increasingly used in a different sense, to describe the formal and informal rules that determine behaviour, and the enforcement of these rules.
Internal rate of return	<p>The internal rate of return is the discount rate which would give a zero net present value for an investment. It is equivalent to the discount rate r that satisfies the following relationship:</p> $\sum_{t=1}^N \frac{B_t - C_t}{(1+r)^t} = 0$ <p>where B_t is the benefit stream, and C_t is the cost stream. The internal rate of return is then compared with the market rate of interest to determine whether or not a proposed project should be undertaken.</p>
Net Present Value	<p>The net value of a set of costs and benefits after they have been discounted to a specific time. It is most often applied to the costs and benefits of constructing and using a proposed capital investment over its lifetime, discounted to the year in which construction would start. The net present value is equivalent to the number that results from the following expression:</p> $NPV = \sum_{t=1}^N \frac{B_t - C_t}{(1+r)^t}$ <p>where the discount rate r, the benefit in year t is B_t, the cost in year t is C_t, and N is the time horizon. The net present value of a stream is equivalent to the amount that would have to be invested today in order to obtain a return r for N years.</p>
Opportunity cost	The cost of an alternative that must be forgone in order to pursue a certain action. Put another way, the benefits one could have received by taking an alternative action.
Outcomes	Economic or social changes brought about by a policy measure, programme or activity. Outcomes are distinct from outputs, which measure the immediate effects of a programme or activity. For example, the outcome of a random breath-testing campaign conducted by the police may be a decline in drunk driving, while one of the outputs could be the number of drivers charged with exceeding the legal alcohol limit. Programmes usually have two types of outcomes: (i) end outcomes that reflect the desired end or ultimate results that the programme or activity aims to achieve; (ii) intermediate outcomes that are expected to lead to the ends desired but are not themselves ends.
Outlay	Refers to government expenditures.
Outputs	The products and services produced directly by a programme or activity. Outputs are important e.g., in setting targets for staff to achieve and measuring performance but do not in themselves indicate the extent to which progress has occurred toward achieving a programme's ultimate purpose. Depending on their nature, outputs may or may not be easy to measure, e.g., the number of wastewater treatment plants built is easier to measure than the quality of advice on a policy issue submitted by an environmental official to the minister concerned.
Programme	A group of activities intended to contribute to an identifiable set of government objectives (e.g.,

	achieving a certain environmental standard). A programme should have an identifiable target population; a defined budget, staffing and other necessary resources; and clearly defined objectives and outputs.
Public goods	<p>Public goods are goods that either cannot or should not be produced for profit. The first type of goods cannot be produced for profit because the producer cannot preclude anyone from enjoying the benefits of the good, including those consumers who do not want to pay for it. A lighthouse, for example, benefits all ships that see it, even if a particular ship does not want to pay a fee to maintain it. Such public goods are called “<u>non-excludable</u>”.</p> <p>The second type of public goods should not be produced for profit because one person’s consumption does not deprive others from consuming the same good at the same time. For example, any number of people can look at the same sunset at the same time without reducing each other’s enjoyment or any number of people can listen to the same radio station at the same time. Such goods are known as “<u>non-rival</u>”. For non-rival, the marginal cost of consumption is zero, in the sense that one person’s enjoyment of the good does not diminish another’s.</p>
Rate of return	The rate of return is the remuneration to investment stated as a proportion or percentage. It is often the internal rate of return, or the discount rate that is needed to make the net present value of an income stream be equal to zero. The <u>financial rate of return</u> is the internal rate of return calculated when all the inputs and outputs are reckoned at market prices. The <u>economic rate of return</u> is the internal rate of return based on economic opportunity costs.
Shadow price	A shadow price of a good or service is the economic opportunity cost to society of that good or service.
Time value of money	Time value of money refers to the concept that money received in the present is more valuable than money received in the future. It is the concept underlying discounting.
Transactions costs	The costs, other than price, incurred in the process of exchanging goods and services. These costs include the costs of negotiating and enforcing contracts, and the costs of collecting charges for goods and services provided. The scale of economic and financial transactions costs can affect the market structure for a good.
Willingness to accept	Willingness to accept refers to the minimum amount of compensation consumers would be willing to accept for foregoing units of consumption.
Willingness to pay	Willingness to pay refers to the amount consumers are prepared to pay for a final good or service.