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PROJECT

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UNDP/GEF Danube Regional Project: Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin

Draft Final Report

WORKING FOR THE DANUBE AND ITS PEOPLE

Project number:	**RER/01/G32/A/1G/31** **RER/03/G31/A/1G/31**
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TABLE OF CONTENTS

ABBREVIATIONS

AEWS	Accident Early Warning System
AQEM	EU FP5 Project: Development and testing of an integrated assessment system for the ecological quality of streams and rivers throughout Europe using benthic macroinvertebrates
ASTEC	Accounts Simulation for Tariffs and Effluent Charges
BAP	Best Agricultural Practices
BAT	Best Available Techniques
BSERP	Black Sea Ecosystems Recovery Project
CEE	Central and East Europe
DABLAS TF	Danube – Black Sea Task Force
DaNUbs	EU FP5 Project: Nutrient Management in the Danube Basin and its Impact on the Black Sea
DBAM	Danube Basin Alarm Model
DEF	Danube Environmental Forum
DRB	Danube River Basin
DRBD	Danube River Basin District
DRP	Danube Regional Project
DRPC	Danube River Protection Convention
DWQM	Danube Water Quality Model
EMIS EG	Emissions Expert Group
EC GIG	Eastern Continental Geographical Intercalibration Group
EG	Expert Group
EU	European Union
EPDRB	Environmental Programme for the Danube River Basin
EU WFD	EU Water Framework Directive
GEF	Global Environment Facility
GIS	Geographic Information System
ICPDR	International Commission for the Protection of the Danube River
IMCM	Inter-ministerial coordination mechanisms
JTWG	Joint Technical Working Group
MA EG	Monitoring and Assessment Expert Group
MoU	Memordandum of Understanding
NGO	Non-governmental Organization
PIACs	Principal Incident Alarm Centres

P&M EG	Pressures and Measures EG
PRP	Pollution Reduction Programme
RBM	River Basin Management
REC	Regional Environmental Center for Central and Eastern Europe
TDA	Trans-boundary Diagnostic Analysis
TNMN	Trans-national Monitoring Network
UNDP	United Nations Development Programme
WB	World Bank

EXECUTIVE SUMMARY

Background

Since the 1960s, massive over-fertilization of the Black Sea by nitrogen and phosphorus from agriculture, municipal and industrial sources seriously degraded the ecosystem, disrupted the fisheries, reduced biodiversity, posed threats to humans and resulted in billions of dollars of losses to the economies of the six Black Sea littoral countries. The Danube River as one main source of nutrients flowing to the Black Sea also faced pollution from nutrients and toxic substances. Pollution from 17 countries created this transboundary water quality problem.

Since 1991, efforts had been underway with European Union (EU) and GEF support to gradually reverse this situation in the Danube and the Black Sea Basin. Initial efforts focused on the Environmental Programme for the Danube River Basin (EPDRB) established in September 1991, geared to restore and protect the Danube River through a 'Danube Environmental Programme' and the eventual development of the 'Danube River Protection Convention (DRPC)'. Soon after, the International Commission for the Protection of the Danube River (ICPDR) was created to provide a regional approach to managing the Danube Basin.

The project "Developing the Danube River Basin Pollution Reduction Program" (DPRP) represented the 1997-99 GEF contribution to phase two of the EPDRB. The DPRP supported the activities of the ICPDR and implementation of the DRPC. Key outputs included the Transboundary Diagnostic Analysis (TDA) to obtain a complete knowledge base for priority pollution loads and environmental issues in the Danube Basin and a revised Strategic Action Plan prepared as a review of policies for the protection of the Danube Basin.

Danube Regional Project

Following previous GEF assistance and building on the results and efforts of the participating countries in the Danube/Black Sea Basins, a 'Strategic Partnership' was then developed by GEF to accelerate implementation of nutrient reduction measures and policy, legal and institutional reforms in the Basin. One of the Partnership's three complementary parts was the 'Danube Regional Project (DRP)' - a GEF Danube Basin regional capacity building and technical assistance element implemented under the leadership of UNDP. The DRP was the last Danube River Basin-wide intervention following 15 years of funding by UNDP/GEF. From 1992 to 2000, this totalled about 12.4 million USD from UNDP/GEF assistance.

The **long-term development objective** *of the Danube Regional Project is to contribute to sustainable human development in the Danube River Basin through reinforcing the capacities of the participating countries in developing effective mechanisms for regional cooperation and coordination in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.*

The **overall objective** of the DRP *is to reduce nutrient loadings into the Danube River and its tributaries, in order to improve water quality in the Danube, and in the Black Sea. The DRP is designed to complement the activities of the ICPDR.*

The DRP was designed to complement the activities of the ICPDR to provide a regional approach to the development of national policies and legislation and the definition of priority actions for nutrient reduction and pollution control with particular attention to achieving sustainable transboundary ecological effects within the Danube River Basin and the Black Sea area.

The DRP, launched December 2001, was planned for a period of five years, with a budget of 17.24 M USD. The GEF contribution with in-kind contributions from beneficiary countries was estimated to be 19.5 M USD.

Key outputs included consultant reports, Fact Sheets, brochures, stocktaking meeting, mid-term evaluation and a Transboundary Diagnostic Analysis. Overall, outputs included, for example, new: reports with new data, information and recommendations; tools; partnerships; materials for media and general public consumption; demonstration sites; and workshops. DRP considers these outputs to be of value for a diverse range of audiences, stakeholders and beneficiaries.

The DRP was implemented through four over-arching key objectives which were themselves divided into a total of 22 project components. These activities were then divided into the following six key themes; River Basin Management; Agriculture and Diffuse Pollution; Industrial and Municipal Activities; Wetlands; Public Participation and Awareness Raising; and Institutional Strengthening. The main achievements related to each theme were as follows:

1) River Basin Management:

> Contributed significantly to the completion of the 'Danube River Basin Analysis' by: building capacities through workshops; drafting a number of key chapters; supporting the preparation of the maps reported to the European Commission; production of the Danube Basin Analysis Summary Report in six national languages; and assistance for developing the 'Danube River Basin Management Plan' by 2009, the next significant WFD requirement for the Danube.

> Support for sub-basin initiatives including: a workshop agreeing on the structure of the future Sava RBMP and related Road Map, including steps for public participation; technical assistance to Ukraine to participate actively in the ICPDR initiative on the Tisza River sub-basin; strengthening the capacity of Prut River Basin countries to implement the WFD and develop the Prut River Basin Management Plan, and raise awareness raising about the Common Agricultural Policy and phosphate-free detergents.

> Technological support included: an upgrade of the Trans-National Monitoring Network (TNMN) to meet WFD requirements; developing a Danube GIS prototype; harmonizing intercalibration methods between countries; help for BiH to develop a monitoring programme; developing a database for biological parameters to meet WFD monitoring demands; harmonizing river typologies; training programmes for the sampling, analysis and interpretation of benthic macroinvertebrates; and assessing sediment quality in the Iron Gate Reservoir and preparing related recommendations.

2) Agriculture and Diffuse Pollution

> Assessment of the status of the development and enforcement of current agricultural policies with recommendations to assist farmers and agricultural extension services. Introduction and agreement on a definition of 'Best Agricultural Practices (BAPs)' for the Danube River Basin, and the identification of six Strategic Aims with eleven Objectives for measures to control and reduce agricultural pollution.

> Eight pilot family farms in Serbia served as demonstration projects to test 15 BAPs. It was estimated that the application of the 15 BAPs on these pilot farms would reduce the release of approximately 14 tonnes of nitrogen, 2 tonnes of phosphorus and 160 kg of pesticides per year. The estimates were extended to all seven lower Danube Basin countries, where the dissemination of the pilot project results and approaches reached thousands of farmers.

> 52 financial grants distributed to NGOs working to reduce pollution from agriculture.

> MONERIS was accepted as an important tool for estimating nutrient loads from diffuse sources in the basin ands extensive use was made of its results in the Danube River Basin Analysis.

3) Industrial and Municipal Activities

> A review of legislation related to industrial pollution and identification of gaps and opportunities for reforms and measures;

> Targeted assistance and capacity building programme for non-accession Danube countries related to industrial pollution reduction policy and regulatory framework

> Assessment of the impacts of the ICPDR recommendations about 'Best Available Technologies (BAT)' , and potential impacts of the EU Integrated Pollution Prevention and Control Directive.

> Policy, institutional and enforcement summary relating to industrial policy reduction for 11 countries; estimate of the impact of BAT implementation in 13 countries; Road Maps and Country-Specific Work Plans for BAT implementation in four countries; materials and training for over 100 people in Bosnia and Herzegovina, Moldova and Serbia.

> A review of existing legislation policies, and voluntary commitments related to the reduction of phosphorus (P) in laundry detergents across the EU and the Danube River Basin; the compilation and evaluation of data on P-containing detergents and production structures within the DRB; and an exploration of the feasibility of voluntary agreements to achieve a reduction in P in detergents across the DRB.

> Application of a checklist methodology to assess pollution risks for large industrial complexes (e.g. refineries); development of a methodology for the assessment of contaminated sites in flood risk areas; and activities in support of the Accident Early Warning System.

> The mathematical tool 'ASTEC' to test the impacts of a range of simultaneous considerations on pricing for water and wastewater treatment utilities; 'inventory' of a wide range of reforms that treatment plans can apply to streamline operations, cut costs, improve service quality or generate more revenue; two related demonstration sites; in-country workshops, fact sheets and media outreach; and a report on best practices in water and wastewater tariffs setting.

4) Wetlands

> A methodology for assessing land use was successfully applied in three pilot sites in Slovakia, Romania and Croatia. Assessments were completed of the applicability of developing sustainable land-use concepts at each site that aim at reducing nutrient inputs into water bodies, particularly through wetland and floodplain rehabilitation and/or restoration, and of finding measures to move towards more sustainable land use patterns. Examples of concrete activities at the test sites include the re-opening of meanders and restoring wetlands. The project supplied evidence that carefully planned land-use changes can contribute to wetland restoration and wise wetland management.

> The project established a literature database with over 130 scientific reports related to nutrient retention in wetlands, and a project database containing more than 50 projects within the DRB dealing with wetland restoration or nutrient removal. Three pilot sites in Moldova, Romania and Ukraine helped to develop and implement a wetland restoration programme including nutrient retention. A 'Guidance Document' was also prepared to encourage Danube national water and wetland managers to increase wetland protection and restoration activities.

> Through its Small Grants Programme, the DRP supported a wide range of NGOs to undertake projects with a focus on wetlands. This included four NGOs initiating multi-stakeholder campaigns in Croatia, Serbia, Slovakia and Slovenia. The DRP also supported the DEF's 'International Wetlands Campaign'.

> Significant media outreach was observed in relation to all NGO campaigns.

5) Public Participation and Awareness Raising

> Through the DRP Small Grants Programme (SGP), for two grant rounds, 120 National Grants and 10 Regional Grants were distributed to NGOs. The main focus was the reduction of nutrient and hazardous pollution to Danube Basin waters. The 11 target countries were Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Moldova, Romania, Serbia, Slovakia, Slovenia and Ukraine.

> A consistent strategic approach to communications was used throughout the project. Basic products for communicating what the DRP does were developed and disseminated. Activities included the writing and submission of stories about the Danube and DRP for international environmental journals. Target audiences of the DRP received significant communications support, including the ICPDR and DEF. A select number of DRP sub-projects were also supported to develop and implement strategic communications, and effective products and activities that would reach target audiences in the best position to affect positive change.

> The project activity, called 'Enhancing Access to Information and Public Participation in Environmental Decision-making', was implemented in five Danube riparian countries: Bosnia and Herzegovina, Bulgaria, Croatia, Romania and Serbia. The project developed a number of outputs including reports, manuals for government employees, information databases, training, study tours, information dissemination and public participation tools, and information brochures for citizens and NGOs.

6) Institutional Strengthening

> Technical improvements to the Danube Information System 'DANUBIS' focused on system structure, overall orientation and system and user administration. Based on the 'DANUBIS User Survey', hardware was upgraded at the central level and computer equipment was provided to all project beneficiary countries. Training workshops for DANUBIS users were conducted in 11 countries.

> Support was provided for country participation at high-level ICPDR meetings and to the expert group meetings, and to the ICPDR Secretariat and Expert Group Chairmen on facilitation and communication skills. An Open-Space Workshop on ICPDR Further Development led to the restructuring and streamlining of the ICPDR instructional set-up.

> Particular attention was given to establishing and strengthening the capacities of the Danube Environmental Forum (DEF), now the umbrella organization for the largest network of NGOs in the Danube Basin with 174 members and national focal points in all 13 Danube countries. DRP support helped to make the DEF fully operational, establish a Regional Secretariat to coordinate its multi-country activities and to raise its capacities to resolve Danube water pollution issues.

> The DRP, together with the BSERP, facilitated the re-establishment of the Joint Technical Working Group (JTWG) between the ICPDR and BSC, to create agreement on the changes over time to the Black Sea ecosystem and provide to both commissions recommendations on strategies and practical measures. A list of indicators of Black Sea ecosystems was developed, regular reporting on pollution loads from the Danube commenced and the first

report on improving the understanding of the Danube River's impacts on the status of the Black Sea was developed.

> Based on the results of an updated analysis of inter-ministerial coordinating mechanisms (IMCM) and agreed work plans in participating countries, the project carried out specific workshops/trainings and other appropriate targeted activities supporting the establishment or strengthening of IMCM focusing primarily in lower Danube countries, including proposals for new IMCM.

> To monitor the results of the DRP, the project used three categories of GEF indicators: process, stress reduction and environmental status.

> A DRP 'Exit Strategy' was developed and agreed with the ICPDR, which identified for the ICPDR the financial and technical gaps that will open once the DRP has ended, and recommended actions to make up for related reductions in technical and financial assistance.

1. INTRODUCTION

This document represents the Final Report of the Danube Regional Project (DRP).

The DRP is the last Danube River Basin-wide intervention following 15 years of continuous funding by UNDP/GEF.

This Introduction includes the following sections:

1. Structure of Final Report;
2. Background to the UNDP/GEF Danube River Basin Programme;
3. Background to the Danube Regional Project;
4. DRP Outputs and Outcomes;
5. DRP Budget.

1.1. Structure of Final Report

This document begins with an Executive Summary, summarizing in brief the main points of the entire Final Report, including the main achievements of the DRP.

Chapter 1 is an Introduction to the background of UNDP/GEF activities in the Danube River Basin since 1991, providing the source of environmental problems, justification for the project and various phases of involvement, leading up to the Danube Regional Project (DRP) as a key component of the GEF Strategic Partnerships for the Danube/Black Sea region.

Chapter 2 is an Overview of the Project and Themes, including summary statistics about budget, numbers of contracts and workshops, main outputs, and explanations about the six main themes of the DRP.

The six chapters from Chapter 3 to Chapter 8 each take a detailed look into one of the DRP themes, following a consistent approach: background, DRP related interventions, and a list of overall related achievements).

1.2. Background to the UNDP/GEF Danube River Basin Programme

Until the 1960s, the Black Sea was known for its productive fishery, scenic beauty, and as a resort destination for millions of people. Since that time, as with other water bodies around the world, massive over-fertilization of the sea by nitrogen and phosphorus from agriculture, municipal and industrial sources seriously degraded the ecosystem, disrupted the fisheries, reduced biodiversity, posed health threats to humans and resulted in billions of dollars of losses to the economies of the six Black Sea littoral countries.

The Danube River as one of the main sources of nutrients flowing to the Black Sea is also facing a problem of pollution from nutrients and toxic substances due to industrial activities, agriculture and expanding municipalities. These have a negative impact on the river including its water quality, water uses (e.g. water supplies for inhabitants) and aquatic life.

Pollution from 17 countries has created this transboundary water quality problem. Since 1991, efforts have been underway with European Union and GEF support to gradually reverse this situation in the Danube and the Black Sea Basin.

Through its Operation Strategy, the GEF identified that there is a need to: (a) build the capacity of countries to work together, (b) jointly understand and set priorities based on the environmental status of waterbodies, (c) identify actions and develop the political commitment to address the top priority transboundary problems, and then (d) to implement the agreed policy, legal and institutional reforms and investments needed to address them.

Following the previous GEF assistance and building on the achieved results and efforts of the participating countries in the Danube/Black Sea Basins, a Strategic Partnership was developed, with the aim to accelerate implementation of nutrient reduction measures and policy, legal and institutional reforms in the Basin.

GEF and its Implementing Agencies are implementing the Strategic Partnership consisting of capital investments, economic instruments, development and enforcement of environmental law and policy, strengthening of public participation and monitoring of trends and compliance over the period of 2001-2007 for the 17 countries of the Danube/Black Sea Basins. This Partnership is composed of three complementary parts:

1. The Black Sea Ecosystems Recovery Project (BSERP) - a GEF Black Sea Regional capacity building and technical assistance element implemented (in cooperation with the Black Sea Commission) under the leadership of UNDP;
2. The Danube Regional Project (DRP) - a GEF Danube River Basin regional capacity building and technical assistance element implemented (in cooperation with the ICPDR) under the leadership of UNDP;
3. The World Bank Investment Fund - a GEF / World Bank Partnership Investment Fund for Nutrient Reduction focused on single country nutrient reduction investments.

The DRP is of global interest to GEF and other water basins that require international management. Concrete results have been achieved and future positive outputs are expected. This is especially true for reducing nutrient pollution - a common and serious problem in water bodies worldwide. Ultimately, the Danube Regional Project could become a progressive model for expanding public awareness of the threats from nutrient pollution worldwide.

The DRP has to be seen as an integral part of the Danube/Black Sea Basin Strategic Partnership and a logical continuation of the GEF support for capacity building provided for a period of five years to the countries of the Danube River Basin.

1.3. Background to the Danube Regional Project

Since 1992, international assistance to develop appropriate mechanisms and planning tools for the implementation of the Danube River Protection Convention has been provided by the UNDP/GEF, and the EU through its Phare and Tacis programmes. In addition they have assisted with the funding of pollution prevention and reduction activities required to both restore the Danube River Basin and to protect the Black Sea environment.

In this frame, from 1992 to 2000, donor investments can be estimated at about 27 million USD for the EU Phare and Tacis Programs and about 12.4 million USD for the UNDP/GEF assistance. This facilitated the building up of capacities and structures of the ICPDR for joint operation under the Convention.

1.3.1. Environmental Programme for the Danube River Basin

The Environmental Programme for the Danube River Basin (EPDRB) was established in Sofia, Bulgaria in September 1991 by the countries of the Danube River Basin, international institutions, financial organisations, G-24 countries and NGOs, to start an initiative to support, enhance and reinforce actions for the restoration and protection of the Danube River. The countries also set up a Task Force and a Programme Coordination Unit for the implementation of the 'Danube Environmental Programme', and agreed on further development of the Danube River Protection Convention.

The EPDRB was designed to support the Danube countries in their long-term objective of improving the environmental management of the Danube River Basin and to enable the practical work to begin. In parallel, an international convention for the protection of the Danube River and its catchment area was being negotiated. The Danube Environmental Programme supported monitoring, collection and assessment of data, emergency response systems, pre-investment studies, institutional strengthening, capacity building and NGO activities.

1.3.2. UNDP/GEF Danube Pollution Reduction Programme

The project "Developing the Danube River Basin Pollution Reduction Program" (DPRP) represents the GEF contribution to phase two of an Environmental Programme for the Danube River Basin. The DPRP was carried out during the period 1997-99 in the Danube River Basin, and its results supported the activities of the ICPDR through a program of action for the implementation of the DRPC. It was a major international response to degradation of surface and ground water quality in the Danube River Basin and eutrophication of the Black Sea and it had the following outputs:

- The Transboundary Diagnostic Analysis (TDA) was carried out to obtain a complete knowledge base for priority pollution loads and environmental issues in the Danube River Basin;
- The Danube Water Quality Model (DWQM) was designed to estimate and evaluate the flow of pollution – in particular nitrogen and phosphorus - through the Danube into the Black Sea;
- A revised Strategic Action Plan was prepared as a review of policies for the protection of the Danube River Basin, on the basis of existing analytical documents – National Review Reports and National Planning Workshop Reports;
- A Memorandum of Understanding between Danube and Black Sea Countries was drafted based on the results of the Danube-Black Sea Joint Ad Hoc Technical Working Group;
- The development of the ICPDR Information System;
- The Project Database includes the Pollution Reduction Programme (PRP) Investment Portfolio available for financing institutions and donor organizations in the future. The Database contained 421 projects, covering 246 hot spots in the Danube River Basin, comprising 192 municipal, 113 industrial, 67 agricultural, 29 wetland restoration projects and 20 projects classified as general measures;
- The project gave support to NGOs, in particular in developing the regional body, the Danube Environmental Forum (DEF), and the Small Grant Programme was financed to reinforce NGO participation in pollution reduction measures and awareness raising projects.

1.3.3. UNDP/GEF Danube Regional Project

Building on the achievements from previous projects, the new UNDP/GEF Danube Regional Project (DRP) was prepared in the frame of the Danube/Black Sea Strategic Partnership, in order to further reinforce implementation of nutrient reduction measures and policy reforms in the Danube Basin countries.

The long-term development objective *of the Danube Regional Project is to contribute to sustainable human development in the Danube River Basin through reinforcing the capacities of the participating countries in developing effective mechanisms for regional cooperation and coordination in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.*

The overall objective of the *DRP* *is to reduce nutrient loadings into the Danube River and its tributaries, in order to improve water quality in the Danube, and in the Black Sea. The DRP is designed to complement the activities of the ICPDR.*

The DRP was designed to complement the activities of the International Commission for the Protection of the Danube River (ICPDR), an international commission established through the Danube River Protection Convention (DRPC), providing a regional approach to the development of national policies and legislation and the definition of priority actions for nutrient reduction and pollution control with particular attention to achieving sustainable transboundary ecological effects within the Danube River Basin and the Black Sea area.

1.4. DRP Outputs and Outcomes

The UNDP/GEF DRP adopted a log-frame approach to planning and reporting progress to UNDP and GEF. A summary of the outputs and outcomes achieved by the project components together with the quantifiable indicators is presented in the Annex to this report.

1.5. DRP Budget

The total budget of the DRP, for the phase 1 and phase 2 was 17,240 million USD. The following table shows the budget breakdown by project components.

DRP Cost Code	Component	Current Budget **M USD**
1.1	RBM Tools	1.13
1.2/1.3	Agriculture	1.20
1.4	Wetlands	0.31
1.5	Industry	0.42
1.6/1.7	Tariffs & Charges	0.54
1.8	Detergents	0.10
TOTAL 1		3.70
2.1	Inter-ministerial	0.23
2.2	MLIM	0.24
2.3	Accident	0.24
2.4	DANUBIS	0.31

DRP Cost Code	Component	Current Budget **M USD**
2.5	Danube - Black Sea	0.10
2.6	Training & Workshops	0.76
TOTAL 2		1.88
3.1	NGO Development	0.84
3.2	Small Grants	1.98
3.3	Communications & campaigns	1.08
3.4	PP & Access to information	1.96
TOTAL 3		5.86
4.1	Indicators	0.10
4.2	Iron Gates	0.11
4.3	Nutrient / wetlands	0.24
4.4	Pollution Trading	0.22
TOTAL 4		0.67
0	Project Management and Assistance Staff	2.73
	PM travels, office rental, equipment, operational costs	1.23
	UNOPS	1.17
TOTAL 0		5.13
	TOTALS	17.24

The exchange rate in December 2001, when the project started with disbursements, was 1.136 EURO per USD. The value of the USD has since decreased substantially, whereas in May 2007 the rate was 0.732 EURO per USD. On average, the drop of the USD against the EURO was 29.7%.

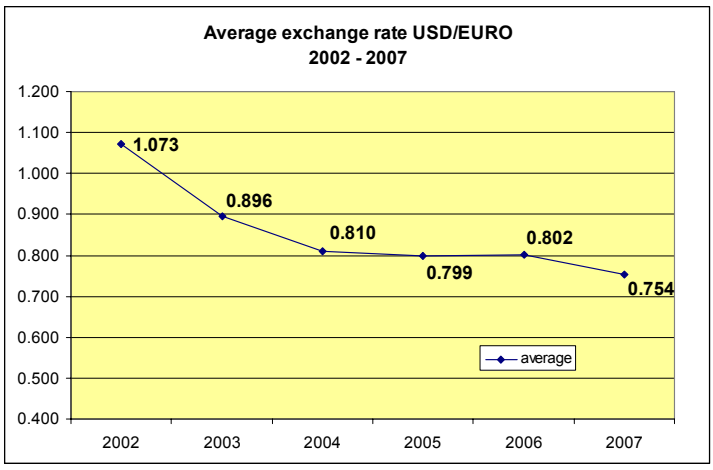
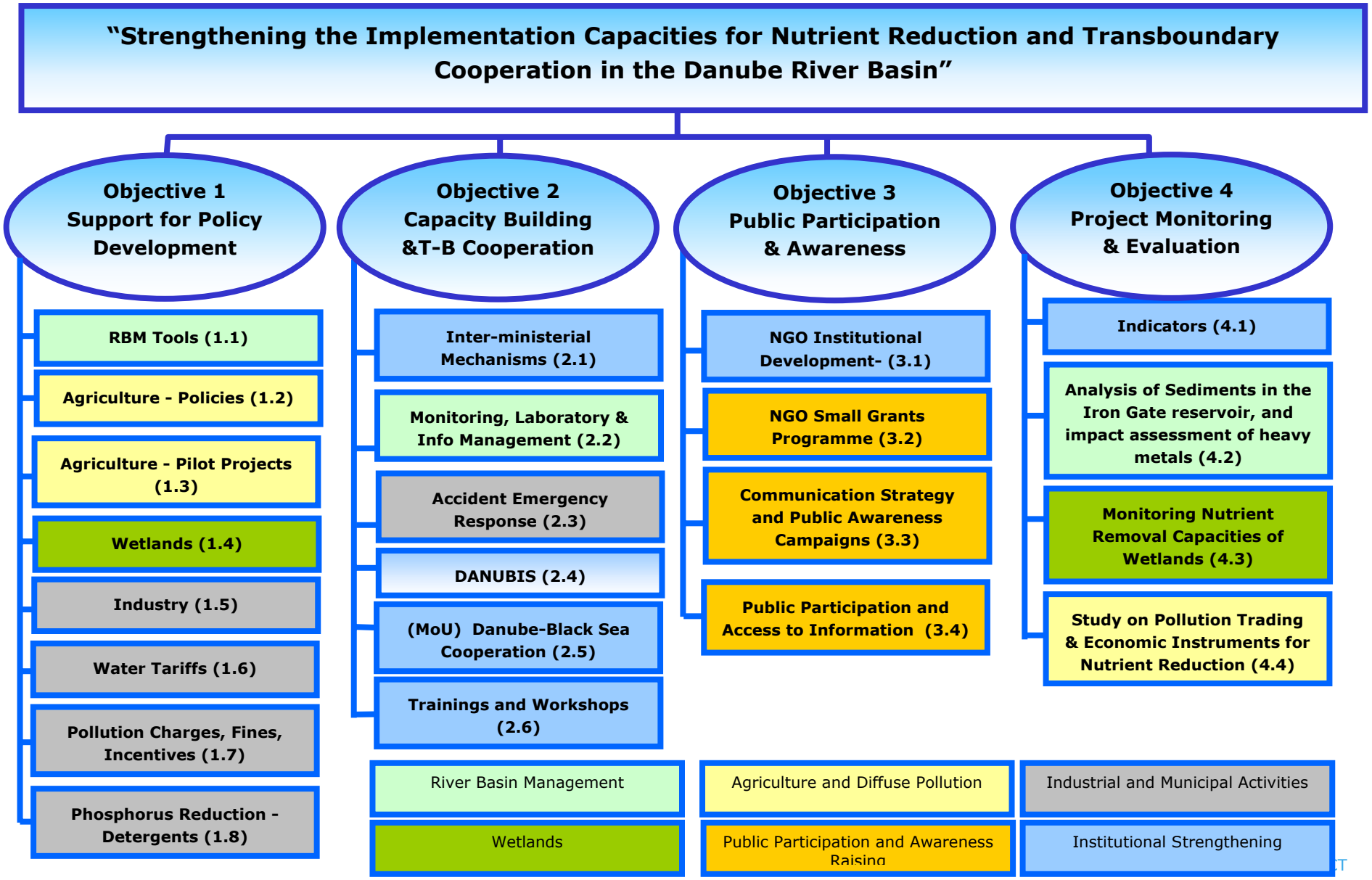


Figure 1: Overview of project components



2. OVERVIEW OF PROJECT ACTIVITIES AND THEMES

The DRP was implemented through four over-arching key objectives which were themselves divided into a total of 22 project components, out of which 18 were directly contributing or are relevant to the work and achievements of the ICPDR and its Expert Groups. Figure 1 shows the overview of the DRP objectives and project components. These activities were then divided into the following six key themes;

- River Basin Management;
- Agriculture and Diffuse Pollution;
- Industrial and Municipal Activities;
- Wetlands;
- Public Participation and Awareness Raising;
- Institutional Strengthening.

2.1. DRP Summary Statistics

The Danube Regional Project, launched in December 2001, was planned for a period of five years, with a budget of 17.24 M USD. The GEF contribution with in-kind contributions from beneficiary countries was estimated to be 19.5 M USD.

The Table below indicates the number of contracts prepared by the Vienna-based management unit of the DRP under each of the 6 themes. Reports on the majority of these contracts are available on the CD that is annexed to this report.

Theme / Activity	**No. of Contracts**	**Budget M USD**
River basin management	59	1.42
Agriculture and diffuse pollution	9	1.43
Industrial and municipal activities	28	1.42
Wetlands	18	0.66
Public participation and communications	24*	5.06
Institutional strengthening	40	2.35
Project management and assistance staff		2.73
Office rental, equipment and PM travel		1.00
UNOPS		1.17
TOTAL	178	17.24

*In addition to the above contracts, 120 national and 10 regional projects were organised under the DRP's Small Grant Programme administered by the Regional Environmental Center for Central and Eastern Europe (REC).

The Table below is an overview of the meetings, seminars and workshops, including total participants, organised by the DRP team, in addition to the workshops organised by sub-contractors within different project components.

Year	No. workshops, etc.	Total No. Participants
2002	3	41
2003	33	606
2004	7	336
2005	11	175
2006	12	333
2007	4	185
TOTAL	70	1676

2.2. DRP Outputs

Reports have been prepared by consultants covering all key outputs from the DRP's activities and these reports are included as annexes to this final report. In addition the DRP has produced a wide range of other documents including:

- Fact Sheets;
- Press releases;
- Brochures;
- Other reports including:
    - Stocktaking meeting;
    - Mid-term evaluation;
    - Joint report from the DRP and UNDP/GEF BSERP on the Impact of the Danube on the Black Sea;
    - Reports to GEF Council;
    - Transboundary Diagnostic Analysis.

2.3. DRP Themes

The DRP and its many sub-projects (approximately 80) produced numerous outputs since its launch. These include, for example, new: reports with new data, information and recommendations; tools; partnerships; materials for media and general public consumption; demonstration sites; and workshops. DRP considers these outputs to be of value for a diverse range of audiences, stakeholders and beneficiaries. In response, the DRP launched a new approach for communicating its project and sub-project outputs, organized around a set of themes that best reflect the DRP's main overall areas of project activity, including:

1. River Basin Management
2. Agriculture and Diffuse Pollution
3. Industry and Municipal Activities
4. Wetlands
5. Public Participation
6. Institutional Strengthening

References to the project's original components, as noted in Figure 1, are included in the text.

3. RIVER BASIN MANAGEMENT

3.1. Background to UNDP/GEF DRP Intervention on River Basin Management

The Danube Regional Project, the concluding intervention by UNDP/GEF within the Danube River Basin, continued to support activities associated with Integrated River Basin Management (IRBM). This support naturally built on earlier work and complemented the work undertaken by the ICPDR in fulfilling the DRPC, and more recently the EU Water Framework Directive (WFD). The WFD is the legislative instrument for EU countries to achieve 'good ecological status' in all water bodies within a river basin district. In 2000 the ICPDR Heads of Delegation declared that the implementation of the WFD was to be the highest priority for the ICPDR – a statement that was reinforced by Ministers of Environment from all the Contracting Parties from both the EU (existing and proposed) and non-EU countries.

This focus on the implementation of the WFD has been a significant challenge for the Contracting Parties, the ICPDR Secretariat and the DRP. The evolving issues, priorities and understanding of the WFD required the DRP and others to adapt their programmes to respond in a timely and effective way. The strict timetable of the WFD (which has to date been met by the ICPDR and the Contracting Parties) required considerable adaptive management from the DRP which was able to respond in a reactive way to these evolving needs while still meeting the DRP's overall objectives on IRBM. Indeed, the DRP (and UNDP/GEF) have benefited from the promotion of river basin management within the WFD, resulting in a true win-win situation between the countries of the EU, the non-EU and UNDP/GEF on the implementation of IRBM principles.

The DRP executed nearly 60 contracts under the scope of river basin management ranging from small support activities of a few thousand USD up to the piloting of a river basin management scoping study in the Sava River Basin with a value of 200,000 USD. The main actions under the theme of River Basin Management taken by the DRP can be summarised as follows:

- Support to the completion of the WFD Article V Danube River Basin Analysis;
- Sub-basin initiatives (Sava, Tisza, Prut Rivers);
- Upgrade of the water quality monitoring network to ensure compliance with the WFD;
- The development of a GIS for the whole Danube River Basin compatible with the reporting requirements of the WFD;
- Miscellaneous activities to technically support IRBM and WFD implementation across the whole Danube River Basin.

3.2. DRP Interventions on River Basin Management

3.2.1. Support to WFD Article V Submission – the Danube Basin Analysis Report

(DRP Component 1.1)

An important deliverable for EU Member States under the WFD is referred to as the "Characterisation" or "Article 5" report due in March 2005. This report provides information on the characteristics of each river basin district, a review of the impact of human activity on the status of the surface waters and on groundwaters, and an economic review of water use. The WFD requires Member States to provide this report for waterbodies within their borders and to also include issues

of importance to the whole river basin. To facilitate this activity within the Danube River Basin, the ICPDR developed the concept of a "Roof Report" which provides details of the Danube River that are common to all Danube Basin countries. This Roof Report was submitted together with the respective detailed national reports. The Roof Report contains, in particular, an overview of the main driving forces of multilateral or basin-wide importance and the related pressures exerted on the environment. This analysis was based on available data resulting from past and on-going projects.

The DRP, in co-ordination with the ICPDR's Joint Action Programme (JAP), implemented a wide range of activities addressing specific pollution problems associated with nutrient and toxic discharges within a river basin management framework. The projects executed have been consistent with, and of benefit to, the overall implementation of the WFD in the basin and the preparation of the Roof Report and national Characterisation Reports in particular. This support included significant capacity building workshops to assist with the long-term sustainability of these pollution reduction initiatives. Specifically, the support included workshops on groundwaters, nutrient reduction, typology and reference conditions, risk of failure of meeting "good status" and on Heavily Modified Water Bodies. These five workshops were all directed at supporting WFD implementation.

The DRP further contributed significantly to the completion of the Danube River Basin Analysis through the drafting of a number of key chapters including:

- Economic analysis;
- Heavily modified water bodies;
- Hydro-morphological alterations;
- Characterization of ground waters,
- Significant point and diffuse sources of pollution;
- Nutrients;
- Water bodies;
- Assessment of the risk of failure to reach the environmental objectives.

The DRP also supported the preparation of the maps reported to the European Commission and the production of the Danube Basin Analysis Summary Report in six national languages.

The Danube Basin Analysis has been used as the key information source for updating the Danube River Basin Transboundary Analysis (2006). Its key conclusion was that pollution by organic, nutrient and hazardous substances, as well as hydromorphological alterations, were the future key water management issues in the basin, and hence, the focus for developing the Danube River Basin Management Plan by 2009. The Plan is the next significant WFD requirement for the Danube, again coordinated by the ICPDR with significant UNDP/GEF support.

3.2.2. Sub-Basin Initiatives undertaken by DRP

3.2.2.1. Sava River Basin Management

(DRP Component 1.1)

The pilot project for the development of a Pragmatic Sava RBM Plan constitutes an activity (Component 1.1-9) within the DRP's objective regarding the "Creation of sustainable ecological conditions for land use and water management". The assignment was based on the outcomes of Phase 1 (April 2003 to February 2004) in which important data and information on water management and socio-economic issues of the WFD in Slovenia, Croatia, Bosnia and Herzegovina, and Serbia and Montenegro were collected.

At the 4th meeting of the "Sava Working Group" on 12 December 2003 in Ljubljana, the "Draft Concept for the Preparation of the Sava RBM Plan" prepared by the DRP was presented, discussed and generally accepted. Particular attention was given to the need to reinforce national capacities.

Phase 1 provided a first overview of data gaps on WFD implementation in the Sava River Basin. The objective of Phase 2 was to help the four national governments sharing the Sava River Basin to develop a Pragmatic Sava RBM Plan until February 2007, while in the long-term (by 2009) a Sava RBM Plan completely in line with EU WFD requirements and ICPDR guidance should be completed by Sava countries (facilitated by the Sava Commission). This RBM Plan, together with the related national RBM plans, will serve as the main instruments to start concrete actions with regard to transboundary issues in the Sava river basin and will also constitute the basis for future investments by international and bilateral donors.

The follow-up project was launched 16 November 2005. Activities were guided by the ICPDR's ongoing work for making the Danube RBMP, including its structure and Road Map, and progress made in the Tisza River Basin with WFD reporting. The regional DRP activities also worked in synergy with a CARDS Sava project focusing on local sub-basins in the Sava region.

Tasks began with a gap analysis to assess the national availability of information needed for EU WFD reporting. Austrian and German consultants advised local government experts from the Sava countries in how to meet WFD reporting obligations in terms of hydromorphology (risk assessment, identification), groundwater characterization, GIS tools and point and diffuse source pollution.

In November 2006, a regional workshop identified preliminary key water management issues and topics of measures for the Sava Basin. In January 2007, the DRP project ended with a workshop agreeing on the structure of the future Sava RBMP and related Road Map, including steps for public participation.

3.2.2.2. Tisza River Basin Management

(DRP Component 1.1)

The DRP provided technical assistance to Ukraine to participate actively in the ICPDR initiative on the Tisza River sub-basin. This assistance enabled the completion of the templates necessary for the WFD river basin management plan. The DRP also provided assistance to interpret WFD assessment templates to further analyze the Tisza River sub-basin.

3.2.2.3. Prut River Basin Management

(DRP Component 1.1)

The DRP undertook a small project aimed at strengthening the capacity of the Prut River Basin countries with regards to implementing the WFD and specifically to assist with increasing the awareness of local stakeholders of the key steps leading to the Prut River Basin Management Plan. In addition, the project also targeted awareness raising on issues associated with the Common Agricultural Policy and changing consumer behaviour on the introduction of phosphate-free detergents.

3.2.3. Upgrade of the Water Quality Monitoring Network in the Danube River Basin

(DRP Component 2.2)

The upgrade of the Trans-National Monitoring Network (TNMN) was a key activity of the MA Expert Group. The DRP supported this by providing a number of outputs to assist with WFD compliance,

including the development of a biological database, nutrient standards and most importantly assisting with the design of a basin-wide monitoring programme meeting the needs of the WFD submitted to the European Commission in March 2007.

The WFD places strong requirements for monitoring on the countries within the Danube Basin. While a functional monitoring network was in operation for a decade, there was a need to expand this to reflect the new needs of the WFD, particularly in the area of biological monitoring. Within the basin there was little experience of undertaking WFD-compliant biological monitoring so the DRP organised a series of workshops across the basin to help implement a common approach for the sampling and analysis of macro-invertebrates.

3.2.4. GIS development in the Danube River Basin

(DRP Component 1.1)

The development of a harmonised GIS for the Danube River Basin was identified as one of the key issues in the implementation of the WFD. It will help to coordinate the exchange of WFD-related data between the DRB countries and the ICPDR and to streamline reporting requirements. Furthermore it will be a tool for the integration of existing and future data providing in the long-term a sound data basis for all water-related issues in the context of the whole DRB.

With input from the "Needs Assessment and Conceptual Design for a DRB GIS", prepared in 2003, the DRP supported further Danube GIS development activities, namely 'System Definition and Design' and 'Development of a Prototype'. The assignment was implemented by UBA Wien, and the Danube GIS Prototype is available now for further testing and development. The ICPDR takes over management of additional development with support from the EU.

3.2.5. Technical Support to Danube River Basin Management

Intercalibration (DRP Component 2.2):

This project focused on the intercalibration of methods using benthic macroinvertebrates, macrophytes and phytobenthos in the rivers of the Eastern Continental Geographical Intercalibration Group (EC GIG). The countries involved were Austria, Bulgaria, Czech Republic, Hungary, Romania and Slovak Republic.

The EU WFD stipulates the comparison of the results of biological assessment methods among countries. In the intercalibration exercise, the good ecological status boundaries of national classification schemes are compared and harmonised. Based on national monitoring data, bio-statistical analyses were performed to compare national quality class boundaries against international benchmark conditions.The intercalibration of the Austrian and Slovak methods using benthic macroinvertebrates was completed. The intercalibration methodology elaborated within the project now enables other countries to compare their classification schemes as soon as national WFD-compliant assessment methods are developed. Finally, results from the EC GIG were reported to the European Commission and presented at various international meetings (e.g. ECOSTAT, RBM EG, MA EG).

Support to Bosnia and Herzegovina (DRP Components 2.1 and 2.2):

The DRP provided direct assistance to the Minister of Foreign Trade and Economic Relations of Bosnia and Herzegovina (MoFTER) in BiH through an expert working in the Ministry with the responsibility of co-ordinating WFD activities with the ICPDR, the Ministry and the two BiH entities. In addition, the DRP has provided an expert to assist with developing a pragmatic monitoring programme in line with the expectations of the WFD and consistent with the available budget of the Ministries in BiH.

Biological Database (DRP Component 2.2)

To assist with meeting the monitoring demands of the WFD, a database for biological parameters was developed based on approaches previously used by the ICPDR. The main aims of this development project were the upgrade of taxa coding to incorporate the current results of projects at the European level (e.g. AQEM, STAR, Euro-limpacs), the improvement of data input tools and enhancement of query functionalities. Results will be used by all Danube countries for reporting and storing data from routine monitoring and periodic sampling programmes (e.g. Joint Danube Surveys).

River Typologies (DRP Component 1.1)

In the countries of the Danube River Basin District (DRBD) different stream typologies have independently been developed for the implementation of the EU WFD. The development of the typology systems as well as the attribution of watercourses to stream types followed the national needs within the scope of interpreting the EU WFD specifications.

In order to prepare a stream type map of an international river basin, a synopsis of all relevant national stream types was in demand. The high number of national types required harmonisation efforts to reduce the total number of stream types. Similar types defined by several countries needed to be identified and duplicate denominations had to be deleted. Harmonisation of national stream typologies also plays an essential role in analogous mapping of the DRBD. In response, the DRP collected all of the data on stream types and prepared a recommendation on their harmonization between the contracting parties.

Training Course in River Assessment: (DRP Component 2.2)

The WFD requires the development and implementation of compliant methods for assessing biological quality elements and ecological status. In response, the DRP organised three training programmes for the sampling, analysis and interpretation of benthic macroinvertebrates based on the agreed AQEM approach.

Iron Gates Sediments (DRP Component 4.2)

The overall objective was to assess sediment quality in the Iron Gate Reservoir and to prepare initial recommendations for future protection of the Danube River and Black Sea. The main actions included: the collection and review of existing data and undertaking a sampling and analysis programme to address gaps in data. The work was undertaken by teams from Romania and Serbia together with an independent laboratory (VITUKI). The results were presented during the MA Expert Group meeting in February 2007. The conclusion of this work indicated that there would need to be a significant increase in the monitoring and analysis of the sediments to fully understand the extent of the contaminated sediments and to be in a position to make clear management recommendations.

3.3. DRP Achievements in River Basin Management

> Contributed significantly to the completion of the 'Danube River Basin Analysis' by: building capacities through workshops; drafting a number of key chapters; supporting the preparation of the maps reported to the European Commission; production of the Danube Basin Analysis Summary Report in six national languages; and assistance for developing the 'Danube River Basin Management Plan' by 2009, the next significant WFD requirement for the Danube.

> Support for sub-basin initiatives including: a workshop agreeing on the structure of the future Sava RBMP and related Road Map, including steps for public participation; technical assistance to Ukraine to participate actively in the ICPDR initiative on the Tisza River sub-basin; strengthening the capacity of Prut River Basin countries to implement the WFD and

develop the Prut River Basin Management Plan, and raise awareness raising about the Common Agricultural Policy and phosphate-free detergents.

> Technological support included: an upgrade of the Trans-National Monitoring Network (TNMN) to meet WFD requirements; developing a Danube GIS prototype; harmonizing intercalibration methods between countries; help for BiH to develop a monitoring programme; developing a database for biological parameters to meet WFD monitoring demands; harmonizing river typologies; training programmes for the sampling, analysis and interpretation of benthic macroinvertebrates; and assessing sediment quality in the Iron Gate Reservoir and preparing related recommendations.

4. AGRICULTURE AND DIFFUSE POLLUTION

4.1. Background to the UNDP/GEF DRP Intervention on Agriculture and Diffuse Pollution

The UNDP/GEF Danube Pollution Reduction Programme (1999) found that approximately 50% of nutrients in the basin derived from agriculture or non-point sources. This information was strengthened by the Danube Basin Analysis Report (2004) which presented nutrient pollution as one of the four key issues affecting the Danube Basin.

Overall, the DRP undertook a range of activities aimed at understanding the situation, providing recommendations on policy reforms and demonstrating how to reduce nutrient emissions among farmers. The DRP also funded a number of NGOs through its Small Grants Programme, providing valuable local advice to farmers on BAPs.

4.2. DRP Interventions for Agriculture and Diffuse Pollution

4.2.1. Agricultural Policy assessment

(DRP Component 1.2)

In the first phase, the project worked with the ICPDR's EMIS Expert Group (the current P&M EG) to assess the then current status of agricultural policy development and its enforcement, with a focus on the storage and use of manure, fertilisers and pesticides. This resulted in the development of a number of reports and recommendations to assist farmers and agricultural extension services. These assessments were updated in phase 2 of the DRP for the lower Danube countries at which time recommendations regarding policy initiatives were completed.

4.2.2. Introduction of Best Agricultural Practices through policy reforms

(DRP Component 1.2)

Phase 1 of the DRP saw the introduction and the agreement of a definition of 'Best Agricultural Practices (BAPs)' for the Danube River Basin, defined as: '*…the highest level of pollution control practices that any farmer could be expected to adopt within their own national, regional and/or local context of the Danube River Basin'.*

The first phase further identified six Strategic Aims with eleven Objectives for measures to control and reduce agricultural pollution. The six Strategic Aims are to:

1. Reduce pollution from mineral fertilisers and manure;
2. Reduce pollution from pesticides;
3. Improve compliance and enforcement of regulatory instruments for agricultural pollution control;
4. Develop appropriate economic instruments for agricultural pollution control;
5. Develop the capacities of agricultural extension services for agricultural pollution control;
6. Promote organic farming and other low input farming systems.

Examples of Objectives include improving national research into the relationship between agriculture and pollution and encouraging proper pesticide use. The Aims and Objectives are designed to encourage farmers to 'move up' a 'BAP hierarchy' to adopt more demanding pollution control practices. Phase 2 of the project focused more on the lower seven Danube countries and further developed the concept of BAPs.

4.2.3. Evaluating BAPs on pilot farms

(DRP Component 1.3)

In phase 2, eight pilot family farms, with a total area of 472 ha and 288 animal units, in the Vojvodina region of Serbia were selected for demonstration projects to test 15 BAPs over the final year of the DRP. 12 of these BAPs responded to issues of nutrient pollution and three to the use of pesticides. Vojvodina was one of the potential pilot locations identified in the first phase of the DRP.

The pilot farmers received significant assistance from the consultant (Carl Bro from Denmark) and were involved in a number of training programmes both within the region and externally. Feedback from the participating farmers about the new practices for pollution reduction and farming practices (e.g. soil analysis, use of slurry, financial losses due to poor manure handling) was very positive.

It was estimated that the application of the 15 BAPs on these pilot farms would reduce the release of approximately 14 tonnes of nitrogen, 2 tonnes of phosphorus and 160 kg of pesticides per year. Extending the results from the Vojvodina farms to all seven Lower Danube Basin countries, it was found that the introduction of the 12 BAPs dealing with livestock manure management would save the environment over 500,000 tonnes of nitrogen and 90,000 tonnes of phosphorus annually. Given the expected increases in livestock production in the next few years, this could increase to 1.1 million tonnes of nitrogen and 160,000 tonnes of phosphorus. The environment and food chain in all seven countries could further be saved from 23,000 tonnes of pesticides under current consumption and 50,000 tonnes under expected future conditions.

Results and approaches were disseminated throughout the lower Danube reaching thousands of farmers. However, as it was observed that the time available in phase 2 for a detailed assessment within the pilot farms was limited, participants requested project extensions.

4.2.4. Agricultural Small Grant Projects

(DRP Component 3.2)

The DRP supported a large number of NGOs within the Danube River Basin with projects that had a focus on agriculture. This included four regional and 48 national grants awarded on a wide range of topics.

One of the most popular topics was the interpretation and promotion of BAPs locally and regionally circumstances. Since good environmental awareness and technical knowledge form the basis of any sustainable farming system, the majority of NGOs chose to implement project activities related to the awareness raising and education of farmers about BAPs, including organic farming which is one of the most highly developed forms of BAPs. Typical activities and outputs included information materials, technical manuals, training courses, seminars, management plans and demonstration activities. In the regional projects, study tours were also used very effectively to exploit the benefits of transboundary co-operation and share experiences, good practices and innovations between farmers and agricultural advisers in different regions of the lower DRB.

Finally, given the importance of local government officials as key stakeholders regarding agricultural pollution control, their active involvement as participants and partners in local and regional activities was encouraged by many NGOs.

4.2.5. Nutrient Model – MONERIS

(DRP Component 1.3)

MONERIS has been accepted as an important tool for estimating nutrient loads from diffuse sources. Extensive use was made of the model's results in the Danube River Basin Analysis. The DRP provided an update of the model to reflect the catchment boundaries adopted for WFD implementation within the Danube River Basin. Training on the use of MONERIS was provided for the ICPDR, and the functionality of the model was fully documented to ensure the transparency of its operation.

4.3. DRP Achievements on Agriculture and Diffuse Pollution

> Assessment of the status of the development and enforcement of current agricultural policies with recommendations to assist farmers and agricultural extension services. Introduction and agreement on a definition of 'Best Agricultural Practices (BAPs)' for the Danube River Basin, and the identification of six Strategic Aims with eleven Objectives for measures to control and reduce agricultural pollution.

> Eight pilot family farms in Serbia served as demonstration projects to test 15 BAPs. It was estimated that the application of the 15 BAPs on these pilot farms would reduce the release of approximately 14 tonnes of nitrogen, 2 tonnes of phosphorus and 160 kg of pesticides per year. The estimates were extended to all seven lower Danube Basin countries, where the dissemination of the pilot project results and approaches reached thousands of farmers.

> 52 financial grants distributed to NGOs working to reduce pollution from agriculture.

> MONERIS was accepted as an important tool for estimating nutrient loads from diffuse sources in the basin ands extensive use was made of its results in the Danube River Basin Analysis.

5. INDUSTRIAL AND MUNICIPAL ACTIVITIES

5.1. Background to UNDP/GEF DRP Intervention on Industrial and Municipal Activities

The DRP undertook a wide range of projects that offer benefits to the environment from industrial and municipal activities. Industrial activities are a potentially significant source of pollution within the Danube River Basin. Pollution sources are varied including industrial discharges, accidents resulting in pollution, flooding of contaminated sites and leaching of pollutants, and phosphates from detergents discharged from wastewater treatment utilities. In addition, the options to enhance the operation of wastewater utilities through better financial controls can provide an effective means to reduce pollution. The DRP conducted a variety of projects aimed at assisting the ICPDR to better understand risks and to provide tools to help reduce them in the future.

5.2. DRP Interventions on Industrial and Municipal Activities

5.2.1. Development of Industrial Policy

(DRP Component 1.5)

Taking into account the expected revitalization of industries in the Danube River Basin countries following the post-communist recession, the Project in Phase 1 focused on industrial policies and a review of legislation in order to ensure that environmental considerations are adequately taken into account and that mechanisms for compliance are put in place. Phase 1 also focused on the identification of gaps and opportunities for reforms and measures,

Phase 2 was oriented toward the development and implementation of targeted assistance programme to non-accession Danube countries related to industrial pollution reduction policy and regulatory frameworks including necessary capacity building activities. Phase 2 also included analytical components to assess the impact of the recommendations provided by the ICPDR about 'Best Available Techniques (BAT)' , and to estimate the potential impact of the EU Integrated Pollution Prevention and Control Directive on the Danube River Basin.

Based on updated information on legislation and national policies, the Project addressed these issues primarily in the non-accession countries. One of the key outputs was the preparation of agreed road maps for the non-accession countries to assist with implementing industrial pollution control policies.

The Phase 2 project produced four major outputs:

- Policy, institutional and enforcement summary relating to industrial policy reduction for 11 countries;
- Preliminary estimate of the impact of the implementation of BAT on industrial pollution reduction for 13 countries;
- Road Maps and Country-Specific Work Plans for BAT implementation in four countries;
- Support materials and training for over 100 people in Bosnia and Herzegovina, Moldova and Serbia.

5.2.2. Elimination of phosphates in washing detergents

(DRP Component 1.8)

The Project's study included: a review of existing legislation policies, and voluntary commitments related to the reduction of phosphorus (P) in laundry detergents across the EU and the Danube River Basin; the compilation and evaluation of data on P-containing detergents and production structures within the DRB; and an exploration of the feasibility of voluntary agreements to achieve a reduction in P in detergents across the DRB.

Only Germany and Austria are virtually P-free. The Czech Republic recently introduced legislation to replace a voluntary agreement that had failed after an initial period of success. Slovenia has a high proportion of P-free detergents, but there are signs of a decreasing trend that should be monitored. Together these four countries account for about a quarter (26%) of the DRB population.

The study further showed that voluntary agreements without legislative back-up are unlikely to succeed in DRB countries, as clearly demonstrated in the Czech Republic, where the initial success of a voluntary agreement between government and the industry association was eroded due to increasing sales of phosphate detergents by non-members of the association. Moreover, it is difficult to control imports of P detergents.

Current EU legislation (Detergents Regulation EC/648/2004, Article 16) provides a timely opportunity to review the situation and to harmonise it across Europe by introducing a ban or restrictions on phosphate detergents across the EU. However, unless EU legislation can be expected in the near future, it will be important to persuade DRB country governments of the need for national legislation.

While it is recognised that other actions, such as improved urban waste water collection and treatment, as well as 'good agricultural practices', are necessary complementary actions, there is scope for contributing to a successful resolution of the problem of eutrophication, by replacing P detergents with P-free detergents, thereby reducing the total phosphate burden from detergents.

The UNDP/GEF DRP and ICPDR held a seminar on 25 January 2007 in Romania to inform stakeholders of the situation and to explore a way forward for P reduction in detergents. An output of the seminar is a recommendation for adoption by the ICPDR and countries of the Danube River Basin for P-reduction in laundry detergents.

5.2.3. Accident Prevention

(DRP Component 2.3)

Under this topic, the DRP supported a number of key activities. These included the application of a checklist methodology to assess pollution risks for large industrial complexes (e.g. refineries), the development of a methodology for the assessment of contaminated sites in flood risk areas, and activities in support of the Accident Early Warning System.

Refineries Pilot Project: The DRP supported the development and application of a checklist methodology for assessing pollution risk from large industrial complexes, using oil refineries as an example. The developed methodology was assessed and enhanced following two on-site training events for pollution control officers from across the basin. The first course was held at a refinery near Berlin, Germany and the second near Constanta, Romania. Following the training course in Constanta, the ICPDR Task Group responsible under the P&M Expert Group approved the approach.

Contaminated sites assessment methodology: The DRP supported the development of a methodology to assess contaminated sites within flood-risk locations. The so-called M1 and M2 methodologies utilise a checklist assessment approach and the finalised method was tested on a contaminated site -- an oil refinery waste deposit near Constanta. This methodology was accepted

by the ICPDR Task Group responsible under the P&M Expert Group. This work provided a number of recommendations for further developing the system and obtaining improved data on contaminated sites across the basin.

Accident Early Warning System (AEWS): The existing AEWS was upgraded and a web-based communication solution for information exchange in emergency cases through 'Principal Incident Alarm Centres (PIACs), using the ICPDR website. The new communication software was developed and successfully tested by national PIACs. A concept for calibration options for the Danube Basin Alarm Model (DBAM) and the outline for the DBAM calibration manual was also prepared. Finally, the DBAM was upgraded to be functional under the Windows XP operating system.

5.2.4. Tariffs and Charges

(DRP Component 1.6/1.7)

The regulatory, economic and institutional environment of local and regional water systems in Central and Eastern Europe (CEE) is undergoing substantial change. Water systems in the region have to: respond to new or redesigned environmental regulations such as standards, effluent charges and fines; comply with revised and extended supervision of tariff setting, tariff design and cost recovery; and serve a market which is much more uncertain than it used to be.

Meanwhile, operating and investment subsidies formerly provided by the central government are being eliminated or sharply curtailed. In parallel, the ownership of assets and service responsibilities have been, or are being, transferred from the central government to local levels. In some cases, private participation in the operation or ownership of water systems has become an option. In short, water systems are currently beset by a variety of interconnected technical, economic and organizational challenges.

Given that costs for improving wastewater treatment are significant, many utilities need help in making the right price and investment decisions to pay for cleaner water. This sub-project raised awareness among DRB policy makers and water and wastewater utility managers and made recommendations on possible reforms for improving operational effectiveness to reduce internal costs. It developed and disseminated financial tools to assist in making decisions about investing in extensions and expansions to utility services, for example adding nutrient removal capacity. The key one was a mathematical tool named 'ASTEC' to test the impacts of a range of simultaneous considerations on pricing. The Project developed an 'inventory' of a wide range of reforms that treatment planrs can apply to streamline operations, cut costs, improve service quality or generate more revenue. Two demonstration sites, in Croatia and in Romania, demonstrated the practicality and to provide real examples of testing its products on the ground,. In-country workshops, fact sheets and the media were used to raise awareness about the project's products and activities in many Danube countries. Finally, a report on best practices in water and wastewater tariffs setting was developed for the DABLAS Task Force.

5.2.5. DRP Achievements on Industrial and Municipal Activities

> A review of legislation related to industrial pollution and identification of gaps and opportunities for reforms and measures;
> Targeted assistance and capacity building programme for non-accession Danube countries related to industrial pollution reduction policy and regulatory framework
> Assessment of the impacts of the ICPDR recommendations about 'Best Available Technologies (BAT)' , and potential impacts of the EU Integrated Pollution Prevention and Control Directive.
> Policy, institutional and enforcement summary relating to industrial policy reduction for 11 countries; estimate of the impact of BAT implementation in 13 countries; Road Maps and

Country-Specific Work Plans for BAT implementation in four countries; materials and training for over 100 people in Bosnia and Herzegovina, Moldova and Serbia.

> A review of existing legislation policies, and voluntary commitments related to the reduction of phosphorus (P) in laundry detergents across the EU and the Danube River Basin; the compilation and evaluation of data on P-containing detergents and production structures within the DRB; and an exploration of the feasibility of voluntary agreements to achieve a reduction in P in detergents across the DRB.

> Application of a checklist methodology to assess pollution risks for large industrial complexes (e.g. refineries); development of a methodology for the assessment of contaminated sites in flood risk areas; and activities in support of the Accident Early Warning System.

> The mathematical tool 'ASTEC' to test the impacts of a range of simultaneous considerations on pricing for water and wastewater treatment utilities; 'inventory' of a wide range of reforms that treatment planrs can apply to streamline operations, cut costs, improve service quality or generate more revenue; two related demonstration sites; in-country workshops, fact sheets and media outreach; and a report on best practices in water and wastewater tariffs setting.

6. WETLANDS

6.1. Background to UNDP/GEF DRP Intervention on Wetlands

Wetlands have a number of very important environmental and practical benefits for river basins including flood mitigation, ecological and habitat support and the potential to act as nutrient sinks. In the last 150 years it is estimated that over 80% of Danube River Basin wetlands were lost through drainage, flood prevention and other river 'management' schemes.

In the frame of the UNDP/GEF Danube Pollution Reduction Program, the rehabilitation and management of about 600.000 hectares of wetlands and floodplains in the DRB had been proposed.

The DRP was heavily involved in wetland programmes throughout the duration of the Project. These activities have included the development of methods to assess land use and assist with policy reforms, the evaluation of wetlands to remove/reduce nutrients and the preparation of guidance to assist decision-makers. These project activities were supported by a number of pilot projects addressing nutrient reduction and land-use policies. In addition the DRP has supported a number of small grant projects by NGOs with an emphasis on wetlands. The DRP has been working with World Bank support projects in Bulgaria and recently in Hungary to share experiences.

The DRP held a basin-wide workshop in the Danube Delta in April 2007. The intention was to bring together river basin managers and wetland managers to jointly discuss issues affecting wetlands and the WFD Programme of Measures. The workshop involved over 50 participants from a wide range of international organisations (e.g. Ramsar, IUCN, WWF), national experts and managers responsible for wetlands and protected areas throughout the DRB. The workshop also saw the launch of a basin-wide declaration by national park managers to form a 'network of protected area managers' with the objective of further enhancing the wetlands within the DRB.

6.2. DRP Interventions on Wetlands

6.2.1. Development of Wetland and Land-use Policies

(DRB Component 1.4)

The overall aim of Output 1.4 was to assist DRB countries to prepare new land-use and wetland rehabilitation/protection policies and legislation in line with existing and emerging legislation, particularly the EU Water Framework Directive. The specific objectives for Phase 1 were to:

(a) develop a straightforward, yet rigorous, land-use assessment methodology that could be tested and adapted if necessary for use across the region;

(b) select three pilot sites on which the methodology could be tested by implementation of specific site-based activities and various future land-use alternatives;

(c) according to the results of the test phase, develop specific proposals for final land-use concepts at each pilot site, including recommendations for the actions and measures required to implement the concepts in practice

(d) ensure the dissemination of conclusions and recommendations, including the final land-use assessment methodology, throughout the DRB.

The specific objectives for Phase 2 were to:

(a) implement technical mitigation measures and alternative concepts that have been developed in the first phase to achieve integrated land-use management at each pilot site (e.g. practical restoration work, regulatory issues, economic fines and incentives);

(b) mainstream wetland conservation and restoration activities into rural development plans and policy and secure governmental commitments to implement the newly proposed concept for integrated land use in the selected case studies;

(c) demonstrate mechanisms for sustainable wetland use and disseminating project results in the DRB.

Activities related to the application of the methodology for assessing land use included:

1. The methodology was successfully applied in the selected three pilot sites in Slovakia, Romania and Croatia.
2. An assessment was completed of the applicability of developing sustainable land-use concepts at each pilot site that aim at reducing nutrient inputs into water bodies, particularly through wetland and floodplain rehabilitation and/or restoration;
3. An assessment was completed of the applicability to find practical and policy measures required to move towards more sustainable land use patterns at each pilot site.

Numerous activities were completed at the three test sites in phase 2 such as the re-opening of meanders, restoring wetlands, planting trees, public information dissemination, implementing improved agricultural practices and declaring new protected areas.

The project supplied evidence that by carefully planned landuse changes, it is possible to provide a significant contribution to wetland restoration and wise management of wetland resources and services.

6.2.2. Nutrient reduction/retention by wetlands

(DRP Component 4.3)

In this project component, the overall objective was to identify the benefits of wetlands as nutrient reduction/retention facilities and the contribution of wetlands in this role to the WFD Programme of Measures. It is generally recognized that nutrient removal capacity varies considerably according to water flow, concentration, loads and natural conditions of the wetlands.

This was achieved by demonstrating the possibilities for optimizing such processes via integrated wetland management while still considering other benefits (e.g. biodiversity, water purification) and giving priority to the ecological needs of these ecosystems. Effective implementation would considerably improve the knowledge about nutrient removal through wetlands rehabilitation and would define the technical and economic parameters for efficient wetlands management.

The first success was the establishment of a literature database with more than 130 scientific reports, and a project database containing more than 50 projects within the DRB, dealing with wetland restoration or nutrient removal. The project also selected three pilot sites in Moldova, Romania and Ukraine and helped to develop and implement a wetland restoration programme including nutrient retention. These real world examples highlighted different aspects of nutrient removal and the importance of including them into wetland management concepts and planning.

The final goal was to create guidelines for best practises in wetland restoration and to improve wetland management in the light of nutrient removal in the DRB. The main output here was a 'Guidance Document' finalized at the beginning of 2007. This document is geared to encouraging Danube national water and wetland managers to increase wetland protection and restoration activities. It explains why wetlands are important for water and river basin management, especially

in reducing nutrient pollution, and provides examples of how managers can proceed with wetland efforts.

6.2.3. Wetlands Small Grant Projects and Campaigns

(DRP Component 3.2)

Through its Small Grants Programme, the DRP supported a wide range of NGOs to undertake projects with a focus on wetlands.

This included four NGOs initiating multi-stakeholder campaigns in Croatia, Serbia, Slovakia and Slovenia were supported in targeting specific environmental/pollution problems, especially wetlands.

DRP also supported the DEF's 'International Wetlands Campaign' that encourages national water managers in the Danube Basin to better incorporate wetland protection into their national river basin management plans. This will assist DEF in their efforts to develop measures to meet the EU WFD.

6.3. DRP Achievements on Wetlands

> A methodology for assessing land use was successfully applied in three pilot sites in Slovakia, Romania and Croatia. Assessments were completed of the applicability of developing sustainable land-use concepts at each site that aim at reducing nutrient inputs into water bodies, particularly through wetland and floodplain rehabilitation and/or restoration, and of finding measures to move towards more sustainable land use patterns. Examples of concrete activities at the test sites include the re-opening of meanders and restoring wetlands. The project supplied evidence that carefully planned land-use changes can contribute to wetland restoration and wise wetland management.

> The project established a literature database with over 130 scientific reports related to nutrient retention in wetlands, and a project database containing more than 50 projects within the DRB dealing with wetland restoration or nutrient removal. Three pilot sites in Moldova, Romania and Ukraine helped to develop and implement a wetland restoration programme including nutrient retention. A 'Guidance Document' was also prepared to encourage Danube national water and wetland managers to increase wetland protection and restoration activities.

> Through its Small Grants Programme, the DRP supported a wide range of NGOs to undertake projects with a focus on wetlands. This included four NGOs initiating multi-stakeholder campaigns in Croatia, Serbia, Slovakia and Slovenia. The DRP also supported the DEF's 'International Wetlands Campaign'.

> Significant media outreach was observed in relation to all NGO campaigns.

7. PUBLIC PARTICIPATION AND AWARENESS RAISING

7.1. Background to UNDP/GEF DRP Intervention on Public Participation and Awareness Raising

A major component of the UNDP/GEF Danube Regional Project (DRP) was devoted to enhancing public participation and communications in the Danube River Basin. One main focus was strengthening public input into the implementation of the Danube River Protection Convention as well as the development of the Danube River Basin Management Plan and sub-basin plans – as required by the EU Water Framework Directive. Another focus was to assist in reducing nutrient and toxic pollution in the Danube Basin and to the Black Sea. Finally, another was to build the capacities of NGOs involved with water-related issues.

In a stakeholder analysis meeting carried out in 2003, ICPDR experts, members of governments, DRP, and NGOs defined the first steps of a strategy to involve stakeholders in the implementation of the EU Water Framework Directive and how to define stakeholders at the Danube River Basin level. The important work done there was critical in identifying stakeholders and developing stakeholder involvement mechanism programmes and activities at the Danube River Basin level.

Overall DRP activities related to this theme were based on four pillars:

1. Small Grants Programme for Danube NGOs
2. Enhancing access to information and public participation in environmental decision-making
3. Support for the Danube Environmental Forum (DEF) *(see page??)*
4. Strategic communications

7.2. DRP Interventions on Public Participation and Awareness Raising

7.2.1. Small Grants Programme

(DRP Component 3.2)

The Small Grants Programme (SGP) was the DRP's main vehicle for engaging local stakeholders to address environmental problems and challenges through NGO involvement. It also helped to build the capacities of NGOs in project management, implementation and communications.

Grants were distributed to NGOs in the Danube Basin through two rounds, each lasting approximately one year. National Grants were awarded to single NGOs acting on their own. Regional Grants, with larger amounts of funding relative to National Grants, were awarded to projects implemented by at least two NGOs working in at least two Danube countries and addressing transboundary issues. The 11 target countries were Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Moldova, Romania, Serbia, Slovakia, Slovenia and Ukraine.

In total, for both grant rounds, 120 National Grants and 10 Regional Grants were distributed to NGOs. The main focus was the reduction of nutrient and hazardous pollution to Danube Basin waters. The distribution of grants is classified under a number of themes that are roughly the same as the overall theme set used by the DRP to organize its activities and sub-projects.

Distribution of National Small Grants

Country	Agricultural Discharge	Industrial Discharge	Land Use + Wetlands	Municipal Discharge	Number of projects
Bosnia and Herzegovina	5	2	2	4	13
Bulgaria	4	1	4	2	11
Croatia	4	3	1	2	10
Czech Republic	3	2	3	3	11
Hungary	5	4	4	4	17
Moldova	2	-	1	5	8
Romania	5	-	2	-	7
Serbia and Montenegro	4	3	-	5	12
Slovakia	2	-	6	6	14
Slovenia	2	-	1	5	8
Ukraine	2	3	3	2	9
Totals	38	18	27	37	120
Percentage	31 %	16 %	23%	30 %	100%

The 10 regional projects had the following themes:

> Reduction of nutrients and toxic pollutants by identifying barriers and building bridges of communication among the stakeholders in the river Hernad in Hungary and the river Sebes-Koros in Romania;

> Increasing public participation in the management and planning of the Sava River Basin;

> Promoting best agricultural practices to reduce pollution generated from farming in the Lower Danube;

> Promoting the ecological, health and financial advantages of re-usable diapers and environmentally friendly washing agents in Slovenia and Croatia;

> Addressing nutrient and toxic pollution in the Sub-basin of the Morava, Mura and Ogosta rivers;

> Building cross-border cooperation for nutrient reduction in the Prut basin;

> Support and promote ecological agriculture in the production areas located in the Danube Basin (Czech Rep., Serbia and Montenegro and Slovakia);

> Danube-Elbe-Oder Canal; grass-root campaign to prevent loss of wetland;

> Networking the river coalitions for a healthy watershed (Croatia, Romania and Hungary).

7.2.2. Development of Communication Strategy and Public Awareness Raising Campaigns

(DRP Component 3.3)

A consistent strategic approach to communications was used throughout the project which included the identification of communications goals, target audiences, main messages and delivery vehicles (i.e. communications products and activities).

Wheels were quickly set in motion to develop basic products for communicating what the DRP does such as a new visual identity and strap-line for the project, brochures, website and Powerpoint

presentations. Activities also included the writing and submission of stories about the Danube and DRP for international environmental journals.

Target audiences of the DRP received significant communications support. For example, the ICPDR magazine 'Danube Watch' received financial support, technical help in redesigning its structure and numerous story submissions. International Danube Day and its associated international art competition, coordinated by the ICPDR, were supported, as were ICPDR publications. ICPDR staff also received capacity-building for strategic communications and media products.

The DEF received strategic communications support for planning and implementing local and international campaigns and projects, its visual identity and branding, media outreach and publication production. A select number of DRP sub-projects were also supported to develop and implement strategic communications, and effective products and activities that would reach target audiences in the best position to affect positive change.

7.2.3. Public Participation and Access to Information

(DRP Component 3.4)

The DRP supported a multi-year effort to build the capacities of governments, local communities and NGOs in the Danube River Basin for improved public access to water-related information and public participation in water management decision-making. The guidelines for this effort came from the requirements of the EU Water Framework Directive (WFD), the Aarhus Convention and other EU directives on access to information and public participation.

The project activity, called 'Enhancing Access to Information and Public Participation in Environmental Decision-making', was implemented in five Danube riparian countries: Bosnia and Herzegovina, Bulgaria, Croatia, Romania and Serbia. The experiences, lessons learned and best practice models developed in these countries will be of value for water management stakeholders throughout the entire Danube Basin.

The project developed a number of outputs including reports, manuals for government employees, information databases, training, study tours, information dissemination and public participation tools, and information brochures for citizens and NGOs.

The ICPDR also benefited from the activities through an assessment of its present capacities and mechanisms for ensuring public access to information and participation, as well as recommendations for their improvement.

Implementation of this project has been done in cooperation with the Regional Environmental Center (REC), New York University of Law as well as Resource for Future (RFF).

7.3. DRP Achievements on Public Participation and Awareness Raising

> Through the DRP Small Grants Programme (SGP), for two grant rounds, 120 National Grants and 10 Regional Grants were distributed to NGOs. The main focus was the reduction of nutrient and hazardous pollution to Danube Basin waters. The 11 target countries were Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Moldova, Romania, Serbia, Slovakia, Slovenia and Ukraine.

> A consistent strategic approach to communications was used throughout the project. Basic products for communicating what the DRP does were developed and disseminated. Activities included the writing and submission of stories about the Danube and DRP for international environmental journals. Target audiences of the DRP received significant

communications support, including the ICPDR and DEF. A select number of DRP sub-projects were also supported to develop and implement strategic communications, and effective products and activities that would reach target audiences in the best position to affect positive change.

> The project activity, called 'Enhancing Access to Information and Public Participation in Environmental Decision-making', was implemented in five Danube riparian countries: Bosnia and Herzegovina, Bulgaria, Croatia, Romania and Serbia. The project developed a number of outputs including reports, manuals for government employees, information databases, training, study tours, information dissemination and public participation tools, and information brochures for citizens and NGOs.

8. INSTITUTIONAL STRENGTHENING

8.1. Background to UNDP/GEF DRP Intervention on Institutional Strengthening

Number of DRP activities was devoted to strengthening of institutions in the DRB, as one of the pre-requisites for sustainable transboundary cooperation in order to ensure protection of international waters, sustainable management of natural resources and biodiversity.

The DRP provided focused capacity building and tools at international (ICPDR and its working structures, DEF), national (Inter-Ministerial-Coordinating Mechanisms, technical training) and local (NGO) levels.

Technical support provided to the cooperation of the ICPDR with the BSC on implementation of the Memorandum of Understanding on long term protection of the BS against pollution was instrumental in revitalizing of the JTWG, which produced first ever report on the Danube impact on the NW shelf of the BS.

Properly planned DRP phase out process through development and implementation of the "Exit Strategy" assisted the ICPDR and Danube countries to prioritize the core activities under the DRPC convention as well to set up a process for filling the gaps after DRP closure.

8.2. DRP Interventions on Institutional Strengthening

8.2.1. ICPDR

Danubis (DRP Component 2.4):

The Danube Information System 'DANUBIS' is one of the most important tools for the ICPDR. It provides information to the public and facilitates the sharing of documents and data among experts. It was developed with financial support from the Austrian Government (computer equipment and software) and Austrian Environmental Trust Fund, and was administered by UNOPS (concept and development of the Information System). The system is presently installed at the Permanent Secretariat of the ICPDR and is fully operational.

Following previous GEF projects that contributed to the DANUBIS launch, the DRP supported further development activities. A DRP assessment identified several deficiencies from the user point of view related mainly to the clarity and consistency of information available. Technical improvements to the system focused on system structure, overall orientation and system and user administration. Further professional, technical and financial support was needed for the build-up and extension of DANUBIS to assure adequate administration of the information and reporting obligations under the DRPC. The DRP provided funds for an IT specialist to operate and further develop the system. Based on the 'DANUBIS User Survey' (2002), the project supported the hardware upgrade of the Information System at the central level and provided computer equipment to all project beneficiary countries.

Training workshops for DANUBIS users and national experts were conducted in 11 countries, assuring a regionally consistent approach for information management within the various activities of the ICPDR.

Capacity building (DRP Component 2.6):

In addition to the capacity building implemented under each technical activity, the capacity building activities of the project were focused mainly at the level of the ICPDR and its structures and secondly at the national level.

Training and capacity building are needed to increase technical skills and knowledge for pollution reduction, including implementation of the EU Water Framework Directive, as well as other skills needed for effective management and work within the ICPDR and its structures.

The project supported country participation at high-level ICPDR meetings and to the expert group meetings. This was important to assure that country representatives could participate and thus bring the country and expert input to the work of the ICPDR. This support was phased out as the countries were able to take on the financial commitments for ICPDR meeting participation.

Support was given to the ICPDR Secretariat and Expert Group Chairmen on facilitation and communication skills. An Open-Space Workshop on ICPDR Further Development was also held, aimed at identifying challenges for optimizing ICPDR working arrangements and structures. The workshop led to the successful restructuring and streamlining of the ICPDR instructional set-up including Expert Groups and their Terms of References.

8.2.2. Strengthening NGO Involvement

(DRP Component 3.1)

The overall focus of the components under Objective 3 was to increase public participation in environmental decision-making. A vital and effective route to public participation is via NGOs because they address community concerns.

Particular attention was given to establishing and strengthening the capacities of the Danube Environmental Forum (DEF), an umbrella organization of NGOs in the Danube River Basin. The DEF's mission is to protect the Danube River with its tributaries, their biodiversity and resources by enhancing cooperation among governments, NGOs, local people and stakeholders towards the sustainable use of natural ecosystems.

UNDP/GEF supported Danube NGO structures and specifically the DEF for the last 10 years. The DRP provided extensive support to build and strengthen the DEF regional NGO network (i.e. Secretariat, national focal points, national members), make it fully operational and to establish a Regional Secretariat to coordinate its widespread, multi-country activities and projects. The DEF also received support to further raise the capacities of the network and its members to resolve Danube water pollution issues.

The DEF is now the umbrella organisation for the largest network of NGOs in the Danube Basin with 174 members and national focal points in all 13 Danube countries.

DEF strengthening was linked with the DRP's other public participation and communications activities. For example, many DEF NGOs received DRP grants and were able to participate in pilot projects for improving access to governmental information at the local level in five countries in southeast Europe. Overall, the DRP worked with NGOs to develop and implement activities related to protection and improvement of the Danube and its tributaries using tools such as small grants, communications, awareness raising and institutional development. Various publications were produced in all national languages and various targeted trainings were held in all Danube countries.

The DEF is an observer to the ICPDR and its expert groups and has now an excellent opportunity to use its capacities and network to be involved and influence stakeholders on important Danube issues.

8.2.3. Support for the ICPDR/Black Sea Commission co-operation process

(DRP Component 2.5)

The status of the ecosystems of the Black Sea is largely affected by nutrients and hazardous substances discharged within the wider Black Sea Basin, and to a large extent by the riverine inputs into the overall Black Sea, including the Danube River. The long-term goal in the wider Black Sea Basin is to reduce nutrient loads and hazardous substance discharges to permit Black Sea ecosystems to recover to conditions similar to those observed in the 1960s; an intermediate goal is to prevent loads of nutrients and hazardous substances discharged into the Black Sea to exceed mid-1997 levels.

A Memorandum of Understanding (MoU), which constitutes a framework for implementing common strategic goals, was signed by the ICPDR and Black Sea Commission (BSC) in 2001. The DRP, together with the BSERP, facilitated the re-establishment of the Joint Technical Working Group (JTWG), the objectives of which are to create a common understanding and agreement on the changes over time to the Black Sea ecosystem, to report on the results, and provide to both commissions recommendations on strategies and practical measures. Within the framework of the JTWG, the list of indicators of Black Sea ecosystems was developed and regular reporting on pollution loads from the Danube commenced.

The first ever report on improving the understanding of the Danube River's impacts on the status of the Black Sea was developed and presented to both the commissions in 2005.

8.2.4. Inter-ministerial Co-ordination Mechanisms

(DRP Component 2.1)

Effective inter-ministerial coordinating mechanisms (IMCM) for the development, implementation and follow-up of national policies, legislation and projects for nutrient reduction and pollution control are a necessary prerequisite for strengthening a regional approach for solving transboundary problems.

The DRP assisted the Danube countries to effectively address pollution prevention and control issues which require decisions and activities in more than one government ministry in order to reinforce the development and implementation of and compliance with national policies and legislation. Based on the results of an updated analysis of IMCM and agreed work plans in participating countries, the project carried out specific workshops/trainings and other appropriate targeted activities supporting the establishment or strengthening of IMCM focusing primarily in lower Danube countries. Proposals for improving existing, and setting up new, IMCM were also made.

For Moldova, Ukraine, Bosnia and Herzegovina, Serbia and Montenegro, and to a lesser extent Croatia and Romania, the results of the analysis revealed, in certain cases, unclear competencies between Governmental structures, inadequate or missing mechanisms for coordination, insufficient financial and human capacities for the development and implementation of policies, strategies and measures and an incomplete legal framework for water management and pollution control.

8.2.5. Development of Indicators

(DRP Component 4.1)

To ensure efficient monitoring and evaluation (M&E) of project implementation, and to document project and program achievements, it is necessary to establish an operational system of indicators.

As further background, the ICPDR accepted the use of EU Water Framework Directive (WFD) indicators and the DRP must fulfil GEF M&E requirements.

Considering the fact that the GEF reporting requirements are slightly different than those of the EU WFD, the project proposed two compatible systems of indicators to monitor and evaluate the results and environmental effects of policies and programme implementation: i) indicators for GEF M&E purposes to be used by the project and ii) indicators for WFD and EEA reporting to be used by the ICPDR.

To monitor the results of the DRP, the project used three categories of GEF indicators: process indicators (identified in the project logframe as outputs/outcomes), stress reduction (response indicators of WFD) and status indicators (identical with the WFD and the ICPDR). The baseline for both the WFD and GEF indicators was the year 1996, since the ICPDR had reliable data on pressures, status and investment in the Danube Basin.

8.2.6. Phase-Out of the Danube Regional Project

The Project and ICPDR recognized early on the importance that, prior to the DRP close by mid-2007, the ICPDR should be in a position to sustain the programmes and activities supported by the DRP that it viewed central to its mission.

In response, an 'Exit Strategy' was developed and agreed with the ICPDR, which identified for the ICPDR the financial and technical gaps that will open once the DRP has ended, and recommended actions to make up for related reductions in technical and financial assistance. The strategy focused on core activities, and recommendations were provided on how they can be carried forward through a gradual transfer of responsibilities from the DRP to ICPDR countries, expert groups and the Permanent Secretariat.

8.3. DRP Achievements on Institutional Strengthening

> Technical improvements to the Danube Information System 'DANUBIS' focused on system structure, overall orientation and system and user administration. Based on the 'DANUBIS User Survey', hardware was upgraded at the central level and computer equipment was provided to all project beneficiary countries. Training workshops for DANUBIS users were conducted in 11 countries.

> Support was provided for country participation at high-level ICPDR meetings and to the expert group meetings, and to the ICPDR Secretariat and Expert Group Chairmen on facilitation and communication skills. An Open-Space Workshop on ICPDR Further Development led to the restructuring and streamlining of the ICPDR instructional set-up.

> Particular attention was given to establishing and strengthening the capacities of the Danube Environmental Forum (DEF), now the umbrella organization for the largest network of NGOs in the Danube Basin with 174 members and national focal points in all 13 Danube countries. DRP support helped to make the DEF fully operational, establish a Regional Secretariat to coordinate its multi-country activities and to raise its capacities to resolve Danube water pollution issues.

> The DRP, together with the BSERP, facilitated the re-establishment of the Joint Technical Working Group (JTWG) between the ICPDR and BSC, to create agreement on the changes over time to the Black Sea ecosystem and provide to both commissions recommendations on strategies and practical measures. A list of indicators of Black Sea ecosystems was developed, regular reporting on pollution loads from the Danube commenced and the first report on improving the understanding of the Danube River's impacts on the status of the Black Sea was developed.

- Based on the results of an updated analysis of inter-ministerial coordinating mechanisms (IMCM) and agreed work plans in participating countries, the project carried out specific workshops/trainings and other appropriate targeted activities supporting the establishment or strengthening of IMCM focusing primarily in lower Danube countries, including proposals for new IMCM.
- To monitor the results of the DRP, the project used three categories of GEF indicators: process, stress reduction and environmental status.
- A DRP 'Exit Strategy' was developed and agreed with the ICPDR, which identified for the ICPDR the financial and technical gaps that will open once the DRP has ended, and recommended actions to make up for related reductions in technical and financial assistance.

ANNEX: PROJECT OUTPUTS AND OUTCOMES

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
1.1	**WFD support activities**	> Over 58 project activities aimed at strengthening the ICPDR and CPs WFD implementation in the Danube River Basin.	> Successful submission by ICPDR (and CPs) of WFD Art. V report to European Commission – March 2005 > Completion of updated TDA for Danube River Basin based on WFD Analysis Report	> Analytical report on Pressures & impact analysis, typology; ecological classification; Economic Analysis; HMWB, Nutrients, etc. used by the ICPDR for Danube Analysis Report > EU WFD Danube Roof report completed and agreed by 13 countries > Danube Analysis Report prepared, with the summary translated into 7 languages and distributed basin-wide > 4 non-EU countries actively participate in process.
	Sava	> Workshop and report presenting WFD RBMP outline and road-map	> Political approval by all countries and commitment to develop RBMP	> RBMP templates for Sava basin, including gap analysis are agreed with 4 participating countries > River Basin Management Road-Map and Plan outline delivered and approved
	GIS	> Recommendations and design of GIS system for Danube and equipment	> Agreed GIS system to be developed meeting needs of ICPDR and CPs for WFD	> Danube GIS Prototype developed and ready for testing and further use - 1 test dataset for each shape-file template / table > Data for 8 countries available
	Tisza	> Support for UA involvement in Tisza River Basin Management process	> Active engagement of UA in the Tisza river basin planning process enabling completion of Tisza river basin analysis report leading to WFD river basin management plan	> Data provided by UA > UA participate at Tisza Expert Group Meetings
	WFD workshops	> Workshops completed in MD, UA, BiH and RS	> Full engagement of non-EU countries in the WFD process	> Workshops on Surface Waters, Ground Waters, Risk of Failure, HMWB, > 3 trainings on assessment of water bodies organized to strengthen expert capacities of the ICPDR for EU WFD implementation, >40 experts participated at each workshop.

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
	Biological method training	> 3 training courses involving all GEF eligible countries on macro-zoobenthos sampling and analysis compliant with WFD	> Danube Countries have agreed common method to report biological quality element under WFD	> 3 training courses with participation of experts from all GEF eligible countries
1.2 / 1.3	**Agriculture**	> Reports delivered on: - Fertiliser and manure use and management - Pesticide use and inventories - Nutrient emissions - Policies for reducing agriculture pollution - Best Agriculture Practices - Training workshops - Pilot farm evaluation of BAPs - Estimation of nutrient emissions from pilot farms	> Implementation of BAPs on 8 pilot farms reduced N by 14 t/yr and P by 2 t/yr. > Data collected led to successful submission of WFD Danube Basin Analysis to EC. > BAP concept developed tested and broadly disseminated at basin-wide scale.	> Reports and inventories on policy, legislation, pesticides, fertiliser, manure handling, BAP etc., > Workshop: Agricultural policy and BAP concept – participation of > 30 experts > Workshop: Pilot projects development – participation of > 40 experts > Workshop: EU WFD and Agriculture – participation of >40 experts > Visit of a farm in Denmark – 40 participants from countries > Farmers aware of the BAP, through broadcastings on national TV and Radio of Serbia, interviews and articles in national newspapers and magazines specialized on agriculture > 8 pilot projects under implementation / lessons learned disseminated > Awareness raising with farmers (etc.) at >100 workshops with > 2500 participants. > Financial benefits evaluated in 8 pilot farms > Web-site operational: http://www.carlbrodrp.org.yu/
	MONERIS	> Upgraded version of nutrient basin-wide model compatible with water bodies defined for the WFD	> All countries having a common tool to estimate nutrient fluxes in the Danube River Basin leading to improved management decision capacity.	> MONERIS model operational within ICPDR > ICPDR staff trained in its use

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
1.4	**Wetlands**	> Development of agreed land-use assessment methodology and results from testing and evaluation of methodology in three pilots	> Integration of one pilot site into the river basin management plan and submission of site to EC as a proposed Natura 2000 protected area. > Elevating wetland understanding within river basin management planning.	> Inventory of Protected Areas, covering 237 sites - database and map - input also for EU Natura 2000 > Methodology for Land-use Assessment tested at 3 pilot sites (SK, HR, RO) and 3 on-sites stakeholders workshops organized with participation of 90 experts at 3 workshops > Land-use concepts implemented in projects at 3 pilot sites under implementation (Slovakia, Romania and Croatia), total area 4,400 hectares > A manual for appropriate land-use is under preparation and will be presented at the basin-wide workshop > 1 preparatory workshop organized 20 participants > Basin-wide workshop for wetland managers from government, NGOs (linked with Component 4.3)
1.5	**Industry**	> Emission inventory review and recommendations > Reports on policy/legislation on BAT > Road map on implementation of BAT in non-EU states	> Transformation of industrial regulations consistent with EU environmental requirements enabling better access to EU markets.	> Review of policies in 11 countries and the identification of gaps between EU and existing and future legislation for industrial pollution control and enforcement mechanisms > Report on Implementation of BAT /IPPC in 11 DRB countries > Report on Implementation of BAT in 4 non-accession countries > Road Map for implementing BAT in Serbia & Montenegro, Bosnia & Herzegovina, Moldova and Ukraine > 3 trainings on BAT & IPPC for experts from BiH, UA, MD > Undertaking of 5 reviews of industrial complexes as case studies on BAT.

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
1.6 / 1.7	**Tariffs & charges**	> Development of model (ASTEC), training, policy reform recommendations for utility / municipalities > Mational analysis of state of the art of water tariffs and charges and implementation of reforms > Policy reforms recommendations > Case studies at utility level	> Enabling utility managers to make management decisions through better tools leading to reduction of pollution through target investments. >	> Two basin wide workshops organized to present the T&C reforms to the countries and increase awareness on T&C issues in 13 countries, 50 experts and high-level country representatives participated. > The current conditions related to regional or Municipal Water and Wastewater Utilities examined in 7 countries > Possible tariff and effluent charge reforms identified and evaluated for 7 countries and 7 municipalities as case studies were evaluated > 40 municipalities considered policy reforms aimed at improved water collection and waste water services, 20 municipalities applied such reforms > 60 municipalities considered tariffs reforms to improve sustainability of financing, up to 20 municipalities applied such reforms. > ASTEC model developed (Accounts Simulation for Tariffs and Effluent Charges), tested in 2 municipalities – Pitesti (Romania) and Karlovac (Croatia) > Training workshop for ASTEC > Regional meetings and dissemination workshops at national level – 470 experts and country representatives participated > Information sheets on T&C prepared also in national languages and distributed
1.8	**P-free detergents**	> Assessment of P-free detergent use in basin and recommendations on means to encourage basin-wide P bans in	> Basin-wide ICPDR policy on P reductions > Enabling EU-wide discussion between regulators and industry > Romania taking first steps to instigate P-free detergent	> 30 participants at Stakeholder Workshop on Detergents > Policy recommended for adoption by ICPDR about P reduction agreed by all countries

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
		laundry detergents	regulations	
2.1	**BiH assistance**	> National expert recruited to work in MoFTER to assist with state and entity implementation of WFD	> Expert requested to be permanent staff (post created). BiH submitted first river analysis report.	> BiH actively involved in WFD process > Position created within the Ministry in BiH
	IMCM	> Country specific reports and recommendations > Country specific workplans endorsed by governments for implementation	> Strengthened capacity within countries to deal with cross-sector activities	> Analysis of IMCM was carried out in 10 countries, recommendations prepared > Needs of 6 countries to strengthen their IMC capacities agreed
2.2	**Monitoring**	> Upgrade of TNMN to meet WFD requirements > Biological database > BiH monitoring roadmap	> Successful submission of WFD Art VIII report to EC March 2007 based on DRP activity. > Countries operate functional biological database consistent with WFD > BiH strengthened to participate fully in monitoring in Danube River Basin	> TNMN harmonized with EU WFD requirement / annual reporting available, all 13 countries participate > Biological database available
2.3	**AEWS**	> Upgrade of communications for AEWS and Danube Basin Alarm Model	> Improved preparedness to alert countries to accidents	> Standard forms and web-based communication solution for information exchange in emergency cases used by all 13 countries PIACs

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
	Refineries	> Check-list methodology developed and tested on refinery risks	> Increased capacity of countries on risk assessment > Assessment techniques improved leading to reduction of risks	> 2 training programmes given for 2 experts from each Contracting Party on check-list assessment of refineries
	Contaminate sites in flood-risk areas	> Check-list methodology developed and tested for identifying and assessing risks from contaminated sites in flood-risk areas	> Increased capacity of countries on risk assessment > Assessment techniques improved leading to reduction of risks	> ARS Inventory carried out – 261 sites identified 157 sites evaluated > Training and evaluation of check-list methodology provided on contaminated site
2.4	**Danubis**	> Upgrade, training, hardware/software for ICPDR data management system	> Improved information management and improved access to technical information by countries	> Training on the Danubis users provided at central level 25 persons and at national level – 11 countries – 12 experts trained in each. > 630 registered users > 18,000 hits / month average in (Sept 05-Sept06) > Upgrade of the Danubis at the central level – 1 new server; Change of the platform for the System; open-source system implemented and national level – 36 PC sets provided to countries. > Concept for Restructuring of the internal area of the ICPDR Info system prepared.
2.5	**JTWG**	> Re-establishment of JTWG > List of indicators agreed > First report on impact of Danube on Black	> Improved co-operation between Danube and Black Sea Commissions > Better understanding of impact of Danube on Black Sea > Improved implementation of MoU	> 4 Annual JTWG meetings organized since 2002 >

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
		Sea released		
	GEF D/BS Strategic Partnership Stocktaking Meeting	> Stocktaking Meeting (STM) > STM recommendations to the DRP, BSERP and WB NRIF to assure meeting Partnership objectives	> Mid-course correcting measures to streamline the implementation of the Strategic Partnership; > Development of the Progress Report to the GEF Council on the D/BS Strategic Partnership.	> D-BS Strategic Partnership Stocktaking meeting organized in 2004, with participation of 80 high level country representatives of the ICPDR, BSC, GEF, UNDP and other experts
2.6	**Training, meetings etc**	> Wide range of capacity building workshops and Danube Basin management meetings supported	> Strengthened capacity of all ICPDR working structure > Increased understanding and co-operation between CPs > Streamlining / restructuring of ICPDR PS, EGs, work plans etc. completed	> Capacities of the ICPDR EG Chairs and Secretariat strengthened through a Training on Facilitation Skills, 35 persons participated > Workshop on Further future of the ICPDR supported the development process of the Commission, 65 country representatives participated > Workshops on EU WFD Implementation at national level have strengthened capacities of experts in 4 countries - policy makers/ senior ministry officials in MD, SM and BiH, RO, in total 80 experts participated > Support for 11 countries to participate at the regular ICPDR EG meeting provided, 80-100 persons supported per year

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
3.1	**DEF support**	> Capacity building and practical assistance on 'identity' provided to DEF	> Improved structure of DEF > Participation of the DEF in the WFD implementation process > Extended membership > Increased capabilities to undertake outreach and awareness raising activities > Increased capabilities to respond to environmental issues in the Danube river basin	> Water policy teams created, to participate in EU WFD Implementation also at national leve > DEF members participated regularly in ICPDR expert group meetings > Training material on 'Wetlands and Nutrient reduction' prepared, training provided in 11 countries with participation of 15 experts per country > Wetlands book produced > Training manual available in 5 languages Network strengthened – 175 NGOs > National focal points in 11 countries active > 2 DEF bulletins regularly published per year also in other Danube languages > DEF press releases regularly printed in National media > New branding and designed communication tools and DEF web-site
3.2	**Small Grants programme**	> 130 small grants successfully implemented and completed with clear deliverables	> Capacity of NGOs to prepare proposals and to undertake project enhanced. > Significant increased awareness within stakeholders and broader public on environmental issues	> 6 regional and 58 national projects implemented within the 1st call, 25 project monitored > 6 regional and 56 national within the 2nd call.

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
3.3	**Communications**	> Danube watch support > Public Participation Strategy > Campaigns on wetlands, detergents, BAP > Branding of ICPDR / DRP > Communication strategy > Media training	> Improved understanding of public outreach within ICPDR and NGOs > Improved public outreach by ICPDR > Broadened public participation > Increased awareness on nutrients and pollutions by all stakeholders > Improved capacity of ICPDR PS on media	> 10 issues of the Danube Watch published with DRP support > 4 campaigns on Wetlands, detergents, BAP (SLO, CRO, SK > Danube Day Events in 2005, 2006 in 13 countries > 100 articles in regional and international media > DRP fact sheets on 5 main themes > 40 Fact Sheets > Over 70 workshops organised by DRP with over 1700 participants (plus events organised by contractors on components) > 2 DRP/ICPDR Posters and roll-ups and 2 Brochures on Public participation and Danube Analysis > Delivery of '15 years of Managing the Danube River Basin 1991- 2006
3.4	**Access to Information / Aarhus Convention**	> 5 pilot projects with manuals and training workshops on access to environmental information	> Strengthened capacity of countries to implement Aarhus convention > Enabling countries to better provide environmental information to stakeholders improving public participation	> Five Pilot projects with country specific outputs > Participation of 20 governmental and 10 NGO representatives at two study tours (USA & NL) > Two basin-wide workshops with participation of 90 country representatives > Final workshop with 60 participants from all Danube countries
4.1	**Indicators**	> Agreed and adopted list of indicators (P, SR and E) by DRP and ICPDR – tested and evaluated	> Indicators available to ICPDR to evaluate progress on core activities in accordance with DRPC	> Set of 35 indicators developed and agreed with ICPDR > 14 indicators tested and evaluated
4.2	**Iron Gate Sediments**	> Agreed assessment (RO, RS) on quality of Iron Gate Sediments	> Improved knowledge and co-operation between RO and RS to address the future challenge of	> Assessment of the quality of Iron Gate Sediment

DRP Component	Activity	Outputs	Outcomes	Quantitative Indicators
			the Iron Gate reservoir	
4.3	**Wetlands – nutrients**	> Completion of pilot projects > Preparation of guidance document on best practices for nutrient retention by wetlands > International workshop to share experiences	> Improved understanding of wetland retention of nutrients and incorporation of wetlands in WFD River Basin Management Plan through the Programme of Measures > Network of National Parks (Wetland) Managers created	> Three pilot projects implemented – Case studies on Nutrient removal capacities of wetlands (Moldova, Ukraine, Romania) > 50 participants from Danube countries participated at the workshop (joint with Component 1.4) > Declaration prepared by Wetland Managers on formation of network together with plan on future collaborative actions within the Danube River Basin.
4.4	**Nutrient trading**	> Reports and workshop on trading options > Cost-effect nutrient management options > Reports on nutrient status within Danube River Basin and impact on NW shelf of the Black Sea	> Increased awareness of alternative means and barriers for nutrient management by trading > Recognition of need for long-term programme to evaluate options sharing the nutrient burden between countries in a cost-effective way	> Final workshop on nutrient trading >

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