

6.2 Implementation of the Future Regional Assistance to Water Pollution Reduction in the Danube River Basin

The Project Document has covered a vast spectrum of activities, however, they did not bring out all important issues for regional water pollution reduction. The mission recommends that, in addition to the actions outlined in the Project Document, a future Danube project pay attention to the following issues:

Supply management: The easily foreseeable rapid economic growth of the region will increase demand for water. This increasing demand may create both national and transboundary environmental problems, which, in turn, will affect regional assistance.

- 2.1 The regional organization and the regional assistance projects should develop consistent criteria for evaluating and monitoring water development investments. These criteria should take into account all direct and indirect costs, potential risks, and impacts.

Municipal and industrial programmess: The demographic forecasts suggest that the countries' respective populations will remain stagnant. However, an increase in living standard will stimulate municipal growth. Industrial development will increase the use of water and thus raising risks of increased water pollution. The regional projects, in collaboration with national authorities, should determine the most effective methods of constructing wastewater and stormwater facilities for towns and industry, and stimulate efforts to reduce industrial pollution through ecologically sound technologies.

- 2.2 Efforts to control pollution should be monitored for both their site specificity and adherence to water basin requirements.

Agricultural practices: Agricultural practices are a major source of a very difficult to control diffuse pollution. Preventing this type of pollution requires the mass application of sound agricultural practices.

- 2.3 The regional projects should help countries to identify, test and disseminate sound agricultural practices, and support national awareness campaigns.

Safety of abandoned industry and mine wastes: The waste which accumulated during the past industrial development periods and was abandoned after the closing of obsolete industry, is another source of diffuse pollution.

- 2.4 The regional project should investigate this problem and help countries to find funding in order to ensure the environmental safety of this waste.

Toxic persistent contaminants: Toxic wastes should be strictly controlled throughout their entire chemical life – from their release into the environment to their safe decomposition.

- 2.5 The regional project should promote coordination among the affected countries to research the best control measures and an appropriate control policy.

Atmospheric pollution: Water quality is indirectly influenced by atmospheric pollutants such as sulfur dioxide and nitrogen oxide. Atmospheric pollutants are essentially transboundary.

- 2.6 The regional project can collaborate with other regional organizations involved in the monitoring and control of air pollution. It should support national efforts towards reducing atmospheric pollution.

Additionally, the following three aspects of regional cooperation should be included in a planned regional project.

Project as a regional policy instrument: Regional cooperation is always voluntary. The countries should feel economically or ethically motivated to adhere to regional treaties and standards. The regional projects, in collaboration with the regional organizations, may selectively invest their resources according to regional interest.

- 2.7 The mandate of the regional project may be to support regional and international organizations that are attempting to apply the regional policy tools. This support may cover areas such as evaluation national projects priorities from the regional point of view (according to GEF standards), establishing of baseline and incremental costs, and investment help for a country complying with the regional standard.

Integrate technical, economic, political, and social dimensions: The regional projects have a unique opportunity to integrate all three of these dimensions. The projects can gather technical data from several countries, collate them, make statistics, prepare comparisons and spread information over the region. Most traditional regional projects are satisfied to simply deal with a regional version of a current national technical problem. More complex data gathering and more sophisticated analytical processing are required for successfully completing environmental projects. Environmental degradation is a visible and measurable consequence of human behavior. An investment that improves one environmental sector may have ramifications in several aspects of human life. It may well become a welcome political issue but could also be seen as a new unwanted expense for the citizens. The regional projects may help countries to comply to the regional decisions and have them consider the technical, economic, political, and social ramifications.

- 2.8 The regional projects should adopt a holistic approach and take in a list of their activities: data collection and dissemination, training and demonstrations, research, norms and legislation standardization, and public participation and promotion. All of these would be seen in the broad sense of supply and demand for water, and of a country's macroeconomic policy.

Finally, a country may expect that its contribution to a regional effort will be in proportion to its benefit. The regional projects and regional organizations should manage their resources in such a way that the global regional effort under their management has greater value than the sum of national efforts, and that the all participating countries benefit from the cooperation. Therefore it is recommended that

- 2.9 The regional project prepare periodically a balance of regional expenses and gains, and informs the countries about advantages of adhering to a specific cooperation programme. This balance will help the project and its regional counterpart to mobilize national efforts for a particular programme, and to decide on the amount a country may be willing to contribute to the regional effort.

7 LESSONS LEARNED

The Project experience offers constructive lessons for the UNDP in areas such as human development, capacity building, and an improved understanding of transboundary pollution.

Human development. The sustainability of environmental projects depends on how much the public has learned about the environmental impact, and how much the attitude of beneficiaries towards environment has changed. Increasing the public's knowledge is a relatively easy task compared to changing the attitudes of beneficiaries. Increasing knowledge or raising public awareness can be achieved through training sessions, documents distribution or media implication. Changing attitudes, on the other hand, is very hard. The rate of message adoption and behavioral change depend on the intrinsic value of the message, on the transmission medium, on the past experience of the subjects, and on their expectations. A systematic evaluation of the message adoption rate should be included in the environmental projects. This evaluation may help in selecting the best tools and media to transmit the message.

Capacity building. Capacity increase among the project beneficiaries depends strongly on their personal involvement in the project and on how attractive the project's activities appear to them. One may expect a strong personal involvement in an activity that, for example, helps a person solve a similar problem in the future. For example, the Project trained hundreds of national technicians in data collection and report preparation. They have brought the acquired skills to the national levels. Virtually all information was collected nationally within the national services, using local human resources. These individuals probably still contribute to increased professionalism on the national environmental arena. It would be interesting to the UNDP and GEF to evaluate the impact of these agents on national and regional environmental activities.

Understanding transboundary pollution. Completing the Project's activities advanced the national concerns about the basin-wide water pollution reduction problem. The increase in transboundary pollution understanding will become a lasting record since the Project transformed an abstract concept of a transboundary pollution into a neat package of identified problems. The identified polluting agents have a clear and measurable consequence of pollution. The Project strengthened, as well, personal collaboration among the high-ranking officials of the various ministries. It is, therefore, possible to put a human face on an anonymous governmental decision. Putting a recognizable features onto the vague problem of transboundary water pollution, the Project made this issue more comprehensive than any before in the history of such regional collaboration.

ANNEX I

TERMS OF REFERENCE

Objective and Scope of the Evaluation Mission

1. Purpose

This is a final evaluation of the project: it will consider the impact, effectiveness and efficiency of the project. Consider contribution of project towards capacity development, long-term sustainability and direction for the future.

2. Scope

The evaluation is an activity in the project cycle which attempts to determine as systematically and objectively as possible the relevance, efficiency, effectiveness, impact and sustainability of the project. The evaluation will assess the achievements of the project against its objectives, including re-examination of the relevance of the objectives and the project design. It will also identify factors that have facilitated or impeded the achievement of the objectives. While a thorough review of the past is in itself very important, the in-depth evaluation is expected to lead to detailed recommendations and lessons learned for the future.

In particular the evaluation will address the following issues considering the participation of all countries covered by the project:

2.1 Project Design

- a. Review and assess the appropriateness of the project's concept and design to the overall situation in the Danube River Basin (DRB)
- b. Apprise the project's current effectiveness in realizing the four objectives, and the extent to which they contribute to the overall development objective as announced in the project document
- c. Apprise the project's actions and outcomes in the light of the pertaining GEF guidelines
- d. Assess sustainability of the programme

2.2 Project Implementation

The mission will review:

- a. Assess the general implementation and management of the project in terms of quality and timeliness of inputs and activities, with particular reference to financial and human resources management
- b. Evaluate the adequacy of management arrangements as well as monitoring and backstopping support given to the project by all parties concerned
- c. Evaluate changes in the environment in which the project operates and which constituted the rationale for GEF support, particularly in the areas of: regional cooperation, policy development, and public participation.

2.3 Project Impact

The mission shall review the achievements of the project against the announced objectives, outputs and activities as detailed in the project document and summarized below:

- I. Complete the knowledge base for priority-settings
 - i. Update national reviews and analyze national actions plans using a common format
 - ii. Complete the transboundary diagnostic analysis
- II. Review policy for protection of the Danube Basin and the Black Sea
 - iii. Promote pollution prevention and reduction policy review
- III. Increase public awareness and participation
 - iv. Raise public awareness about pollution reduction activities
 - v. Improve coordination and information exchange
- IV. Develop the financing of the pollution reduction programme within the Danube Strategic Action Plan
 - i. Develop portfolio of Danube basin projects
 - ii. Mechanisms to provide sustainable financial support for the Danube River Basin
 - iii. Finalize and agree on the process for adopting a revised SAP

In addition, the evaluation will consider the general impact of the project in terms of the following criteria:

- awareness of the participating countries about the project's outputs;
- level of ownership and commitment of the participating countries towards the project;
- impacts on the policy and strategies of the countries;
- technical and managerial cooperation among the participating countries;
- interagency/interministerial cooperation in each country;
- cooperation among sectors, including the non-government and private sectors;
- sustainability of project impact.

3. Method

The evaluation will be composed of two activities: studying documents and interviews of individuals who are either involved in the project, or who have or might be expected to have impacted by the project.

Although the mission should feel free to discuss with the authorities concerned all matters relevant to its assignment, it is not authorized to make any commitment on behalf of UNOPS, UNDP or GEF.

4. Conclusions and Recommendations

Based on the above the mission shall:

- a. Write up its conclusions of the visit
- b. Address the relevance of the project design in view of the current situation of the Danube countries and the priorities within the donor community, particularly UNDP, the World Bank, and GEF
- c. Assess the general project implementation in terms of use of human and financial resources, and backstopping services provided
- d. Review in detail the project results against announced project objectives and actions
- e. Advice on the suitability of further actions in the region upon completion of the current project within the overall objective of GEF.

ANNEX II**MISSION CALENDAR****June 1999**

- 7 New York. Meeting with Mr. R. Aertgeerts, UNOPS and Mr. A. Hudson UNDP/GEF
- 9 Vienna, meeting with the UNDP/GEF Project Management.
- 10 Vienna, meetings with the Project Management and documentary study.
- 11 Vienna, meetings with the Project Management and documentary study.
- 12 Vienna, participation in ICPDR meeting.
- 13 Vienna, mission internal meetings.
- 14 Vienna, meetings with the Project Management, FGG, mission internal meeting, documentary study.
- 15 Vienna, meetings with the Project Management, EU Phare, and documentary study; Budapest, meeting in REC.
- 16 Vienna, meetings with the Project Management, ICPDR, WWF, EU Phare, and documentary study.
- 17 Vienna, meetings with the Project Management and documentary study; Frankfurt, meeting in KfW; Munich, meeting in DEF.
- 18 Vienna, meetings with the Project Management and documentary study; Delft, meeting in Delft Hydraulics.
- 21 New York, meeting in UNOPS and UNDP/GEF.

ANNEX III

LIST OF PERSONS MET

AERTGEERTS, Roger	Senior Project Manager, Division for Environmental Projects, UNOPS, New York
AKHTAR, Tehmina	GEF Regional Coordinator, RBEC – UNDP, New York
BEDRICH, Milan	Povodi Moravy, Brno
BENDOW, Joachim	Project Manager UNDP/GEF RER/96/G31, Vienna
BOSNJAKOVIC, Branko	Regional Adviser on Environment, Economic Commission for Europe, Geneva
BOTTERWEG, Teun	Team Leader Danube Programme Coordination Unit, European Commission Phare, and Tacis Environmental Actions, Vienna
FABIANOVA, Marcela	UNDP/ GEF RER/96/G31, Vienna
FLECKSEDER, Hellmut	Technical and Scientific Director, ICPDR, Vienna
GARNER, Andy	Environmental Engineer UNDP/ GEF RER/96/G31, Vienna
GILS van, Jos	Modeling Expert, Delft Hydraulics, Delft
HANTSCH-LINHART, Wilhelm	Infrastructure Financing Specialist, FGG Vienna
HUDSON, Andrew	International Waters Principal Technical Adviser, UNDP/GEF, New York
JAKSIC, Borislav	Water Management Institute, Banja-Luka
KITTINGER, Wilhelm	Former President, ICPDR, Vienna
LATIF, Mohammad, A.	USAID, Washington
LOTTMANN, Jürgen, H.	Chief of the Environment and Public Health Division, KfW, Frankfurt
LUKSIC, Mojca	State Water Directorate, Zagreb
MARA, Liliana	Ministry of Water, Forest and Environmental Protection, Bucharest
MARGRAF, Christine	DEF, Munich
MATUSKA, Milan	Ministry of Environment, Bratislava
NATCHKOV, Ilya	Deputy Team Leader, Team Leader Danube Programme Coordination Unit, European Commission Phare, and Tacis Environmental Actions, Vienna
PINGULI, Entela	REC, Budapest
POPESCU, Liviu	ICIM Research and Engineering Institute of Environment, Bucharest
SCHUETZ-MUELLER, Ingolf	Chief, Division for Environmental Projects, UNOPS, New York
SCHULZE-VORNHAGEN, Dieter	Senior Project Manager, Promotional Banks, KfW, Frankfurt
STALZER, Wolfgang	President, ICPDR, Vienna
THOMPSON, Stuart	Office of High Representative Bosnia and Herzegovina, Sarajevo
WANNIGER, Reinhard	Financial Consultant, Vienna
WARMUTH, Heike	UNDP/ GEF RER/96/G31, Vienna
WELLER, Phil	Director, WWF – Danube – Carpathian Programme, Vienna

ANNEX IV

LIST OF DOCUMENTS REVIEWED

- 1 Analysis of Financing Mechanisms. PCU and Wanninger, R. 1999. No page numbering.
- 2 Convention on cooperation for the Protection of sustainable use of the Danube River (Danube River Protection Convention). Uated. 43 p.
- 3 Danube Regional NGO Consultation Workshop Report. REC, 1998. 28 pp. and 5 volumes of specific presentations.
- 4 Danube River Basin Pollution Reduction Programme Report. PCU, 1999. 57 p. and 15 annexes.
- 5 Danube Water Quality Model Simulations in support to the Transboundary Analysis. PCU, 1999. 54 p.
- 6 Eutrophication of the Black Sea: causes and effects. ICPBS and ICPDR, 1999. 70 p.
- 7 Evaluation of Wetland and Floodplain Areas in the Danube River Basin. PCU and WWF, 1999. 84 p.
- 8 Final Report. RER/91/G31 and RER/95/G45. Undated. 66 p.
- 9 Financing Pollution Reduction Measures in the Danube River Basin. PCU and KfW, 1999. 68 p. and 7 annexes.
- 10 Framework for Development of an Information Network for the ISPDR. PCU, 1998. 105 p.
- 11 GEF/UNDP Project Implementation Inception Workshop. PCU, 1997. 30 p. and 7 annexes.
- 12 Guidelines for Target Oriented Program Planning Workshop. PCU, undated. 91 p. and 23 flipcharts.
- 13 Local Grants for the Danube Pollution Prevention Program. REC, 1998. 16 p.
- 14 National Review Reports. (1999). Vol. 1,2, 3,and 4.
- 15 PMTF meetings 1,2 and 3 (1998 to 1999)
- 16 Project Document. RER/96/G31. 1997. 50 p.
- 17 Socio-Economic Analysis. PCU and R. Wanninger, 1999. No page numbering
- 18 Strategic Action Plan for the Danube River Basin 1995-2005. EPDRB, 1994. 109 p.
- 19 Strategic Action Plan for the Danube River Basin 1995-2005. Revision 1999. PCU, 1999. 130 p. and 4 annexes.
- 20 Terms of Reference for Programme Management Task Force (PMTF). ICPDR, 1998. 7 p.
- 21 Transboundary Analysis. Final Report. PCU, 1999. 218 p.

ANNEX V

ACTIVITIES

Objective 1: Complete the knowledge base for priority setting

Sub-objective 1.1: Update National Reviews and analyze National Action Plans, using a common format

1.1.1 Update National Reviews focusing on priority pollutants/sectors agreed in SAP

The UNDP/GEF staff, assisted by three international experts and eleven teams of national experts (45 national experts in total), prepared, from December 1997 to January 1998, guidelines for national reviews including the electronic formats for substance emissions and other water quality data required by the DWQM. Between February and November 1998, the national teams, in consultations with the NGOs and the public, prepared the national reports according to the provided guidelines. These reports were validated between September 1998 and January 1999, and became available to the DWQM. In 1999, the project team, together with the national and international experts, used the information available to prepare, for each country, an analysis of water pollution socio-economic effects, and a description of financial mechanisms for pollution reduction projects.

Two of the countries situated in the Danube River Basin (Austria and Germany) were not eligible for the project funding. Consequently, the project provided the countries with guidelines and formats, but not with financial support for the data collection. Up till now, these countries sent to the project the water quality data essential to development of the DWQM; however, they provided the project only with a part of information needed for their respective national reviews.

1.1.2 Prepare National Reviews for Bosnia-Herzegovina, the Federal Republic of Yugoslavia and Croatia

Bosnia-Herzegovina, Federal Yugoslav Republic, and Croatia were included in the national review studies during the same time as the other countries (see activity 1.1.1), and they provided all the data as scheduled, before the end of January 1999.

1.1.3 Definition of national baselines contribution through analysis of national policies, projects, investments, etc. defined in National-Action Plans

The project staff, assisted by a consultant and by EMIS, prepared in December 1997 and January 1998, a format for the national baselines. Then, in each country, the national teams in consultations with public and NGOs, prepared the national baselines. Between November 1998 and April 1999, the national baselines were introduced into the DWQM.

*Sub-objective 1.2: Complete the Transboundary Diagnostic Analysis (TDA)*1.2.1 Prioritization of 'Hot spots'

The hot spots screening methodology that enables their prioritization for N and P pollution reduction projects proposals was completed by the project staff in January 1998. Between February and November 1998, in each country, the list of hot spots was completed and they were prioritized according to the prepared screening methodology. Between November 1998 and January 1999, the project team, assisted by one consultant and by ICPDR Steering Group, incorporated the prioritized hot spots into a Transboundary Analysis Report.

1.2.2 Develop extended Danube Water Quality Model for priority pollutants

From September 1998 to May 1999, the project team, assisted by a consultant, validated the DWQM results. Simultaneously, the project improved and developed further the DWQM by increasing its analysis capability.

1.2.3 Assess the priority sites for wetland/floodplain restoration for pollution reduction and ecological rehabilitation

Between February 1998 and February 1999, the project team, assisted by a consultant, reviewed wetlands and floodplains in the Danube River Basin, and assessed their ecological functions; especially their nutrient removal capacity. The results were described in a basin-wide overview. Simultaneously, the project prepared an intervention program of wetland and floodplains restoration for inclusion in the Transboundary Diagnostic Analysis and drafted a management schemes outline (with baseline and total costs of management). A detailed development of wetland and floodplain management, initially included in the project document, appeared to be not feasible within the given budget.

1.2.4 Social analysis of pollution in the Danube River Basin and Black Sea

Between November 1998 and January 1999, the project team assisted by a consultant, completed a generalized format of reporting information on social impact of water pollution. In the meantime, the international consultant assisted by the project staff, and on a base of information provided by the national consultants, prepared a basin-wide overview of the national reports. Between January and April 1999, the results were incorporated into the overview of the Transboundary Diagnostic Analysis.

1.2.5 Integrate updated National Reviews and DWOM results with initial Transboundary Analysis (TA) to produce a draft basin-wide environmental status and strategy for tackling priority transboundary issues

The first draft of the transboundary analysis was completed in January 1999, the second in February 1999.

1.2.6 Hold Technical conference on transboundary pollution

In November 1998, the project management selected location, proposed dates, and organized logistic arrangements for a conference on transboundary issues. The program of the conference was developed in December 1998, and the conference itself was held in January 1999. The conclusions and proceedings of the conference were circulated among the Danube basin countries five weeks later. The definitive version of transboundary analysis was available in May 1999.

Objective 2: Review Policy for Protection of the Danube Basin and Black Sea

Sub-objective 2.1: Promote a Pollution Prevention and Reduction Policy Review

2.1.1 Prepare a timetable and a process for implementing and, if needed, updating the Danube SAP with an aim of aggregating quantified targets for pollution prevention and reduction

The project has, so far, within the frame of PMTF meetings, and in collaboration with the International Commission, organized three consultative meetings (in November 1997, October 1998, and in May 1999) with Danube countries to discuss updating the Danube Strategic Action Plan. The participants of the meeting agreed upon approaches to updating the SAP. Working groups, consisting of experts from the Danube Basin Countries, were organized to develop SAP progress indicators, prioritize work on hot-spots and wetlands, achieve policy consensus concerning TDA and GEF pollution reduction targets and ecological rehabilitation. The SAP update was also discussed in national NGO workshops and in national planning workshops.

2.1.2 Hold joint technical discussions with Danube and Black Sea countries to agree load/concentrations and sources of priority pollutants and wetland/floodplains of overall (Black Sea) basin-wide significance

2.1.3 Hold policy discussions with Danube and Black Sea countries to agree necessary pollution reduction strategies for the Black Sea Basin, consistent with GRF Operational Strategy

The project held one technical workshop on December 1998 to discuss: loads, concentration and sources of priority pollutants impacting the Danube and the Black Sea; and the rehabilitation and management of wetlands and floodplains of basin-wide significance. It held also three meetings in March, August and December 1998 to discuss technical strategies and policy basis for reducing the impact of priority pollutants within Black Sea basin.

2.1.4 Prepare pollution prevention and reduction programs for priority pollutants, especially nutrients

In December 1997 and January 1998, the project management developed a general framework for prevention and reduction programs for priority pollutants. The national teams prepared pollution programs and, between January 1998 and June 1999, held consultations with both the economic sector and non-governmental organizations involved. The program was completed in June 1999.

2.1.5 Integrate pollution prevention and reduction strategy into the SAP revision process

Between February and June 1999, the project team incorporated the results of the initial pollution prevention and reduction programs into the drafting process for the revised SAP.

Objective 3: Increase public awareness and participation

Sub-objective 3.1: Raise public awareness about pollution reduction activities

3.1.1 Launch public awareness program based on updated National Reviews and TDA – produce and disseminate a general brochure

In February and March 1998, the project prepared materials for a basin wide workshop to train national facilitators from the government and NGOs, and published guidelines for conducting national workshops. Eleven workshops for national NGOs and eleven national planning workshops were held between May and November 1998.

3.1.2 Hold consultations with local Stakeholders about priorities for transboundary pollution reduction

During the eleven national planning workshops held between May and November 1998, the project organized: (1) review of national transboundary pollution problems, (2) overview of national baselines, and (3) overview of wetlands and floodplains. Then, in January 1999, the project organized a technical conference on transboundary pollution. The conference reviewed the results of the transboundary diagnostic analysis. The project held as well, between May and November 1998, sub-regional and national consultations (planning workshops) and discussions about common strategic approaches to pollution reduction and ecological rehabilitation in the river basin and coastal Black Sea areas. To gain some feedback on the emerging pollution reduction programs, the project organized in May 1999 a pollution reduction program workshop.

3.1.3 Distribute three editions of “Danube Watch”

In March, June and September 1998, the project prepared, edited, and published three issues of the “Danube Watch”. The fourth issue (not included in the original work program) will be edited and published in July 1999. Finally, the project will edit an easy-to-read volume of Danube Watch reporting the key points of the SAP and PRP. This fifth edition is scheduled for September 1999.

3.1.4 Support the Danube Environmental Forum and national NGO meetings

The project held two meetings of the Danube Environmental Forum (in November 1998 and in March 1999) to discuss and agree the response of environmental groups to the on-going review of the SAP. From May to September 1998, the project has organized national NGO meetings to discuss strategies for influencing the government, business, and the public on the issues relevant to the Strategic Action Plan review. Finally between May and October 1998, the project, jointly with the Danube Environmental Forum, organized in Bulgaria, Romania, and Ukraine the national workshops aiming at reinforcement of cooperation between the NGOs from these three Danube and Black Sea countries.

3.1.5 Provide small grants for community-based pollution reduction and awareness projects

Between March and May 1998, the project established the mechanisms of awarding small decentralized grants in each Danube country. The grant program was elaborated and publicized widely between May and June 1998. The implementation of grants started in September 1998. The total budget of US\$200,000 was allocated. The small grant program will probably be completed in September 1999.

Sub-objective 3.2: Improve coordination and information exchange

3.2.1 Establish Danube internet network

Between January and March 1998, the project assessed the existing information system in Danube region. After that assessment, the project convened, still in March 1999, a Danube information system workshop that reviewed the existing information and created ad hoc working group that developed tools for information Internet network. The members of the workshop, jointly with the project management and the ICPDR, decided to establish the Danube Internet network as a part of the larger ICPDR information system. The government of Austria provided additional US\$280,000 for development of that information network. The development of network itself will take one year, between December 1998 and December 1999. Actually (June 1999), the project installed the appropriate hardware and software for the network (supported by additional funding by the Austrian Agricultural Ministry by US\$50,000). It is foreseen that the final product of this activity will be delivered as scheduled, in December 1999.

3.2.2 Update and disseminate DANIS

Following the recommendation of the workshop held in March 1998 (activity 3.2.1) and by joint decision of the project management and the IPCDR, the obsolete DANIS information network was incorporated into modern and widely used ICPDR information network DANUBIS

Objective 4: Develop the financing of the pollution reduction program within the Danube SAP

Sub-objective 4.1: Develop portfolio of Danube basin projects

4.1.1 Develop financing strategies for the pollution reduction program within the SAP, in accordance with the Basin-wide strategy

The project prepared formats for financing strategy for pollution reduction as early as in December 1997 and January 1998. The national teams confirmed their readiness to contribute to development of financing strategies and started to prepare the national strategies between February and November 1998. Overall basin-wide financing strategies were reviewed in a workshop held in February 1999. They were finally incorporated in the revised SAP in June 1999.

4.1.2 Prepare project documents for priority hot-spots projects for investment consideration

The model structures of project documents for pollution reduction in Danube countries were prepared by the project management, assisted by a consultant, in December 1998 and January 1999. The elaborated national projects were incorporated progressively into a computerized project file and, in May 1999, all developed projects (according the model) were reviewed in a Pollution Reduction Program Workshop.

4.1.3 Prepare the outline descriptions of wetland, floodplain and demonstration projects for potential donor grant support

The model structures for project document were proposed between February and June 1998. Between June and November 1998, the country teams prepared individual projects with assistance of an international consultant. The implementation strategies were identified and developed between October 1998 and April 1999.

Sub-objective 4.2: Mechanisms to provide sustainable financial support for the Danube River Basin

4.2.1 Feasibility of establishing a Danube Environmental Fund, including the exploration of the economic instruments needed

Between April 1998 and April 1999 the project team, ICPDR, and a consultant conducted a feasibility study of options for establishing an international Danube Environmental Fund. The feasibility of this fund was discussed in a workshop in February 1999. From September 1998 to February 1999, the international community was consulted on provision of funds for the Danube Environmental Fund.

4.2.2 Prepare structures, rules etc. for a Regional Fund, or other mechanism as agreed

The rules and structures of the regional funds were elaborated by the project between April 1998 and January 1999 as a part of the feasibility study (activity 4.2.1).

Sub-objective 4.3: Finalize and agree on the process for adopting a refined SAP

4.3.1 Integrated portfolio of investment and capacity-building projects, and regional financing mechanisms, into SAP

Between February and May 1999, the project organized discussions of results of financing strategies and project pipelines for pollution reduction programs. These strategies were discussed with groups responsible for the updating SAP. As a result, between February and May 1999, the project, the ICPDR, and the drafting group have prepared an updated version of the SAP.

4.3.2 Adopt updated Danube SAP at the ministerial conference

The updated versions of SAP and PRP were discussed at a regional workshop in May 1999 and then presented to the IPCDR Steering Group in June 1999. The ministerial conference that will discuss and eventually adopt the Danube SAP will be organized by ICPDR in November 1999 or early in 2000.

4.3.3 Donor Pledging conference (or PC meeting) for priority investment projects

The project documents, including proposed financing packages for pollution reduction projects, were finalized by June 1999. These documents were consulted with donors during the regular PMTF meeting, during individual consultations, and during presentation of country or regional documents to the PMTF. Subsequent meetings with donors are scheduled for November 1999. Two special editions of a journal 'Danube Watch' will discuss the pollution reduction program and review the SAP.

Cooperation between UNDP and The European Commission

The Project assisted the UNOPS and EC in updating an agreement between the UNDP and the European Commission. The updated agreement was presented to the Danube Task Force for review in 1998. The agreement was approved in 1998.

Danube Task Force

The project organized one meeting of the former Task Force (TF), two meetings of the new Program Management Task Force (PMTF), and provided financial support to the recipient countries for attendance. The project participated in discussions concerning the transfer of responsibility for implementation of the SAP from the PMTF to the new TF established under the DRPC.

ANNEX VI

OUTPUTS

Objective 1: Complete the knowledge base for priority setting (Output description is based on Van Hoof findings – Annex VII)

Sub-objective 1.1: Update National Reviews and analyse National Action Plans, using a common format

1.1.1 Eleven updated National Reviews and an extended and improved Danube Water Quality Model for analysis of transboundary pollution loads and export to the Danube delta and Black Sea

1.1.2 Two National Reviews and an extended and improved Danube Water Quality Model for analysis of transboundary pollution loads and export to the Danube delta and Black Sea

The project has received national reviews from nine countries (except Austria and Germany). The reviews were updated and put in a common format. Each of them contained pollution emission data required for the transboundary analysis and the water quality model simulations. However, the quality of data and the reports produced by the countries was unequal. The most salient inadequacies are:

Slovenia

Frequency of the immission measurements on surface waters is very low (four per year) and mostly performed at low river flows which does not allow reliable calculations of loads of priority pollutants.

Czech Republic

Immission measurement frequency is only twelve per year; load calculations are not given.

Slovakia

Missing information on sampling frequencies; no details on calculation of loads

Only immission concentrations for the priority parameters requested are given. Organochlorine pesticides and triazine herbicides residues are reported without mentioning concentrations.

Hungary

No observation.

Bulgaria

Data available are limited to priority parameters. Low sampling frequency (once per month).

No load calculation description. The report is written in very general terms.

Romania

Methods used for load calculation are not described.

Moldova

Different water quality problems mentioned, but not described systematically. No systematic information on parameters measured and sampling frequencies; no indication on load calculation. Information reported in a non structured way.

Ukraine

Lack of systematic information on sampling frequencies and analyzed parameters. Only immission concentrations are reported. No information about loads.

Croatia

Sampling frequencies are not mentioned. Loads have been calculated by scientifically unsound method.

Bosnia-Herzegovina

Only a very limited set of water quality data is available. Hot spots were not prioritized.

Federal Yugoslav Republic

Lack of reliable time series of immission values after 1992.

1.1.3 Calculation of the national baselines for pollution reduction from priority substances (especially phosphorus) impacting the Danube River and Black Sea

Pollution Reduction Program Report (PRP), page 48, provides national baselines and incremental costs for the proposed projects. The division of total costs into baseline and incremental were calculated in a simple and schematic manner that is satisfying at this stage of PRP reporting. The baselines should be, however, recalculated once an identified donor will consider the project for implementation.

*Sub-objective 1.2: Complete the Transboundary Diagnostic Analysis (TDA)*1.2.1 Prioritised list of hot-spots relevant to the pollution reduction program in the Danube River Basin

The list of prioritized hot spots is incorporated into a report "Transboundary Analysis," June 1999.

1.2.2 Substantially validated Danube Water Quality Model capable of quantifying transboundary pollution loads in the Danube River Basin and export to the Black Sea, ready for discussion and approval as a management tool by all Danubian countries

The output is described in a document “Danube Water Quality Model simulations in support of the Transboundary Analysis and the Pollution Reduction Programme”, dated June 12, 1999. The model (DWQM) simulates the flow of pollutants through the Danube River basin. The Model may simulate pollution by such substances as BOD, COD, N, P, or oils. It aimed at evaluation of transboundary pollution and calculation of various pollution reduction scenarios.

However, now, due to the limited water pollution quality data available, the model may be used in preference to simulate the N and P pollution according to two scenarios (high or low pollution). The results should be interpreted with caution.

The first simulations by the DWQM indicate the most important sources of N and P pollution, demonstrate that diffuse pollution is the most important contributor to N and P pollution in the Danube basin and that the impact of wetlands on N and P reduction is limited.

1.2.3 Basin-wide overview of the wetlands and floodplain network and a program of baseline and incremental management interventions which will contribute to transboundary pollution reduction and nature conservation.

The draft report ‘Evaluation of Wetlands and Floodplain Areas in the Danube River Basin’ (February 1999) evaluated indirectly (e.g. by the number of days a landstrip has been flooded) the effect of wetlands on N and P removal. The report made clear that:

- Nutrient reduction by wetlands is only a side effect of wetland rehabilitation and should not be considered as an alternative for waste water treatment;
- Involvement of beneficiaries in this activity is a prerequisite for success for wetland restoration.

1.2.4 Basin-wide overview of Danube water pollution on people is prepared and integrated into the Transboundary Diagnostic Analysis

A document that covers this subject is very general and does not handle the hygienic risks adequately.

1.2.5 Draft final version of the Transboundary Diagnostic Analysis for wide international review, including by IC Emissions Expert Group

Transboundary analysis is based on national reviews that contained many inconsistencies. The report describes the results but not mention any conclusions neither in relation to the Danube River basin nor to the Black Sea.

1.2.6 Conference proceedings and the final version of the Transboundary Diagnostic Analysis

The conference was held in January 1999; the results of discussions were incorporated in the definitive version of the transboundary analysis in May 1999.

Overall output of Objective 1:

The outputs from the first sub-objective represent the best available knowledge on Danube River basin pollution. All together, the information provided a first input to the basin pollution model. It helped the countries and the project to identify the important sources of pollution, and to prepare proposals for pollution reduction projects.

The overview of national reports shows, however, that they differ strongly in quality. All reports focus on pollutant concentrations (quantity of pollutant in a given volume of water), whereas pollutant loads (quantity released from the pollution point) - important tools for policy evaluation - are seldom mentioned.

A major problem affecting successful implementation of the objective was lack of sufficient and reliable imission water quality data needed for the transboundary analysis and for the validation of the Danube Water Quality Model. This shortage could not have been overcome within the duration of the project.

In general, the reports produced represent a high quality despite of the burden of insufficient data. Report on the Danube Water Quality Model demonstrate elegant approach to solve this basic problem. The model as well as other outputs represent a good achievement of the immediate objectives of the project, and will contribute to the development of the region.

Objective 2: Review policy for protection of the Danube Basin and Black Sea (Findings of S. Manikowski)

2.1.1 An agreed timetable and approach for updating part or all Danube SAP is prepared. In particular the project has designed an approach to updating the pollution reduction targets for priority substances and sectors, required to ensure protection the Danube River Basin and the Black Sea

A common timetable and approach for updated the Danube SAP was elaborated and agreed upon durind a Facilitator Training Workshop in March 19, 1998. The workshop's approach was based on the Target Oriented Program Planning methodology which aimed at reinforcing country-driven initiatives, and ensuring that government, administration, NGOs, scientific institutions, and cooperating agencies are all involved in the planning process.

2.1.2 An agreement is reached on the priority pollutants and sectors affecting the Black Sea Basin, and a strategy is developed to overcome current environmental problems

The agreement on priority pollutants and sectors was reached and the list of the priority pollutant incorporated into the revised Strategic Action Plan (SAP). This agreement was based on the National Reviews, which described and analyzed the socio-economic impact, water quality, water engineering, and financial mechanisms. At the regional level, these data were synthesized and used to prepare a comparative socio-economic analysis, develop a financing mechanisms, and complete an investment portfolio.

2.1.3 First steps are taken toward a technical and policy agreement. These agreements cover the strategy pollution reduction and ecological rehabilitation in the Danube/Dniester/Dnieper/Don river basins and along the Black Sea coastal zones

The workshop and meetings initiated by the project created both a basis for national and regional policies; and strategies for pollution reduction, and ecological rehabilitation of both basins.

2.1.4 Draft national Pollution Reduction Programs for all Danube countries

The drafts of the national pollution reduction programs and the draft of the Danube River Basin Pollution Reduction Program (PRP) were prepared and finalized in June 1999. The final PRP draft was amended on the basis of comments and validating arguments of the decision-makers from the member countries. The PRP corresponds to the priorities defined separately by each nation. It focuses on point source pollution. The PRP is the basis for developing investment portfolio in support of the SAP.

2.1.5 Introduction into the SAP the policy directions concerning pollution prevention and reduction

The SAP was finalized in June 1999, and it contains the policy considerations perceived by member country representatives.

Overall output of Objective 2

According to the Project Document, the activities conducted and the products achieved in the frame of objective 2 should

- Contribute to an agreement on policy directions for pollution prevention and reduction in the Danube River and Black Sea basin;
- Lead to an updating of the Danube SAP;
- Identify in each Danube country a range of pollution reduction targets.

The present section will evaluate activities and their outputs. It will describe how they contributed to achieving each of these aforementioned three goals.

A. Agreement on policy directions for pollution prevention and reduction in the Danube River and Black Sea basins.

The studies and investigations undertaken in activities 2.1.2, and 2.1.3 designed a picture of a progressive poisoning of the Black Sea ecosystems due to pollutants produced by surrounding countries. The studies clearly indicated the countries responsible and warned them about the economic and social consequences of polluting civilization. The studies indicated the current weaknesses in the monitoring of pollution. The information provided helped to bring the issue of reducing Black Sea pollution to politicians, political organizations, economic agents, research institutions, NGOs, and citizens attention.

The project, jointly with ICPBS and ICPDR, attempted to formulate both policy and strategy for reduction and prevention of pollution. The policy is discussed in the “Summary Report of the joint ICPBS and ICPDR of Ad-hoc Technical Working Group” dated May 1990. On page 12, under the section “Policy Perspectives for Controlling Eutrophication”, the report makes reference to an “iterative management” that has been taken by the Black Sea Strategic Action Plan as an approach to reducing pollution.

The iterative management approach is as follows: When complete removal of pollutants is desirable but unattainable in the foreseeable future, the progress in pollution reduction may be achieved by an iterative process. In the first step of this process, each partner agrees to reduce pollution by some reasonable amount during a given time frame. Once this is attained, the partners set the next reduction target. The iteration continues until all partners agree that pollution emission has been reduced to a satisfactory level. The iterative steps in pollution reduction are accompanied by research programs, pollution measurements, and public awareness building.

It seems that both Commissions tacitly agreed on this approach. According to the cited Summary Report (page 11), the group proposed to both Commissions that pollution reduction should aim at restoration in the Black Sea of an ecological state similar to that of the 1960s. This well corresponded to the “satisfactory level” attended at the end of the iterative management method. Furthermore, (keeping in mind the iterative steps) the group believed that (still on page 11) “in order to start, an agreement is needed on Black Sea nutrient input limits and on the state of the ecology regarding these inputs.” Then, in the next paragraph, the document proposes to both Commissions to maintain temporarily the discharges at 1997 level in order to see the Black Sea ecosystems response.

The Commission’s proposal needs yet to be endorsed by the States and translated into specific commitments by the countries concerning the first step of the iteration process: the limitation of pollutants, and then, the programmes accompanying these limitations. The countries should take initiative in determining the policy directives and policy implementation instruments for pollution reduction since, as it was rightly stressed by three participants of a third meeting Group, and cited in the Draft Minutes of the third meeting (page 5) “any true acting is only at the respective national level, and the function of the Commissions is to have an ‘umbrella’ via the ‘participation of cooperation’.”

The Group has also attempted to develop some strategies. In the second meeting of the joint ICPBS and ICPDR Ad-hoc Technical Working Group, the Group defined “possible strategies” for reducing pollution as follows (Summary Report, page 12):

- The long-term goal for all States in the Black Sea Basin is to take measures to reduce the loads of anthropogenically applied nutrients and hazardous substances to such levels necessary to permit Black Sea ecosystems to recover to conditions similar to those observed in the 1960s.
- As an intermediate goal, urgent control measures should be taken by all States in the Black Sea Basin in order to avoid that the discharges of nutrients and hazardous substances into the Seas exceeded those that existed in 1997. The ‘Group’ recognized that these 1997 discharges are only incompletely known and that further work has to be undertaken to substantiate the size of the loads received by the Seas (Black Sea proper; Sea of Azov).
- The ‘Group’ concluded that the inputs of nutrients and hazardous substances into both receiving Seas have to be assessed in a comparable way, and that to this very end a common AQC (Analytical Quality Control) system and a thorough discussion about the necessary monitoring, including the sampling procedures, has to be set up.
- The ‘Group’ also concluded that the ecological status of the Black Sea and the Sea of Azov has to be further assessed, and that the comparability of the data basis has to be further increased.
- Both the reported input loads as well as the assessed ecological status will have to be reported annually to both the ICPBS and the ISPDR.
- The States within the overall Black Sea shall have to adopt strategies that will permit economic development, whilst ensuring appropriate practices and measures to limit the discharge of nutrients and hazardous substances, and to rehabilitate ecosystems which assimilate nutrients.
- Based on the annual reports and on the adopted strategies for the limitation of the discharge of nutrients and hazardous substances, a review shall be undertaken in 2007. It will focus on the further measures that may be required for meeting the long-term objective (reaching an ecological status similar to the conditions observed in the 1960s).

The Group’s definition of the strategy may be considered as a preliminary identification of problems related to the pollution reduction policy implementation. The elaboration of national and regional strategies is yet to come.

In conclusion, the activities 2.1.2, 2.1.3 and their outputs yielded several positive results. They helped in understanding the Black Sea eutrophication problem, provided evidences for the decline of coastal ecosystems, raised the problem of nutrient sources to the Black Sea and warned about the danger of doing nothing. They are the first steps in designing a specific common approach on policies, strategies, and technical measures to pollution reduction and ecological rehabilitation in the Danube/Dniestr/Dnieper/Don river basins and from Black Sea coastal zones.

B. Updating the Strategic Action Plan

The Danube River Basin Environmental Declaration of 1994 required that the SAP prepared in 1994 be evaluated and updated by 1997. The activities 2.1.1, 2.1.2, and 2.1.5 and their outputs aimed at this outcome. The final SAP, the SAP-1999, is one of the outputs.

The SAP-1999 is a document of 150 pages that summarizes the most important pollution reduction measures both current and future for the Danube. For over a year and a half, the project its member countries have mobilized representatives of technical ministries concerned, NGOs, and, through the consultations on the national level, the private sector. The project provided several inputs, such as overall guidance, organization, financial support and technical expertise. The national level contributors collected data, prepared documentation, and formulated proposals for the revision of the SAP. As a result, the SAP 1999 reflects an understanding of how pollution reduction is approached by DRPC member countries. The SAP-1999 is accompanied by a Danube River Pollution Reduction Program (PRP) containing description of priority targets for pollution reduction identified in each Danube country. The draft SAP-1999 was discussed at a workshop in May 1999, adopted in June 1999, and will be presented for approval to the technical ministries of the member countries by the end of this year.

Both the SAP-1994 and SAP-1999 stem from the decisions taken by the Environmental Program for the Danube River Basin (EPDRB) created in Sofia in 1991. The content of the SAP should indicate to the countries how the EPDRB program formulated in a document called Danube River Protection Convention (DRPC) will be implemented. The SAP should serve as an important tool for policymakers (SAP dated 1994, page i) and provide direction and framework for regional cooperation among countries in the Danube River basin (Ibid., page iv). The SAP should indicate the regional policies and strategies for water pollution reduction and environment protection (SAP-1999, page v).

Since the SAP-1999 is continuation of the SAP-1994, and both documents concern the program formulated in the DRPC, an evaluation of the SAP-1999 requires a brief presentation on both the DRPC and the first SAP.

Danube River Protection Convention (DRPC)

According to DRPC or Convention, the cooperation among the Danube River basin countries in river pollution reduction may take on several forms including consultations, joint actions and exchanges of information (Article 4 of the Convention). This cooperation should consist of the following (Ibid., Articles 5 to 17):

- Prevention, control and reduction of transboundary impact;
- Specific measures for water resources protection;
- Limitations on emission objectives and criteria for water quality;
- Emission inventories, action programs and progress reviews;
- Monitoring programs;
- Obligatory reporting;
- Consultations;
- Information exchange;
- Informing the public;
- Research and development;
- Communication, warning and alarm system, emergency plans;
- Mutual assistance.

The Convention covers a broad area of pollution reduction, without necessarily involving the EPDRB into policy and strategy efforts. In fact, the word policy or strategy does not appear in the Convention.

Strategic Action Plan of 1994 (SAP-94)

The first Strategic Action Plan (SAP-94) was drafted by a special group mandated by a task force that had been established by the EPDRB. The draft was completed in October 1994. In December 1994, the Environment or Water Ministries of the Danube countries and a Member of the European Commission responsible for the Environment, endorsed the SAP-94.

The SAP-94 has four goals (page 13):

- (1) Improvement of aquatic ecosystems and biodiversity in the Danube River basin and reduction of pollution loads entering the Black Sea;
- (2) Maintaining and improving the quantity and quality of water in the Danube River basin;
- (3) Controlling the damage from accidental spills; and
- (4) Development of regional cooperation in water management.

The SAP clusters the sources of pollution and water quality problems into 'Sectors'. The SAP identifies four sectors (page 9 and 10):

- (1) cities;
- (2) rural towns and villages;
- (3) industry, energy production and transport; and
- (4) agriculture.

The agents that need to change their behavior so as to ease the pollution problems are called 'Actors'. The SAP considers actors to be (page 10):

- (1) public authorities;
- (2) public and private enterprises; and
- (3) general public and NGOs.

The policies that should help countries achieve the goals consists of (page 16):

- (1) Integrated water management;
- (2) Environmentally sound sector policies;
- (3) Lowering the of risks of accidents; and
- (4) Investments.

The SAP-94 identifies 59 wetlands to restore and 179 hot spots for action. It also describes the Danube River basin environment and its important pollution problems and priorities.

The SAP contains some inconsistencies. We will discuss those relevant to the evaluated SAP 1999.

First, the formulation of the SAP-94 goals differs depending on which area of the document you read.

The goals listed on the page 13 have been quoted previously in this section. On the page 71, the first two goals were stated as follows: (1) "Maintain and improve the availability and quality of waters in the Danube River basin;" (2) "Reduce the negative impact of activities in the Danube River basin on the riverine ecosystem and the Black Sea." In the executive summary, page v, the first goal from the page 71 become the second, and the second become the first.

Furthermore, the sectors cited earlier from the pages 9 and 10, are classified differently in page 15: (1) Phased expansion of sewerage and municipal waste water treatment; (2) Reduction of discharges from industry; (3) Reduction of emissions from agriculture; (4) Conservation, restoration and management of the wetland and floodplain areas of the tributaries and main stream of the Danube River basin.

Finally, the meaning of so called "Actors" is not defined. On page 10, the SAP-94 describes the role for two of them in pollution reduction: the public authorities and the general public. Nowhere does it state the role for public and private enterprises. The definition of regional cooperation (page 9) is circular: "Regional cooperation

means the full participation in and utilization of regional mechanisms and structures for international cooperation, consultation and coordination.” Table 1.3 that identifies links between actors and actions to water management problems (page 12), proposes some questionable links. For example, the public authorities should ensure adequate tariffs to cities but not to rural towns and villages, nor to industry, agriculture, and livestock. The public and private enterprises should safely dispose the hazardous waste from rural towns and villages but not from cities, industry, or agriculture. Finally, the general public and NGOs are in charge of managing the livestock manure. On pages 16 to 18, the SAP lists the short term and medium term targets, and on pages 18 to 23, it describes in general and qualitative terms, short- and medium-term actions. However it is virtually impossible to put target on these actions.

In conclusion, it can be stated that, (1) the SAP really needed to be improved and updated; (2) nevertheless, it covers a gamut of actions included in the Convention.

Strategic Action Plan of 1999

The SAP 1999 identifies one “core problem” namely the “ecologically unsustainable development and inadequate water resources management in the Danube River basin”. From this core problem stems one objective: “Achievement of sustainable development in the Danube River basin,” which in turn is composed of three sub-objectives:

- 1) Improvement of the wastewater and solid waste management. This objective concerns municipalities. Its realization will deliver the following outputs:
 - Extended and upgraded public sewer system by the year 2005, operated in 90% of municipalities with population over 5000;
 - Appropriate wastewater treatment, by the year 2005, assured in 70% of settlements with population over 5000;
 - Proper solid waste management by 2010, applied in 90% of localities with population over 50 000.
- 2) Introduction of best available techniques, best environmental practice, and abatement of water pollution. This objective concerns industry and mining; it will be achieved through four outputs:
 - Clean technologies and the abatement of water pollution, introduced by the year 2010;
 - Pre-treatment facilities of industrial waste-water, implemented by the year 2010;
 - Adequate management of all enterprises, ensured by the year 2005;
 - Hazardous substances treated and disposed of in proper landfills by 2010.
- 3) Implementation of good agricultural practices and mechanisms for sustainable land management. This objective will be achieved through five outputs:
 - Integrated approach for land and water management in all countries by 2010;
 - Adequate use of pesticides and fertilizers; by the year 2010, the number of certified organic farms be increased by 20%, and in other farms the P and N consumption stabilized at 1998 level;
 - Waste water discharged by animal farms properly treated. By the year 2005, 50% of animal farms with over 500 livestock units equipped with the wastewater treatment plants, and by 2010, 75% farms be equipped;
 - An accelerated run-off and erosion prevention plan. By 2010, the length of hedgerows, forest belts and wind breaks increased by 25%, and 2000 km of regulated rivers be restored;
 - Wetlands and floodplains adequately protected and restored. By the year 2005, 110 000 ha, and by 2010, 140 000 ha of wetlands restored.

The SAP 1999 lists 328 hot spots of high and medium priority for consideration by the pollution reduction program.

The SAP 1999 contains a list of nine plans and programs suitable to regional cooperation (page 128). However there is no indication on a specific role these plans would play in pollution reduction or on their link with national plans. It is not clear if national and regional policies as well as institutions are sufficient to support and successfully implement the SAP 1999.

The SAP contains two important sections: 4: Regional Policies and Strategies (pages 45 to 66), and 5: Sector Strategies (pages 67 to 112).

Section 4: Regional Policies and Strategies analyzes regional problems (the core problem, its direct causes, roots, and direct and ultimate effects), identifies causes of water pollution (hot spots, diffuse sources of pollution, and Significant Impact Areas), describes the pollution effects (transboundary and effects on the Black Sea ecosystems), and finally, analyzes the objectives and targets for pollution reduction and sustainable water management. Thus, the section content develops the arguments supporting investment in pollution reduction projects (proposed in the SAP and outlined in detail in the RPR) than rather the regional policy and strategies.

Section 5: Sectorial strategies. The section contains, for all three sectors (municipal, industry and mining, and land use – agriculture), a situation analysis (sector importance, current assets as know-how, legislation, financial resources, public awareness, transboundary effects); a problem analysis (sector core problems, causes end effects of environmental problems); and sector objectives (their description, expected results, important assumptions and impact indicators).

There is no doubt that both sections reflects well the results of national investigation and that they both (summarized) have their place in the SAP. However, the SAP, a document of such political importance, should detail and discuss policy considerations and strategy issues in details. The need for policy and strategic considerations may be justified as follows:

The environmental policy and macro economy's concerns are as follows:

- Finding the best way to achieve an efficient and cost-effective pollution reduction. (This means the point where marginal pollution abatement cost and marginal damages are equal);
- Finding the ways to assure equitability in distribution of the burden for pollution reduction (the relatively well - off people may be charged more than the less fortunate);
- Funding the ways to assure an acceptable distribution of pollution emission charges;
- Knowing how to assure the policy is enforced at the lowest cost;
- Finally, that it take into consideration ethical issues, moral considerations, and national traditions.

It's important for the project to know to what extent implementation of its objectives helps or hinders national policy; and, on the other hand, to evaluate the policy influence on the project's pertinence, impact, and duration. It would be the most useful for the project, it's implementing agencies, financing institutions, and donors to know the government environmental policy and to check it against the project costs, objectives, assumptions and indicators.

The national policy may be evaluated as well for its coherence at the central, sector and local levels and, on a regional scale, for its coherence among the countries. In particular, it would be useful to evaluate periodically how it compares to the regional and country policies and the proposed project's objectives so as to assure that the project's activities and objectives aim for the same goal as the policies coming from the government or region.

Strategy (or policy implementation instruments)

The governmental strategy for the implementation of an environmental policy is based on two basic instruments: environmental standards and incentives.

An environment standard is the mandated level of performance that is enforced by the law. The best available technology (BAT) which DRCP recommends (DRCP, Annex I part I) is a standard. The maximum released level

of a given pollutant is also a standard. The standards have drawbacks. To be just, the standards cannot be identical for all industries and often the standards do nothing to stimulate, improve or innovate.

The incentives remunerate agents in proportion to their compliance with the law. Taxes, subsidies and transferable discharge permits are the most common incentives. The incentives stimulate the polluter's invention and contribute to technology progress, but they are difficult to apply if the pollution discharge measurements are inadequate.

As in the case of the policy, it is important for the project designers to be aware of the government instrument used to realize the environmental policy. The project's viability and its economic importance depend strongly on the policy implementation strategy.

Regional policy

Finally, the success of a regional pollution reduction project depends on member countries' policies and regional agreements. Regional policy is of equal weight to sovereign national policies. However, international agreements are (usually) voluntary. In consequence, it is reasonable to suppose that a country will not sign a new agreement or honor an old one if the agreement will make it worse off. Knowledge of national policies can help negotiators of environmental agreements to strike the required equilibrium. More important, the regional project which is familiar with national environment policies and regional issues, can invest its resources among countries in such a way that the investment will encourage all countries to take part in a regional agreement. With a wide set of investments, the regional project may well assist a country to resist the temptation to free ride on the pollution control efforts of others.

C. Pollution Reduction Targets: Danube River Basin Pollution Reduction Program (PRP)

The Danube River Basin Pollution Reduction Program (PRP) supports the SAP 1999. It lists the projects for pollution reduction that has been agreed upon by the Danube basin countries during a series of meetings and workshops. The main source of information on projects, priorities and costs are found in the National Reviews. The RPR contains a detailed technical summary of priority projects to be executed in the Danube River basin. It describes 513 identified hot spots, and formulates 421 projects. For each of the 421 projects, the document specifies expected load reduction for BOD, COD, N, and P, baseline costs, incremental costs, and total investment cost.

The total investment is estimated at \$US 5 522 million, of which US\$ 3 289 million represent the baseline costs and US\$ 2 034 million the incremental costs (PRP, Annex 6, page 32). The investment should reduce the load of pollutant as follows:

Type of emission	Estimates of emission in thousand tons per year (SAP 199, page 52)	Expected emission reduction (PRP, Annex 6, page 30)	Improvement in %
BOD	324	421	?
COD	851	623	73.2
N	884 – 944	100	8.8 – 9.4
P	103 – 119	20	19 – 17

The projects were evaluated only in financial terms according to the current (1997) value of local currencies. There is no economic evaluation of the projects. There are great differences in financial cost effectiveness of the projects among countries and among sectors.

According to the PRP, the separation of total costs into basic and incremental is provisional and should be updated.

For five of the eleven countries involved, the total investment in pollution reduction, according to the PRP, represents a budgetary burden equivalent to more than 6% of Gross National Product in 1997 of the Danube River basin area of the country. For Bosnia-Herzegovina, it represents as much as 16% (PRP, Annex 11, page 1).

The PRP discusses little the economic and political consequences of the program on the beneficiary countries. It remarks, however, that the pollution reduction may result in two kind of economic consequences (page 39):

- Inflation of construction prices due to the short-term rise in demand for construction services;
- Restoration of wetlands may require the forfeiting of arable land.

Objective 3 : Increase public awareness and participation

(Based on the contribution of Esther Park, Annex VIII)

Sub-Objective 3.1: Raise Public Awareness about pollution reduction activities

3.1.1 Materials and events to publicise the need for pollution prevention and reduction and ecological rehabilitation in the Danube River Basin

3.1.2 Input to the development of the technical basis and policy for pollution reduction in the Danube River Basin and Black Sea is available.

The project did not produce materials or hold events to raise public awareness as outlined in the project document. Instead, the project felt that the objective 3 would be better served by holding a regional training workshop called “Target Oriented Program Planning” (TOPP), in which one NGO representative and one government representative from each country were trained in public participation methodology.

These representatives then became facilitators in the National NGO Workshops convened by the Regional Environmental Center for Central and Eastern Europe (REC), where national priorities were discussed and identified. These priorities were consequently introduced in the National SAP Planning Workshops where the results from the National Reviews (and the National NGO Workshops) were brought together to result in the revised SAP and the Pollution Reduction Program.

Further, the results of the National NGO Workshops were brought to a Regional NGO Consultation Meeting, in which NGO representatives from all 13 countries came together to discuss regional priorities and to re-establish or revitalize the Danube Environmental Forum (DEF).

In general, the DEF has been weak and unable to participate effectively in implementation of this project. Instead, the REC has taken responsibility for the National NGO meetings. For similar reasons, the DEF was unable to hold a joint workshop with the Black Sea Basin NGO Forum. Cooperation with the Black Sea project has been slow as a whole. So far there has been only a joint technical working group with the Black Sea.

3.1.3 Wide awareness of pollution reduction issues in the Danube River Basin and in international community

The “Danube Watch” has been published in three issues, with two more special editions forthcoming. Four thousand copies of each issue were being disseminated, and now the edition increased to 8000 copies. In the future, the Danube Watch will be published on the DANUBIS site, and its condensed version inserted into another existing environmental publication (in Austria).

After PHARE funding stops in October 1999, sustainability of the Danube Watch will be in the hands of a new publisher. There is the possibility of inserting advertisements into the journal by which it might be self-sustaining.

3.1.4 Stronger role for environmental NGOs in the Danube River Basin and practical cooperation with similar groups in the rest of the Black Sea region

The project was effective in the arena of public participation. Considering the scope of the project, most of the major NGOs in each country were brought into the SAP planning and revising.

The project greatly relied on the DEF for its sustainability in this component. However, the DEF is weak and unable to take on this burden. In the future, the ICPDR is willing to support public participation, but does not necessarily identify DEF as the agency through which it should happen.

It should be noted that the past failures of the DEF have alienated some NGOs from participating, most noticeably those in Hungary. As a group, a number of Hungarian NGOs refused to participate in the National NGO meeting and sent a letter of protest stating that they would not have anything to do with the DEF. Currently, the DEF is in the rather precarious position of not being legally registered as an entity. As with many NGOs, the organization has little know-how with regard to legality, financial viability, and general management. However, they have made good progress in information sharing. The members have created an e-mail network.

3.1.5 A series of community-based projects which will contribute to pollution reduction in the Danube River Basin and Black Sea

The small grants program destined to finance community-based projects was carried out by the REC. The project management developed guidelines for the grant attribution and publicized the program. Because of a delay in actually disseminating the grants, the impact and results of the program have not yet been revealed.

Sub-objective 3.2: Improve coordination and information exchange

3.2.1 Strong communication links among Danube experts, decision-makers and NGOs, and cost-effective means of publishing information about the Danube River Basin

3.2.2 An improved and extended DANIS information system accessible to the general public

The PCU began work on a web site DANIS (the Danube Information System) and found that it would be more effective in the big picture to incorporate DANIS into the system being created by the ICPDR, "DANUBIS." To date, the web site is not yet functional, but is expected to be fully operational by the fall of 1999. In the meantime, PHARE has published a Danube home page connected to that of REC, from which all activity will be forwarded to DANUBIS once it is functional. This home page is being hosted by the REC web site and has the appropriate links to maps, legislation, donors, and other relevant information. A counter was put into the system, from which it can be assumed that up to 1000 people have visited the site.

Overall output from the objective 3:

Although the project achieved its objectives concerning increase of public awareness and participation, the project design hampered the intentions and the goal of the public participation component of the project. While NGOs were effectively drawn into the decision-making process, the government side was less prepared for cooperation on this level. Nevertheless, overall, the project did what it needed to in order to fulfill the objectives. The full impact of many of these efforts has yet to be seen, as timing is a factor. And still, as in the case of any development project, this is just one step in the process.

The past weakness of the DEF and its current unresolved status is a critical factor for the future sustainability of public participation and cooperation in the Danube region. If the legal status of the organization is not adequately established from the beginning, its capacity to attract funding will be greatly diminished. Currently, the representatives of the DEF are unaware as to how and effectively establish the organization.

**Objective 4: Develop the financing of the pollution reduction program within the Danube SAP
(Prepared on the basis of findings of Friderich Schwaiger)**

Sub-objective 4.1: Develop portfolio of Danube basin projects

4.1.1 Financing strategies for pollution reduction developed for the particular circumstances of each Danube Country

The report “Analysis of Financing Mechanisms “ issued in March 1999 gives a general financing strategy recommendation for all countries. For the project financing, the study recommends to use at first the national resources (mainly water revenues and public funds), and then, when the national funding is no more available, the international financing. The study recommends promotion of private sector participation. Implementation of these recommendations requires significant improvement in revenue collection for water and waste water services.

4.1.2 A portfolio of investment-related pollution reduction projects for co-financing

4.1.3 A portfolio of wetlands and capacity-building projects for co-financing (grant) consideration

The “Danube River Basin Pollution Reduction Programme Report” of June 1999 contains a portfolio of 421 projects, including 246 hot-spots and 298 693 hectares of wetlands. The projects were identified, and their cost estimated by national experts. The PCU checked the information for plausibility. Total investment cost equals US\$5.5 billion. The total is distributed as follows: municipal projects – US\$3.5 billion; wetlands – US\$1.1 billion; others –US\$0.9 billion The baseline cost are of US\$ 3.5 billion, the incremental cost, US\$ 2.0 billion

According to the GEF regulations, only the transboundary project incremental costs are eligible for financing. Regarding the waste water treatment plants, the incremental costs represent the tertiary treatment. Regarding the wetland and floodplain projects, incremental is the cost of restoration.

The projects were ranked according to investment cost needed per unit of removed BOD, COD, P and N. Although the data should be systematically updated, according to the project management, the ranking of the top series projects should not be affected, as experience shows a good positive correlation between project size and priority ranking.

Sub-objective 4.2: Mechanisms to provide sustainable financial support for the Danube River Basin

4.2.1 An agreed feasibility study for establishing a fund

4.2.2 Agreed mechanism to set up long-term financing mechanisms for pollution reduction projects in the Danube River basin

A specialized agency (KfW) that conducted the study for creation of a Danube Environmental Fund have concluded that such a fund would not be feasible. The study, described in April 1999 in a report ‘Financing Pollution Reduction Measures in the Danube River Basin: Present Situation and Suggestions for new Instruments’, arguments thoroughly and convincingly against the fund. The arguments are supported by examples of difficulties experienced by other similar funds. The main arguments are:

- The wealthier countries have not interest in a compensation mechanism (wealthy countries contribute to the fund, less well off countries receive from fund);
- International taxes and pollution charges as source of finance is not accepted by all countries;

- The amount of available donor and IFI money would not increase by such fund - why to carry administration cost for such fund;
- EU extends sizeable concessional money to potential accession countries but not to a fund;
- PMTF can take over a possible brokerage function of the fund and assistance in project preparation.

As an alternative, the agency proposed a fund that will provide assistance for project identification, grants for investment projects, and packaging of projects for financing. This alternative was rejected by ICPDR Steering Committee.

As a result of the rejection, the KfW recommended establishment of a Project Appraisal Group (PAG) that would appraise the projects and, if they were conform to the ICPDR standard, recommend them to donors. Simultaneously with PAG, the KfW recommended creation of a Project Implementation Facility (PIF) that would support the ICPDR in regional investment programs, assist member countries in project preparation, and monitor the results. The cost of PIF for a 3 to 4 years would be of US\$2.3 million. The ICPDR endorsed the PAG and PIF proposals, and expects that the PIF may be finance by UNDP/GEF.

4.2.3 Updated revision of the SAP

The project has revised the Strategic Action Plan and enriched it with inputs from national reviews, workshops and international expert studies. The SAP follows the target-oriented project planning method. However it is overloaded with information and contains repetitions. In consequence, the document should be streamlined, restricted to essentials, well structured and made easy to read.

4.2.4 High level endorsement for the policy objectives and pollution reduction targets of the SAP

Endorsement of the final version of the revised SAP by the Ministers of the Danube countries is expected to take place at the Ministerial conference in Romania, scheduled for the end of 1999 or beginning of 2000.

4.2.5 Agreed co-financing for pollution projects

A donor pledging conference or a PPC meeting has not been held yet. However, according to the project management, the regular meetings of the PMTF (two to three times a year), usually combined with the Steering Committee in presence of major donors representatives, actually substitute such a meeting.

Overall output from objective 4

The successful completion of all outputs within the objective four allowed the project to

- Present a portfolio of 421 projects evaluated at US\$5.5 billion;
- Rank them according to investment cost effectiveness;
- Propose funding for regional activities; and
- Revise the Strategic Action Plan so as to include the newly identified projects.

The whole load of objective realization was in the hands national experts and based on national consultations. In consequence, the results genuinely reflect the national preoccupations and priorities. Even the output's weaknesses due to the difference in the quality of data available in the countries have important political and technical significance. They identify the domains to improve and motivate the countries to attain the same technical standards in project elaboration