

# ANNUAL REPORT

## on the Activities of the ICPDR in 2002



### Information

ICPDR – International Commission for the Protection  
of the Danube River / Permanent Secretariat  
Vienna International Centre, D0412  
P. O. Box 500, 1400 Vienna / Austria  
Tel: 0043-1-260 60-5738, Fax: 0043-1-260 60-5895  
e-mail: [icpdr@unvienna.org](mailto:icpdr@unvienna.org), [www.icpdr.org](http://www.icpdr.org)

## **Imprint**

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## Foreword



**2002 was for the ICPDR a year of events, challenges and achievements.**

The August flood in central Europe captured a lot of public attention and triggered massive institutional effort in the Danube countries. In response to the flood, the first Flood Conference was held in Berlin on September 15, ending with the German Federal Government's Five-Point-Programme to improve flood defense. Another international conference, held in Budapest on December 1, resulted in a joint statement expressing the participants' determination to strengthen international cooperation on sustainable flood management. The ICPDR responded by establishing a new Expert Group on Flood Protection and charged it with developing an Action Programme for Sustainable Flood Protection in the Danube River Basin by October 2004.

Under the guidance of the ICPDR River Basin Management Expert Group, all Danube countries made important progress in developing mechanisms for the implementation of the EU Water Framework Directive.

The main achievements include the development of guidelines for the assessment of surface and groundwater bodies, the preparation of a GIS system including the development of an overview map for the Danube River Basin, and the development of guidelines for economic analysis, transboundary issues and public participation in the planning process.

The MLIM Expert Group produced the 1998 and the 1999 Yearbooks of the Transnational Monitoring Network. Yearbook 2000 will be available early in 2003. Preparations are under way for the first comparative analysis of water quality in the five-year period of 1996–2000. It will show changes over time in water quality and ecosystems in the Danube River and its tributaries.

Results of the Danube and the Tizsa survey were published; summary reports in English and German languages, the main report containing a complete scientific analysis of the data, and a special report on the Tizsa survey are all available in the printed form and can also be downloaded from the ICPDR website.

The EMIS Expert Group has prepared an updated list of municipal and industrial point sources in the Danube catchment with reference year 2000. The list has been available on the ICPDR website since April 2002.

On December 3, the Sava Basin Agreement was signed in Kranjska Gora (Slovenia), establishing the modalities of cooperation between Bosnia-Herzegovina, Croatia, Slovenia and Serbia and Montenegro to restore navigation on the Sava and to assure environmental protection of its waters and ecosy-

## Foreword



stems. The ICPDR, with the assistance of the UNDP/GEF Danube Regional Project will cooperate with the Sava Initiative in preparing a pilot project for the development of a river basin management plan that would implement the EU Water Framework Directive.

Of particular importance in 2002 was the development of the DABLAS database for investment projects (under the Danube-Black Sea Task Force) and the preparation of over 150 project fact sheets. These projects will be prioritized and submitted for donor support. The DABLAS Task Force expects that the first donor meeting scheduled for early 2003 will pledge funds to co-finance municipal waste water treatment plants in the Danube and the Black Sea countries.

In 2002 the UNDP GEF Danube Regional Project within its first phase significantly contributed to the activities of the ICPDR and its Expert Groups. To complement and reinforce the work of the Expert Groups, 16 project components (out from 20) were prepared in consultation with the ICPDR experts, and most of them are under implementation. The first phase of the project will be finalized by the end of 2003 as an important step towards implementing the ICPDR Joint Action Programme

In order to respond to all tasks related to the implementation of the EU Water Framework Directive and to cooperation with the UNDP/GEF Danube Regional Project, additional capacities had to be mobilized. Therefore, three new expert bodies were created in 2002: for GIS, for economics, and for flood protection. Since they all rely on technical and organizational support provided by the Secretariat, the Secretariat will in 2003 have to draw additional support from consultants, who will work under its guidance.

The challenge facing the ICPDR in 2003 lies in implementing the numerous activities launched in 2002. This will only be possible with the commitment, cooperation, and support from governments, scientific institutions and NGOs. All Danube countries, contracting parties, NGOs and cooperating agencies, all those committed to and engaged in protecting waters and ecosystems in the Danube River Basin will have to make a concerted effort in order to build a sustainable and healthy environment in the Danube River Basin.

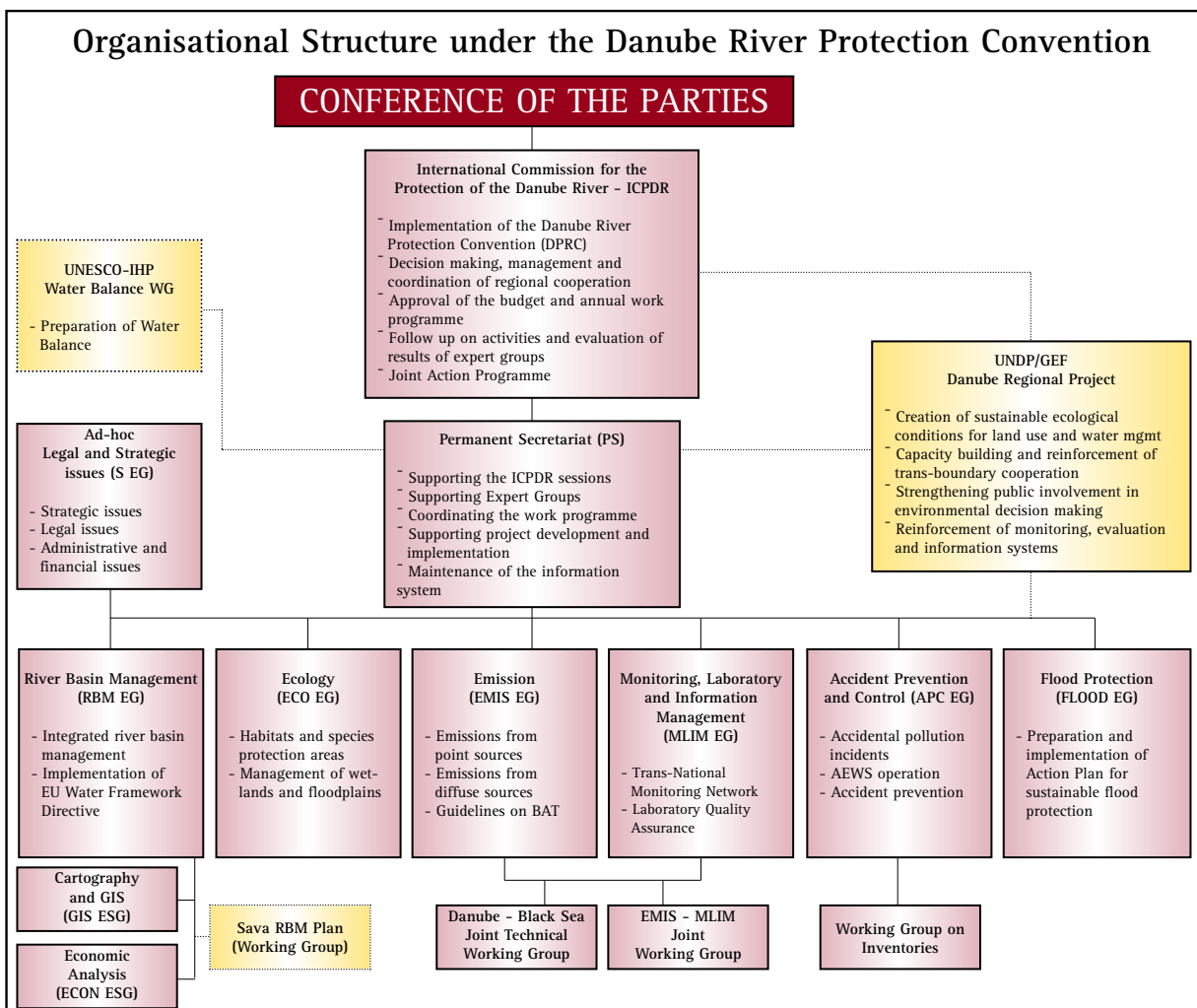
President of the ICPDR

# 1. Operational and Institutional Framework

The ICPDR in its 3rd Plenary Meeting held in Sofia from November 27-28, 2000 welcomed the request of Serbia and Montenegro (former Federal Republic of Yugoslavia) to accede to the Danube River Protection Convention with all the rights and duties of a contracting party. Serbia and Montenegro is currently a participant with consultative status in the ICPDR and has applied for its full membership. Ukraine ratified the DRPC, deposited the document of ratification at the Depository on December 13, 2002, and is currently

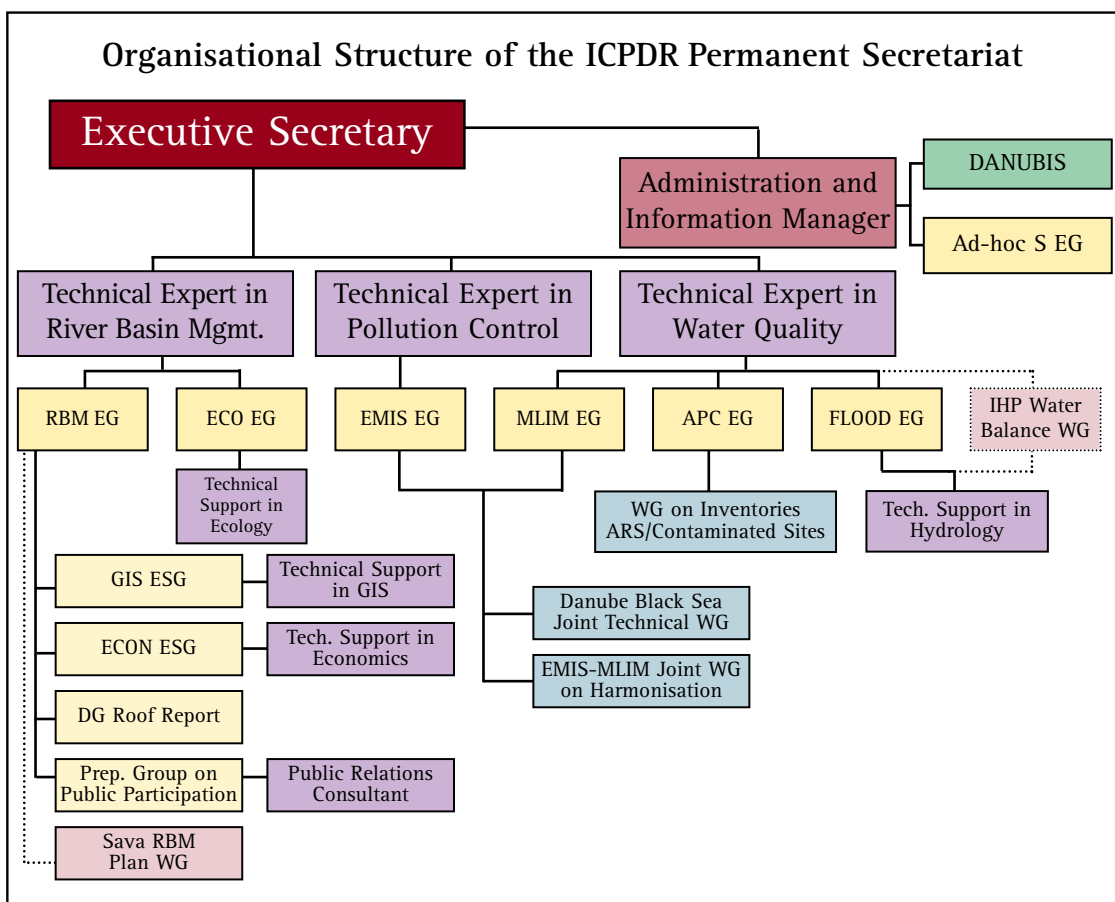
waiting for its entry into force after 90 days of the deposition (March 13, 2003).

In 2002 - the third year of the full operation of the ICPDR Permanent Secretariat - special efforts were made towards the implementation of the EU Water Framework Directive (WFD) in the Danube River Basin, which required the expert body structure to be further developed. The organisational structure of the ICPDR and its Secretariat in 2002 are shown below:





# 1. Operational and Institutional Framework



In 2002, six expert groups dealt with technical issues and one ad-hoc expert group addressed administrative matters arising from the implementation of the DRPC. Specifically:

- Expert Group on River Basin Management (RBM EG) defined and prepared the steps and activities the ICPDR should take in the 2001-2004 period towards the implementation of the WFD in the Danube River Basin; the work of the RBM EG is supported by expert sub-groups, namely:

- Expert Sub-Group on Cartography and Geographical Information System (GIS ESG)

- Expert Sub-Group on Economic Analysis (ECON ESG);

- Expert Group on Ecology (ECO EG) was established to support the ICPDR activities related to the conservation, restoration and sustainable management of aquatic ecosystems and those terrestrial ecosystems and wetlands directly depending on them. This expert group should also contribute to the implementation of the ecological provisions of the WFD;

- Expert Group on Emission (EMIS EG) focused its activities on the reduction of pollution resul-

# 1. Operational and Institutional Framework

ting from emissions into the waters of the Danube and its tributaries. A priority issue concerned harmonisation with the EU water policies, e.g., compliance with the WFD List of Priority Substances;

- Expert Group on Monitoring, Laboratory and Information Management (MLIM EG) was responsible for issues concerning water quality assessment and classification including the operation of the Transnational Monitoring Network, Analytical Quality Control (AQC). Special activities of this Expert Group related to the Joint Danube Survey and the Investigation of the Tisza River have been completed and the final technical reports have been prepared and published;

- Expert Group on Accident Prevention and Control (APC EG) was involved in the operation of the Accident and Emergency Warning System (AEWS) and the communication of alarm/warning messages during accidents. An additional task of this expert group lies in pollution prevention and precautionary control in the whole Danube River Basin. Special working groups under the APC EG deal with the preparation of inventories, specifically an inventory of potential accident risk spots and of old contaminated sites in potentially flooded areas;

- Expert Group on Flood Protection (FLOOD EG) was created in 2002 at the 5th Ordinary Meeting of the ICPDR held in Vienna on November 28-29, 2002. The main task of this expert group is to prepare and implement an action plan for sustainable flood protection in the Danube River Basin.

Specialised working groups deal with the following issues:

- the UNESCO-IHP Water Balance Working Group prepares the water balance of the Danube River;

- the newly created Working Group on the Sava River Basin Management Plan closely cooperates with the RBM EG;

- the work of the EMIS EG and MLIM EG is coordinated by a joint working group to harmonize the implementation of WFD;

- the Danube-Black Sea Joint Technical Working Group coordinates the work of the ICPDR and the International Commission for the Protection of the Black Sea (BSC) aimed at nutrient reduction to ensure recovery of the Black Sea ecosystem.

As a result of the growing activities and especially the work leading to the implementation of the WFD, the number of tasks of the Secretariat considerably increased in 2002. Therefore, the 5th Ordinary Meeting of the ICPDR decided to provide the Secretariat with further technical support and created the following new posts:

- External Technical Support in Ecology dealing with the work of the ECO ESG;

- External Technical Support in Economics dealing with the work of the ECON ESG;

- External Technical Support in Hydrology dealing with the work of the FLOOD EG and water balance.



# 1. Operational and Institutional Framework



## Role of the UNDP/GEF Danube Regional Project

The overall objective of the UNDP/GEF Danube Regional Project is to complement the activities of the ICPDR required to strengthen a regional approach to solving transboundary problems. This includes the development of national policies and legislation, the definition of priority actions for pollution control and nutrient reduction in particular, as well as the achievement of sustainable transboundary ecological conditions within the Danube River Basin and the Black Sea Basin areas.

In particular, the UNDP/GEF Danube Regional Project supports the activities of the ICPDR related

to the development and implementation of policies for pollution reduction in agriculture, industry, land use and wetland management, effective legal and economic instruments, mechanisms for monitoring evaluation and transboundary cooperation. The UNDP/GEF Danube Regional Project also contributes to the development of programmes for public participation, communication and the strengthening of the Danube NGOs.

The UNDP/GEF Danube Regional Project facilitates the implementation of the Danube River Protection Convention and assists those Danube River Basin countries that are in the EU accession process in meeting the requirements of EU water-related directives with special emphasis on the EU Water Framework Directive.

## 2. Financial Contributions and Budgetary Situation

### Regular budget

The 3rd Plenary Session of the ICPDR held in Sofia from November 27-28, 2000, approved the budget for the year 2002 providing an overall total of EUR 799,511.

Since some contracting parties failed to meet their financial obligations for 2002, the annual contributions actually paid by the contracting parties amounted to a total of EUR 765,074, EUR 34,437 short of the projected figure. Consequently, the expenditures had to be reduced by this amount.

In spite of the fact that actual expenditures in 2002 nearly matched their planned figures, a revision of the budget was deemed necessary and was performed on January 10, 2002.

The revised budget was then approved by the President. The final breakdown of regular expenditures per budget line is as follows:

Budget lines	EUR
1. Staff	392,416.-
2. Services	136,793.-
3. Equipment	43,447.-
4. Other	77,374.-
5. Operational costs	72,491.-
Temporarily assigned to the Working Capital Fund	42,552.-
<b>Overall total</b>	<b>765,074.-</b>

Since not all the foreseen expenditures could be effected, the positive balance of EUR 42,552 was temporarily assigned to the Working Capital Fund and will only be used in 2003 for its designated purpose.

### Special funds

All financial contributions to the ICPDR supporting special activities beyond its normal tasks represent special funds and are shown separately in the account of the ICPDR.

#### - Joint Danube Survey (JDS)

In order to improve the comparability of water quality data in the Danube River Basin, a survey

on chemical and biological determinands was conducted. The Austrian and German governments decided to jointly finance these activities with EUR 99,110 and EUR 458,262 respectively. The activities were completed in 2002. Since the Austrian funds were fully utilised the sub-account was closed on December 27, 2002. The German sub-account still shows a positive balance of EUR 34,424. This amount is needed to cover the printing costs of the final technical report.

## 2. Financial Contributions and Budgetary Situation



### - Joint Danube Survey – Investigation of the Tisza River

The ICPDR organised the investigation of the Tisza River as a technical follow-up on the JDS (JDS/ITR). The JDS/ITR was partly financed by the European Commission (EUR 95,000) and partly by in-kind contributions of the participating countries (appx. EUR 56,500).

Partners in the project included VITUKI Plc of Budapest, Hungary (total contractual amount of EUR 54,280), the Hessisches Landesamt für Umwelt und Geologie of Wiesbaden, Germany (EUR 21,720) and the Federal Hydrometeorological Institute of Belgrade, Yugoslavia (EUR 14,000). The ICPDR Secretariat received about EUR 5,000 to cover its costs related to the JDS/ITR activities.

At the end of 2002 the account of the JDS/ITR showed a positive balance of EUR 35,258 - the amount needed to cover the final payments of the partners when their reports are received.

### - Analytical Quality Control (AQC) – 2002

In order to keep the AQC programme running, the 4th Plenary Session of the ICPDR in November 2001 received voluntary contributions to cover the cost of continued activities in 2002. Voluntary contributions were offered by Hungary (EUR 11,000), Slovakia (EUR 2,000), Romania (EUR 2,300), Germany (EUR 4,500) and Austria (EUR 2,200). While the Hungarian, Slovak and Romanian contributions were directly transferred to VITUKI Plc, the German and Austrian contributions were paid through the

ICPDR Secretariat. Since the final report is due in the first quarter of 2003, no disbursement was made for these activities in 2002.

### - Danube – Black Sea Task Force (DABLAS Task Force)

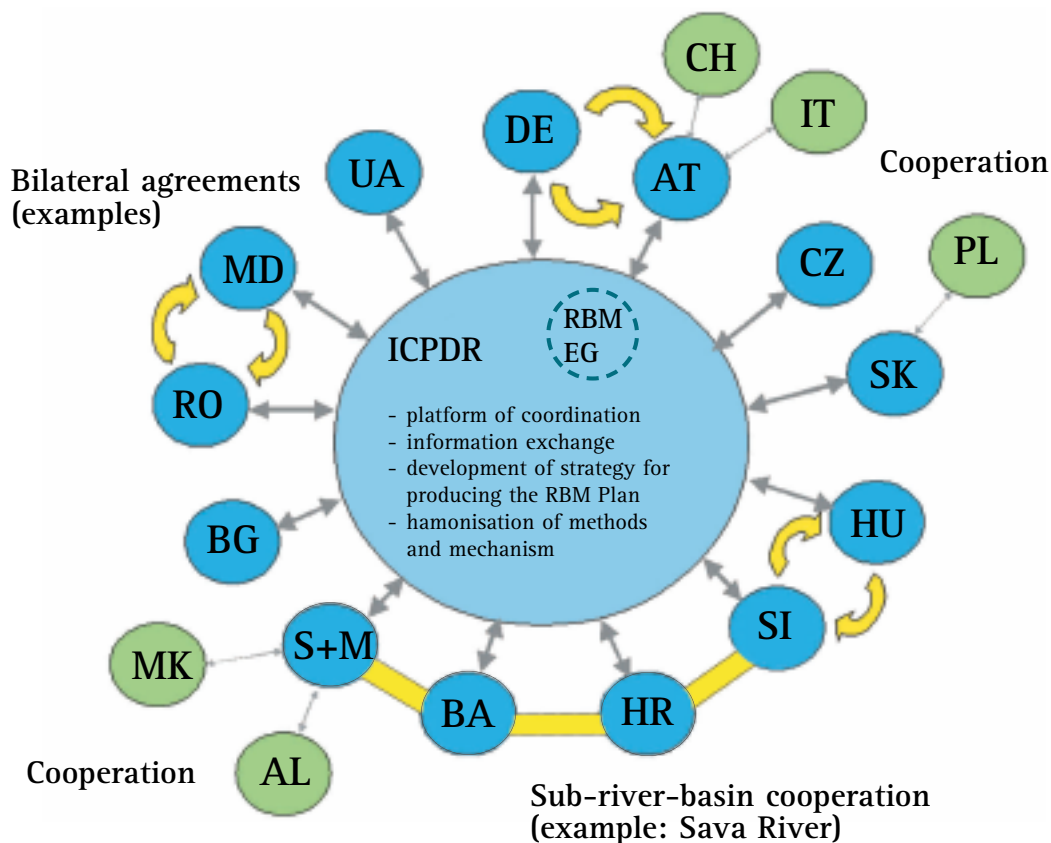
The DG Environment of the European Commission asked the ICPDR Secretariat in 2002 to update the database on municipal investments for wastewater treatment and to create a by-country list - with particular attention to nutrient reduction - that could attract financing, especially from international finance institutions (IFIs). Financial support for these activities was also provided by the EC in the total of EUR 60,939 out of which about EUR 54,100 was awarded to international consultants in the Danube River Basin. The ICPDR Secretariat received about EUR 6,800 to cover its costs related to the DABLAS Task Force activities.

### 3. Implementation of the Water Framework Directive in the Danube River Basin

#### Strategy for the development of a Danube River Basin District Management Plan

One of the greatest challenges faced by the Danube countries lies in the implementation of the EU Water Framework Directive (WFD). All countries co-operating under the Danube River Protection Convention – be they EU member states, accession countries or others – have committed themselves to making all necessary efforts to implement the WFD in their countries. The ICPDR is the co-ordination platform. The River Basin Management Expert Group (RBM EG) has been created to prepare the necessary activities. One of its first tasks has been the

development of a Strategic Paper for the Development of the Danube River Basin District Management Plan (Danube RBM Plan). The paper deals with defining the institutional frame and the co-ordination mechanisms on the national, bi-/multilateral and the Danube River Basin level. In addition, it describes the approach for the development of the Danube RBM Plan and the reporting mechanism to the European Commission. The Danube RBM Plan will consist of 1) the roof report dealing with all issues of basin-wide importance and 2) the national reports dealing with all national issues and those that have been co-ordinated bilaterally. In a later stage sub-basin plans are foreseen.

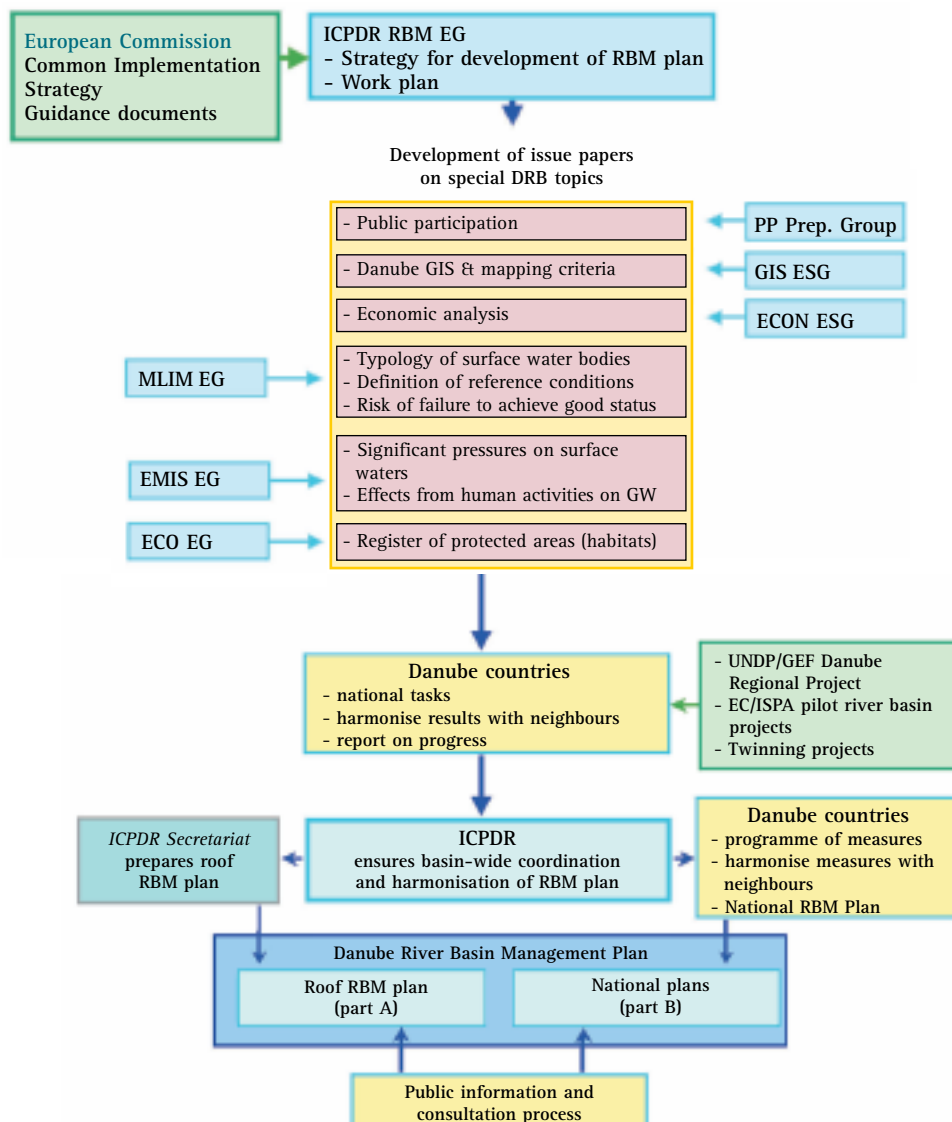


### 3. Implementation of the Water Framework Directive in the Danube River Basin



The RBM EG has started developing a technical outline for the roof report of the Danube RBM plan for 2003 and for 2004. The roof report 2003 deals with the identification of competent authorities and with the established international relationships for WFD implementation. The roof report 2004 will deal with the characterisation of the

river basin in terms of its typology and reference conditions, its significant pressures and impacts as well as with the economic analysis of water uses. Newly created or existing ICPDR expert groups are preparing the necessary steps for its implementation. The following pages show the technical preparations carried out in 2002.





### 3. Implementation of the Water Framework Directive in the Danube River Basin

#### Development of a Danube GIS

The Expert Sub-group on Cartography and GIS (GIS ESG) was created to establish a GIS for the Danube River Basin and to produce the necessary overview maps for the implementation of the WFD. The first step was to get an overview of existing data and data exchange formats. This task was carried out with the help of questionnaires. The next step was to decide on the digital data base. The GIS ESG suggests using EuroGlobalMap (EGM) developed by EuroGeographics as the basic topographic map for the Danube River Basin. It will allow map scales ranging from 1:500.000 to 1:4 million. An issue paper is under preparation on the development of a Danube GIS. The first elements of the paper deal with the needs for a Danube GIS, the steps for building and maintaining a Danube GIS and the flow of data between national GI systems, the Danube GIS and GISCO, the GIS of the European Commission. A detailed needs assessment is currently being prepared for setting up a Danube GIS.

#### Characterisation and analysis of surface water and groundwater bodies

Two workshops were organised for the exchange of information on testing the German LAWA Guidebook on WFD implementation (tasks until 2004):

- 1<sup>st</sup> Groundwater Workshop (Budapest, February 4-5, 2002)
- 1<sup>st</sup> Surface Water Workshop (Bucharest, February 21-22, 2002).

The workshops gave a good overview on the status of implementation in the Danube countries.

Participation in the workshops was high and most DRB countries were represented. It showed that the Guidebook is widely used and that it is a useful tool for the implementation of the WFD. Follow-up workshops were suggested and are being prepared in cooperation with the UNDP/GEF Danube Regional Project.

#### Species and habitat protection areas

The ECO EG is setting up an inventory of protected areas in which the maintenance or improvement of the status of water is an important factor in the protection of habitats and species. For EU member states these are the protected areas designated under EC regulations (Natura 2000). Countries that are not members of the EU will select protected areas under national protection regulations. Sites of international relevance (e.g. Ramsar sites, national parks, IBAs, World Heritage sites) are given priority in the inventory. The inventory is being elaborated on the basis of materials and information from the contracting parties. 10 out of 13 countries reported their protected areas for species and habitat protection by the end of 2002. So far, 605 areas have been nominated to the ICPDR.

The data will be in line with the standard data format for Natura 2000 sites, but in a first step they will be limited to the following core data set:

- 1) site name, size, location of the protected areas (geographic co-ordinates);
- 2) river basin (sub-unit as defined by countries), and altitude
- 3) IUCN classification and type of protected areas

### 3. Implementation of the Water Framework Directive in the Danube River Basin



- 4) Reference to protection legislation, date of designation;
- 5) key habitat types (according to the Annex of the Habitats' Directive or Emerald Network) and the IBA criteria of the site;
- 6) reference to database, web site and further sources of information.

#### **Economic analysis of water uses**

The RBM EG created a Drafting Group for economic issues related to the WFD. The Drafting Group developed an issue paper on the way to carry out the economic analysis of water uses as required by Article 5. The first step is to define the needed economic indicators and variables. The next step will be to check data availability in the countries. Once this overview has been achieved, a proposal will be developed on how to carry

out the economic analysis to fulfil the requirements of the Directive by the end of 2004. In view of the level of effort and time required to perform the necessary steps for implementing the economic analysis in the DRB, the ICPDR at the end of 2002 established the Expert Sub-group on Economic Analysis.

#### **Starting the public participation process**

The process of public information and consultation needs to be started at an early stage. In the frame of the work of the RBM EG, WWF and GWP developed an issue paper on the way to deal with public participation in the Danube River Basin. The next step will be to develop a strategy for conducting the public participation process. The strategy will be based on the respective EU guidance document. It will be important to clarify which issue needs to be dealt with at which level.



## 4. Water Quality and Hydrological Situation in the Danube River Basin

### Hydrological situation

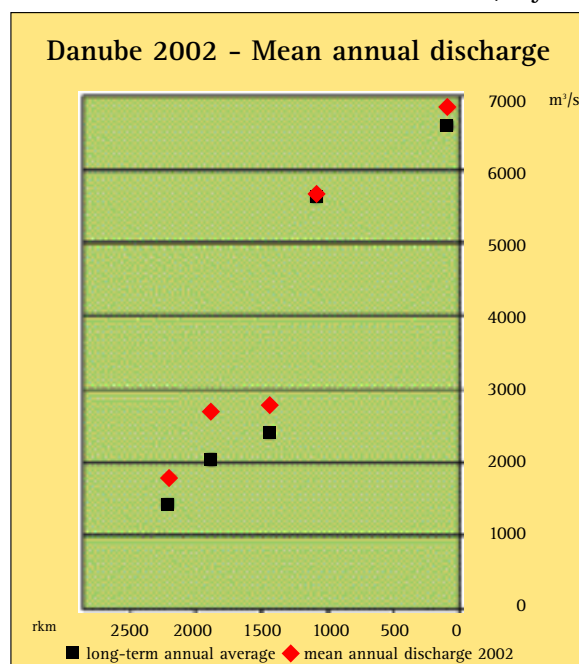
The long-term daily mean flow of the Danube River is about 6500 m<sup>3</sup>s<sup>-1</sup>, which represents an average annual discharge of 207 km<sup>3</sup>. The discharge in 2002 was 215.7 km<sup>3</sup> (104% of the average annual discharge).

The weather conditions and the hydrological situation in 2002 varied dramatically. There were big seasonal variations in precipitation and the related discharge in the whole basin. The values of the total precipitation in 2002 as well as the relative precipitation in the same year when compared to a long-term annual average in selected countries are shown in the following table:

Country	Total annual precipitation in 2002 [mm]	Relative annual precipitation in 2002 [%]
Germany	1329	113
Austria	1115	109
Czech Rep.	765	107
Slovakia	841	110
Hungary	567	93
Slovenia	1307	93
Croatia	685	105
Romania	636	98

In general, in the upper Danube Basin the weather was warmer with more precipitation than usual. While January and April were remarkably drier than average, the rainfall in August, October and November by much exceeded the long-term values. The extreme precipitation in August 2002 led to a disastrous flood on the upper Danube and on some tributaries (Inn, Regen, Thaya/Dyje). These flood events caused substantial damage in many areas in Austria, Germany and the Czech Republic. The maximum discharge of the Danube between Melk and Vienna was estimated at HQ100. In the Czech Republic, the lower part of the Dyje Basin was seriously impacted (100–200-years flood). Slovakia and Hungary were less affected by this flood due to a partial reduction of the flood wave and extensive flood protection measures. In Croatia, only minor flooding was reported in inundation areas. In the lower Danube Basin, the most significant precipitation leading to destructive floods with negative socio-economic impacts at a local level was recorded between

July 20 and August 20. The torrential character of these rainfalls caused large amounts of precipitation concentrated in 24 hours, which in certain areas exceeded the value of 100 mm/day.



## 4. Water Quality and Hydrological Situation in the Danube River Basin



### Pollution due to accidents

There was no serious accident-related pollution that might have seriously impacted water quality in 2002. In Germany, the impact caused by the infiltration of hexachlorobutadiene (HCBD) into the Inn River (information provided in Annual Report 2001) was diminishing and the rehabilitation activities continued. In the Czech Republic and Slovakia, a few minor accidents were reported, but no measurable impact on the water quality was observed. No deterioration of water quality was reported in the Danube and March/Morava as a result of August floods.

At the end of September, the elevated flow in the Iskar River downstream of Sofia lifted the bottom sediments. This resulted in a deficit of oxygen and led to fish kills.

Accidents that triggered the Danube Accident Emergency Warning System are reported in Chapter 7.

### Improvements in wastewater treatment

The trend pursued by most Danube countries is to intensify nutrient reduction in wastewater treatment plants (WWTPs). Such a development was reported by Germany, where nitrogen reduction was further improved at several WWTPs. In Austria, the share of the population connected to the central WWTP in line with the national regulations was further increased to 86%. Despite the fact that this level was for a long time considered to be at the margin of economic feasibility, new developments in the construction of wastewater collection facilities have allowed construction costs to be further decreased. However, this factor

has only a limited influence and thus only a slight increase of the percentage of connected population will be possible in Austria in future.

At the beginning of 2002, 1,432 WWTP with more than 50 population equivalents (PE) including 612 treatment plants with more than 2,000 PE were in operation in Austria. Approximately 90% of these wastewater treatment plants utilise tertiary treatment. This set-up enables a reduction of the pollution load produced by population by 95% for BOD, 91% for COD, 69% for N and 83% for P.

In the Czech part of the Danube River Basin, further efforts were made to reduce the nutrient discharge from the most important WWTPs. At the end of 2002, the reconstruction of four out of 12 WWTPs included in the Joint Action Programme for the Danube River Basin was completed.

In Slovakia, nitrogen reduction was performed at three WWTPs in the Bratislava region: Bratislava-Petržalka, Vrakuňa and Devínska Nová Ves. Similarly, technical improvements aimed at N-reduction were performed at several small WWTPs in Slovenia. Regarding plants in Slovenia with more than 100 000 PE, only three have yet to comply with the EU-directives on nitrogen treatment.

In Romania, a total of 1,445 WWTPs were in operation in 2002, out of which about 45% reported satisfactory performance. An additional 15 WWTPs are under construction.

## 4. Water Quality and Hydrological Situation in the Danube River Basin

### Water quality trends

In Germany, the specific weather conditions in 2002 (high precipitation, increased average temperature) resulted in an elevated water temperature and a decrease in dissolved oxygen concentrations. However, the concentrations of nutrients and indicators of degradable organic substances showed a slight decrease compared to previous years. This tendency is characteristic for the long-term trend in Germany. In Austria, the frac-

tion of river stretches with very good/good biological water quality increased from 81% in 1998 to 87% in 2002.

Slovenia reported a noticeable improvement of the saprobic situation on the Sava River at Jesenice. Gradual improvements in water quality were also reported by Romania. No significant changes of the surface water quality in comparison with the previous year were observed in Slovakia, Hungary, Croatia or Bulgaria.

## 5. Pollution Control Strategy in Line with the WFD



### Update of municipal and industrial emission inventories 2002

An updated basin-wide Emission Inventory of pollutants released to the water from municipal and industrial dischargers, for reference year 2000, was made publicly accessible in 2002. The next update of municipal discharges inventory expected in 2003 is intended to cover more than 75% of the emissions discharged into the River, which practically means that all settlements having more than 10,000 inhabitants will be included.

This new update will respond to the need to analyse pressures (stated in Article 5 of the WFD), which requires information on the type and scale of significant anthropogenic pressures, including point and diffuse sources of pollution. In addition there is a requirement to consider land use patterns (e.g. urban, industrial, agricultural, forest), as these may be useful in indicating areas in which specific pressures are located. Generally, point source discharges are subject to control by the local environmental or water authorities. EU Member States are currently designating additional sensitive areas under the Urban Waste Water Treatment Directive

that requires additional measures to reduce phosphorus and nitrate pollution from certain sewage treatment works, while other Danube countries are implementing specific regulation to control point sources.

Recent trends in industrial discharges inventories have made it necessary to consider IPPC approach, the use of best available techniques (BAT), the integration of cleaner production and environmental management standards, and the incorporation of priority list of substances. The most important feature of the IPPC approach is that the emission standards are based on the best currently available techniques.

The new emission strategy will provide policies for all its uses: domestic, agricultural and industrial. A better emission policy benefits both the governments and the industry, i.e.:

- m it helps governments to identify priorities for action aimed at reducing values for industrial and municipal discharges and to encourage cost-effective actions to limit emissions over time;
- m it encourages industry to take proactive measures to reduce releases.

### Emission reduction in municipal wastewater treatment plants

In the frame of the EU DABLAS project, selected Danube countries have indicated a total of 45 municipal investments projects (wastewater treatment plants) with a total investment cost of EURO 622.6 Mio. The total reduction of BOD, COD, total nitrogen and total phosphorus in tons per year is presented in the table below.

	Czech Republic	Hungary	Slovakia	Slovenia	Sum
Total Projects	14	9	7	15	45
Total Investments (Mio. EUR)	156.0	142.3	41.6	282.7	622.6+
Reduction BOD (t/a)	170	9,231	1,143	25,265	35,809
Reduction COD (t/a)	106	20,126	1,650	42,461	64,343
Reduction Tot-N (t/a)	856	1,802	295	40,293	7,246
Reduction Tot-P (t/a)	47	442	61	709	1,259

## 5. Pollution Control Strategy in Line with the WFD

### **Agricultural point sources inventory**

Diffuse pollutants include nutrients resulting from the over-application of fertilisers, silt from soil erosion and pesticides from the handling and application of the chemicals, effluent from sewage treatment works and industrial units. A better integration with agriculture will enable action to be taken to reduce diffuse pollution, which remains a serious problem, preventing toxic algal blooms from excess manure and fertilisers.

Steps initiated in 2002 by Expert Group on Emission (EMIS EG) to improve the control of pollution from agriculture and improve water quality in the Danube include:

- assessment of diffuse water pollution from agriculture in the Danube River Basin, examining the available evidence from previous projects, studies and demonstration projects. The assessment aimed to identify cost-effective policy measures to control diffuse water pollution from agriculture, reducing it to levels that meet the existing standards and encourage sustainable farm practices;
- drafting of Recommendations on Best Available Techniques at Agricultural Point Sources, including in-plant measures for the reduction of wastewater volume and abatement of pollution load;

- production of an outline for a first agricultural point sources inventory. The inventory (reference year 2002) will be available in 2003.

### **Agreement on priority substances in the Danube River Basin**

The ICPDR List of Priority Substances includes substances that raise health or environmental concerns. A proposal on quality standards for the Danube Specific Priority Substances and defining criteria for evaluation of General Parameters are being developed. The Emission Inventory of Industrial Discharges for the year 2003 will also include these substances.

### **Use of MONERIS in addressing pressures from pollution**

The Institute of Freshwater Ecology and Inland Fisheries assumed the task to compile a harmonised inventory for point and diffuse sources of pollution, which will be finalised in May 2003. MONERIS (MOdelling Nutrient Emissions in RIver Systems) model was developed and applied in the Danube River Basin to estimate nutrient emissions into surface waters from point and various diffuse sources. The total nutrient input into the Danube River Basin amounts to 61,300 tP/a and 639,400 tN/a.

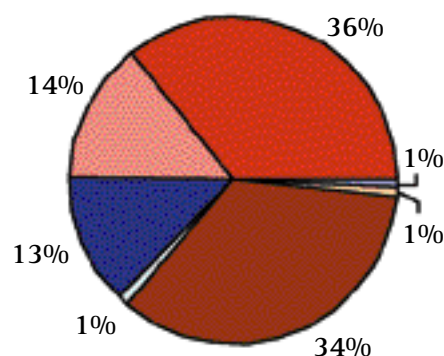


## 5. Pollution Control Strategy in Line with the WFD

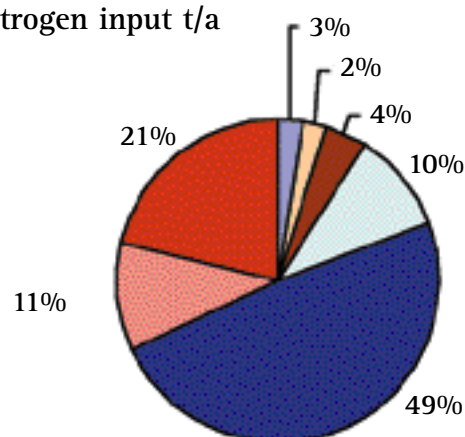


The graphs show the total nutrient input into the Danube by their input pathways:

Phosphorus input t/a



Nitrogen input t/a



While point emissions from wastewater treatment plants and industrial sources are discharged directly into the rivers, diffuse emissions into the surface waters reflect the sum of different pathways. Seven pathways are considered: point sources, atmospheric deposition, erosion, surface runoff, groundwater, tile drainage and urban surface water runoff.

### Initial results of nutrient management in the Danube Basin and its impact on the Black Sea Project (daNUbs)

The general objectives of daNUbs project include:

- to improve the knowledge about sources, pathways, stocks, losses and sinks of nutrients in a large river catchment;
- to improve the knowledge about the effects of nutrients (nitrogen, phosphorus and silica) on the receiving ecosystems with special emphasis on the coastal areas;
- to develop, improve and combine management tools for nutrients in the Danube Basin, and
- to develop scenarios and prognoses for nutrient

management and its effect on water quality and their consequences on the socio-economic development in the Danube countries.

The initial results include estimates of nutrient input into the river network, as well as an assessment of the loads transported via the network (N; P; Si). The GIS-based emission model (MONE-RIS) for calculating nutrient emissions, the Danube Water Model for calculating the transformation and transport of nutrients in the river and the Danube Delta Model for calculating the nutrient transport through the Danube Delta are currently being combined to obtain more reliable results, which will be available in 2005.

## 6. Operation of the Danube Accident and Emergency Warning System

In 2002 the Accident and Emergency Warning System (AEWS) transmitted information on eight accidents out of which three were caused by oil

spills. Brief information on these accident-caused pollution events in the Danube River Basin in 2002 is given below.

Site of Accident / Date	Affected River	Primary Pollutant	International Satellite Messages	Tranboundary Impact
Austria (and Slovakia)  08.01.2002	Morava (rkm 61) (Austrian bank)	Oil	PIAC - 04 e PIAC - 02 "Info?" PIAC - 02 e PIAC - 04 "Confirmation"	AT: Yes SK: No
Slovakia (and Hungary)  03.04.2002	Mosoni-Danube (at Rajka, lock No.VI:)	Oil	PIAC - 05 e PIAC - 04 "Info?" PIAC - 04 e PIAC - 05 "End-of-Alert"	SK: Yes HU: No
Romania  03.06.2002	Aries River	Mining sterile	PIAC - 05 e PIAC - 08 "Info?" PIAC - 08 e PIAC - 05 "End-of-Alert"	RO: No
Romania (Barzava)  06.06.2002	Danube	Ammonia	PIAC - 08 e PIAC- Belgrade "Information" (By mail)	RO: Yes Serbia: No
Serbia (Kostal power plant)  13.06.2002	Danube	Ashes	PIAC FROM BELGRAD e ICPDR SECRETARIAT e PIAC 08 notification	Serbia: Yes RO: No
Romania  31.06.2002	Prahova and Ialomita Buzau river (tributary of Danube river)	Oil	PIAC 08 e PIAC 12 Izmail (also by fax): "Information"	RO: No
Hungary (Mohács)  11.09.2002	Danube (rkm 1447)	Soya flour	PIAC - 05 sent fax info to Hidrometeorological Institute in Belgrade	HU: Yes
Hungary  12.11.2002	Public media reported signifi- cant water pollu- tion in Romania on River Somes	Cyanide	PIAC - 05 e PIAC - 08 "Info?" PIAC - 08 e PIAC - 05 "End-of-Alert" by fax	RO: No (conc. below threshold level)

Note: A "Yes" in the "Transboundary impact" column means that accident-caused water pollution entered the neighbouring downstream country.



## 6. Operation of the Danube Accident and Emergency Warning System



### Upgrade of AEWS

To improve the operation of the warning system, final standard forms for the AEWS have been developed and adopted by the Expert Group on Accident Prevention and Control (APC EG), which took into consideration the "emission approach" (Alert Thresholds for Extraordinary Water Pollution in the Framework of the International Danube Accident Emergency Warning System). A concept of an upgrade of the communication between PIACs has been designed within the UNDP/GEF Danube Regional

Project. Under the concept, satellite-based communication will be replaced by internet communication. This application will improve the functionality of the current Information Processing System used by PIACs. It will reside on the web server of the ICPDR Information System and will be accessible via a standard web browser from any internet-based computer. Thus, satellite communication will be replaced by web-based information exchange and SMS for notification of an alarm message. This approach will significantly cut the cost of AEWS operation without undermining its efficiency.

## 7. Flood Protection in the Danube River Basin

The DRPC emphasises the need for transboundary-level cooperation in forecasting and monitoring flood events if their impacts are to be minimised. In response to this, the Danube countries have decided to establish joint emergency plans.

The ICPDR has included flood prevention into its five-year Joint Action Programme 2001-2005. Primary importance is given to the elaboration of a flood prevention programme adjusted to the specific local situation in the various parts of the Danube River Basin with particular attention to tributaries and sub-river-basins. According to the Joint Action Programme, the results should be available by the year 2005.

Disastrous floods in the upper part of the Danube River Basin in August 2002 highlighted the need for concerted, harmonised basin-wide actions to strengthen the future efforts in coping with flood hazards. At the German Flood Conference held in Berlin on September 15, 2002, the German Federal Government presented its Five-Point Programme to improve flood defence.

Immediately following the German Flood Conference, the ICPDR held its Expert Meeting on Flood Protection. Topping the agenda of this 2nd ICPDR Expert Meeting on Flood Protection (held in Vienna on October 17, 2002) was the urgent need for an integrated flood prevention in the Danube River Basin. Participants at the meeting proposed that the Action Programme for Sustainable Flood Prevention in the Danube River should be worked out on two levels: for the Basin as a whole and for the sub-basins.

The participating experts designed the tasks for both levels of the Action Programme and recom-

mended that it should be finalised by the end of 2004.

Following the proposals of the Danube flood experts, the ICPDR at its 5th Ordinary Meeting on November 28-29, 2002, decided to establish an Expert Group on Flood Protection responsible for elaborating by October 2004 an Action Programme for Sustainable Flood Protection in the Danube River Basin. The Action Programme should take into account the initiative of the European Water Directors concerning flood management. The ICPDR also welcomed an offer from the European Commission for access to the LISFLOOD programme aimed at developing a European Flood Alert System for major European catchments.

Besides its own actions taken against the flood hazards the ICPDR proactively participated in the preparatory activities of the Budapest Initiative on Sustainable Flood Management. At the meeting held in Budapest on December 1, 2002, the prime ministers of Hungary, Poland, the Czech Republic, Slovakia, Germany, Austria, Romania and the European Commission adopted the Declaration of the Budapest Initiative as a joint statement calling for the strengthening of international cooperation in flood management. At this meeting, the ICPDR president informed the participants about the current flood policy of the ICPDR and supported the Initiative.

The Declaration clearly recognises the role of river basin commissions in the preparation of action plans and creates a sound basis for concerted flood management in future.

## 8. Implementation of the JAP - Investment Projects

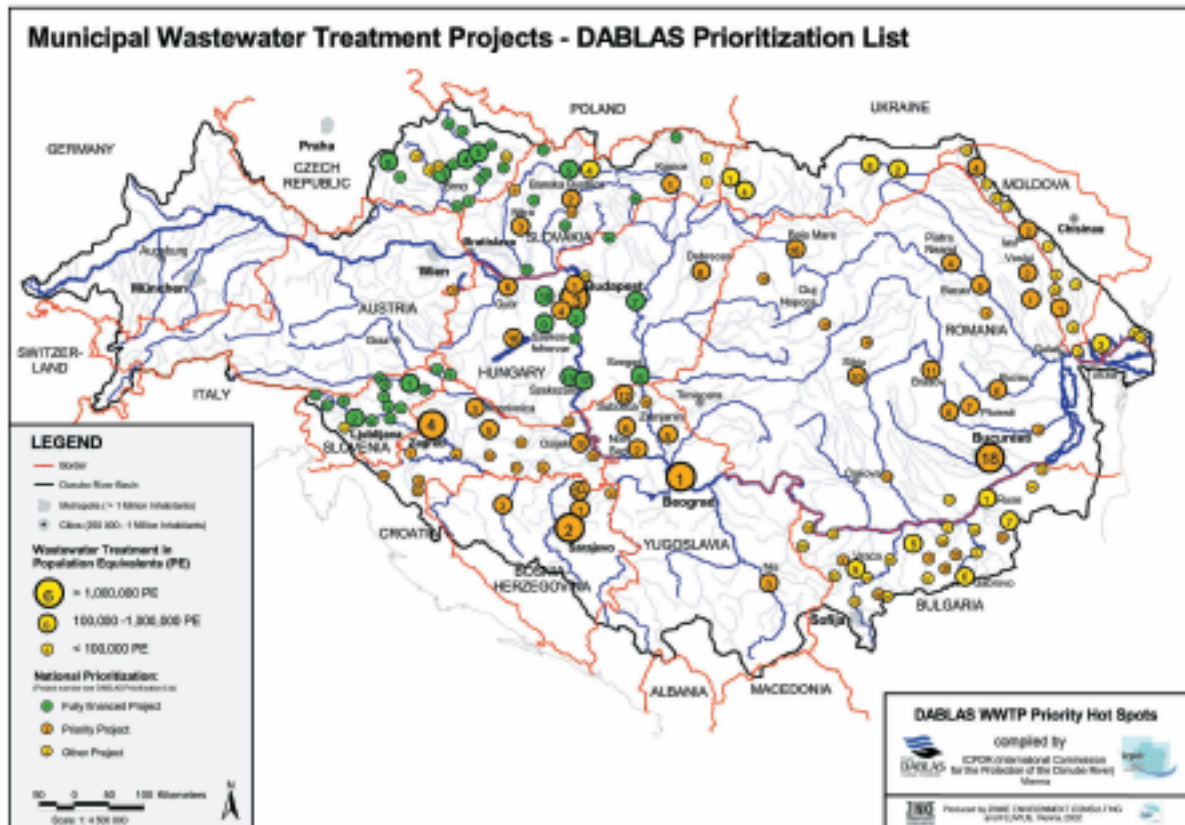


### Results of the EU DABLAS initiative on the prioritisation of water sector investment projects in the Danube River Basin

Participants at the ministerial conference in Brussels on November 26, 2001, signed a joint declaration on the "Protection of Water and Water-related Ecosystems in the Wider Black Sea Region". In order to ensure the implementation of the Declaration, the DABLAS Task Force was formed to serve as a platform for co-operation and to develop financing mechanisms for the implementation of investment projects for pollution

reduction and the rehabilitation of ecosystems in the wider Black Sea region. The European Commission, DG Environment provided financial support to the Danube and the Black Sea secretariats enabling them to develop an "Operational Framework for the Prioritisation of Projects".

A Working Group on Prioritisation was created and charged with selecting priority projects on the regional level. The Working Group consisted of representatives from Hungary, Romania, Bulgaria (vice chair), the Czech Republic (vice chair), from the secretariats of the ICPDR and the Black Sea



Among the 158 projects, 45 are fully funded with a total of EUR 622m. The total investment required for the remaining 113 projects is EUR 2,567m, out of which EUR 2,121m are expected to be raised from international finance institutions (IFIs), other international organisations and bilateral donors.

## 8. Implementation of the JAP – Investment Projects

Commission, representatives from the European Investment Bank, the European Bank for Rural Development, the Council of Europe Development Bank, Project Preparation Committee (PPC, vice chair) and consultants preparing the project fiches.

### Update of municipal investment projects addressing nutrient reduction goals

The ICPDR and the Black Sea Commission were asked to collect and update information on

Category	Default value (%)
I Environmental impact	30
II Black Sea impact	20
III Finance ability	30
IV Technology efficiency	10
V Compliance	10

investment projects and to create a priority list of projects for municipal wastewater treatment -

Prioritisation ranking was made for 113 projects. Of the evaluated 113 projects, only 20 were found to be reasonably well prepared and have secured partial financing. An arbitrary division was made for the 20 top-scoring projects, so that a short list of projects could be developed.

Total Scores for Projects				I. Environmental Impact			II. Black Sea Impact		
#	Project ID	Location	Score	Project ID	Location	Score	Project ID	Location	Score
1	YU-M-01	Belgrade	88	YU-M-03	Nis	100	YU-M-03	Nis	100
2	YU-M-02	Novi Sad	82	BG-M-11	Lovech	91	YU-M-01	Belgrade	100
3	YU-M-03	Nis	80	BG-M-04	Montana	91	YU-M-02	Novi Sad	100
4	YU-M-06	VRBAS	75	BG-M-01	Russe	90	BA-M-02	Butile, Sarajevo	100
5	RO-M-11	Brasov	74	YU-M-01	Belgrade	89	BA-M-04	Bijeljina	100
6	RO-M-15	Zalau	72	YU-M-02	Novi Sad	89	RO-M-07	Ploiesti	100
7	BG-M-12	Sevlievo	71	BG-M-12	Sevlievo	88	UA-M-01	City of Uzhgorod	100
8	RO-M-18	Bucuresti (Glina)	71	BG-M-13	Popovo	88	BG-M-05	Pleven	100
9	MD-M-01	town Cahul	70	BG-M-08	Troian	88	BA-M-03	Banja Luka	100
10	RO-M-03	Onesti	69	BG-M-21	Mezdra	88	BA-M-01	Tuzla	100
11	UA-M-01	City of Uzhgorod	69	BA-M-02	Butile, Sarajevo	87	RO-M-11	Brasov	100
12	BA-M-02	Butile, Sarajevo	68	YU-M-15	Senta	84	HU-M-16	Vészprém	100
13	RO-M-08	Targoviste	68	RO-M-18	Bucuresti (Glina)	82	HR-M-04	Zagreb	100
14	BG-M-11	Lovech	68	BG-M-20	Botevgrad	81	HU-M-01	Budapest North	100
15	YU-M-05	Zrenjanin	68	BG-M-02	Svishtov	81	BG-M-01	Russe	83
16	BG-M-13	Popovo	68	BG-M-18	Pavlikeni	81	BG-M-08	Troian	83
17	HU-M-04	Budapest South Buda	67	BG-M-15	Cherven briag	81	RO-M-18	Bucuresti (Glina)	83
18	MD-M-05	town Falest	67	BG-M-10	Silistra	81	HU-M-03	Budapest Central	83
19	SK-M-09	Trencín, right side	66	BG-M-07	Razgrad	79	RO-M-15	Zalau	83
20	UA-M-02	Chernivtsi	66	BG-M-23	Biala	79	YU-M-12	Subotica	83



## 8. Implementation of the JAP - Investment Projects



with particular attention to nutrient reduction – that could attract international financing.

Therefore, the ICPDR project team, supported by the work of consultants, revised the list of national projects of the Joint Action Programme and developed a total of 158 fact sheet for the 11 Danube River Basin countries. The projects differ in size from more than 1,000,000 PE (Belgrade, Bucharest, Budapest, Sarajevo, Zagreb) to approximately. 10,000 PE.

**Prioritisation criteria were developed and grouped into five categories.**

The weighting factors were considered as default values to allow flexibility in the evaluation. As more reliable finance-ability information is obtained in the future, the default values can be easily changed in the database. Project data and ranking criteria have been programmed into the database.

It is expected that a joint list of the Danube and the Black Sea projects will be presented to the IFIs and the donor community in 2003 in the frame of a PPC/DABLAS meeting to attract additional financial support for the implementation of investment projects in the Danube-Black Sea region.

The DABLAS database for investment projects in the Danube River Basin countries is accessible under [www.icpdr.org](http://www.icpdr.org).

III. Financibility			IV. Technology Efficiency			V. Compliance		
Project ID	Location	Score	Project ID	Location	Score	Project ID	Location	Score
RO-M-04	Piatra Neamt	100	BA-M-02	Butile, Sarajevo	100	BA-M-02	Butile, Sarajevo	100
RO-M-06	Buzau	100	BA-M-03	Banja Luka	100	BA-M-01	Tuzla	100
MD-M-05	town Falest	100	BA-M-04	Bijeljina	100	BA-M-03	Banja Luka	100
MD-M-01	town Cahul	100	BA-M-05	Brdsko District	100	MD-M-01	town Cahul	70
YU-M-01	Belgrade	94	BA-M-06	Brdsko District	100	RO-M-08	Targoviste	70
RO-M-08	Targoviste	94	BG-M-01	Russe	100	SK-M-09	Trencin, right side	70
MD-M-11	town Costesti	94	BG-M-02	Svishtov	100	RO-M-03	Onesti	70
MD-M-08	town Glodeni	94	BG-M-05	Pleven	100	RO-M-11	Brasov	70
MD-M-07	town Nisporeni	94	BG-M-08	Troian	100	YU-M-02	Novi Sad	70
YU-M-06	VRBAS	87	BG-M-11	Lovech	100	SK-M-13	Zvolen	70
MD-M-09	town Leova	87	BG-M-12	Sevlievo	100	BG-M-12	Sevlievo	70
MD-M-04	town Edinet	87	BG-M-14	Dulovo	100	BG-M-13	Popovo	70
HU-M-04	Budapest South Buda	81	BG-M-16	Vidin	100	SK-M-03	Nitra	70
MD-M-12	town Cantemir	80	BG-M-17	Lom	100	YU-M-03	Nis	70
MD-M-10	town Briceni	80	BG-M-20	Botevgrad	100	HU-M-12	Sopron	70
MD-M-02	town Ungheni	79	HR-M-04	Zagreb	100	BG-M-20	Botevgrad	70
UA-M-02	Chernivtsi	75	HR-M-11	Grad Daruvar	100	SI-M-08	Vrhnika	70
SK-M-09	Trencin, right side	75	HU-M-01	Budapest North	100	HR-M-04	Zagreb	70
RO-M-03	Onesti	75	HU-M-06	Gyor	100	HR-M-20	Plitvicka Jezera	70
RO-M-13	Turda	75	HU-M-16	Veszprém	100	UA-M-06	Vilkovo WWTP	70

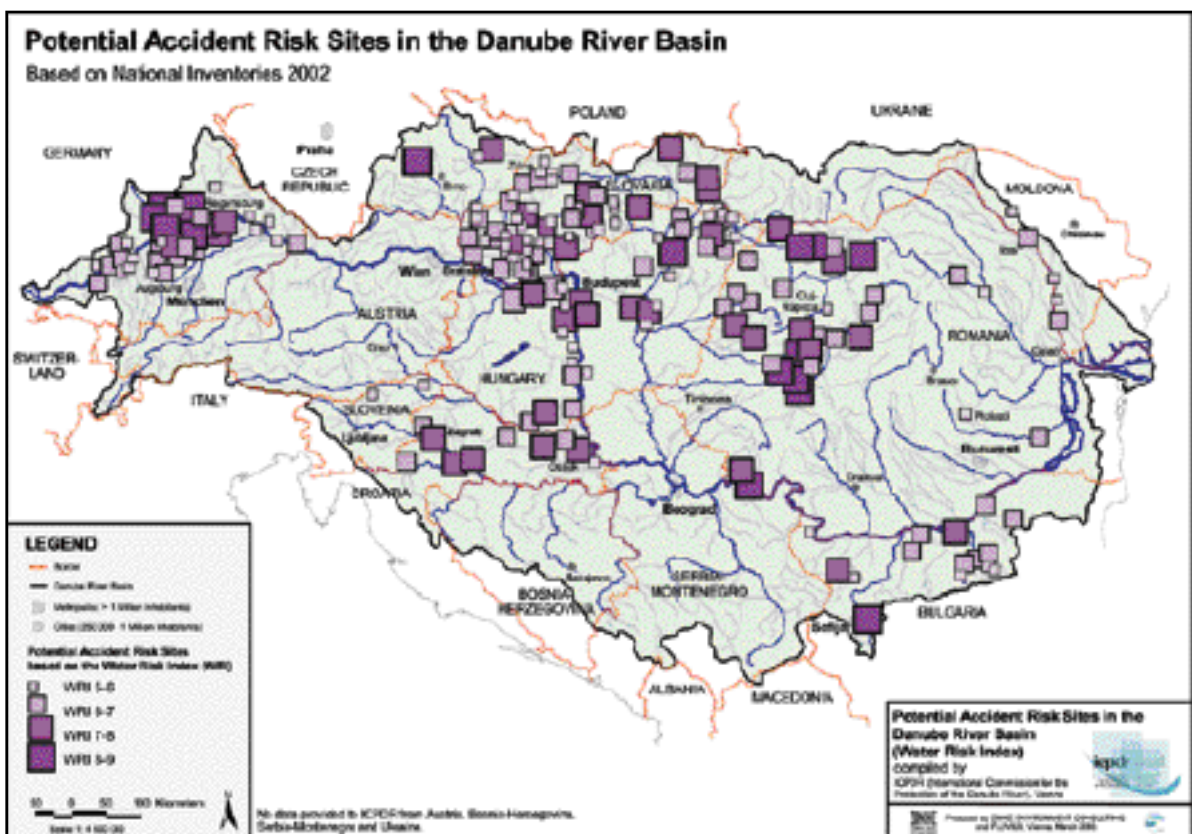
## 9. Concerted Actions Aimed at Accident Prevention in the Danube River Basin

### Inventory of accident risk spots in the Danube River Basin

In response to the disastrous accidents on the Tisza River in January and March 2000, experts of the Accident Prevention and Control Expert Group in 2001 elaborated a basin-wide inventory of potential accident risk spots. This inventory is the first international review of potentially dangerous installations in the Danube region. The assessment of potential risk was made using a combination of a quantity of a hazardous substance with its water-endangering ability. The Accidental Risk Sites Inventory reflects the status as of June 30, 2001. Altogether 611 potential accident risk spots in nine countries were reported

and ranked. The map illustrates the most significant sites.

However, it must be pointed out that the Accidental Risk Sites survey could only hint at the potential hazards. The actual risks arising from the hazardous sites depend on the safety measures that are effectively applied in each installation. In order to estimate the safety level that has been attained, special checklists have been developed and distributed to national authorities. At present, a methodology is being created that would enable these checklists to be used in a harmonised way in the whole Danube River Basin.



## 9. Concerted Actions Aimed at Accident Prevention in the Danube River Basin



### Inventory of old contaminated sites in potentially flooded areas in the Danube River Basin

The floods of August 2002 highlighted the problem of inundation of landfills, dump sites and storage facilities where harmful substances are deposited. Potential transfer of toxic substances into the water poses a clear threat to the environment. Such potential threats were recognised by the ICPDR and the preparation of an inventory of old contaminated sites in potentially flooded areas in the Danube River Basin, in accordance with the Resolution of the 7th ICPDR Steering Group Meeting, started in autumn 2002. The finalisation of the basin-wide inventory is expected in summer 2003.

### Handling of water-endangering substances

In order to strengthen the safety of surface and ground water bodies and to minimise the risks posed by occasional spills from industrial facilities, the ICPDR agreed a set of basic requirements for installations dealing with water-endangering substances and recommended that all Danube countries should apply them. The acceptance of this document represents an important contribution to the harmonisation of accident-caused pollution prevention policy pursued by the different international river commissions as the International Commission for the Protection of the Elbe River (IKSE/MKOL) adopted the same basic requirements.

#### Basic requirements for installations handling water endangering substances

- Facilities shall be designed and operated in such a way as to prevent the escape of any substances hazardous to water. They shall be leak proof, stable and sufficiently resistant to the mechanical, thermal and chemical influences to be expected. Single-walled underground containers shall not be permitted. The third sentence of this paragraph shall not apply to solids.
- Leaks from any part of a facility, which has contact with any substances hazardous to water, must be recognisable in a quick and reliable way.
- Any leaking substances hazardous to water must be recognised, retained and recycled or disposed of properly and without causing any dama-

ge. As a rule, the facilities shall be equipped with a leak proof and stable retention room as far as they are not double-walled and equipped with leak detectors.

- Substances which occur in cases of damage and which are polluted with escaped substances hazardous to water shall be retained and recycled or disposed of properly and without causing any damage.
- As a matter of principle, retention rooms shall not have any outlets.
- Operating instructions including a monitoring, maintenance and alarm plan shall be established and observed.



## 10. ICPDR Information System

### Geographical Information System (GIS)

The GIS ESG is entrusted with establishing a GIS for the Danube River Basin and coordinating the production of the Danube River Basin overview map for the implementation of the WFD. This includes the definition of different modalities for establishing the Danube GIS with particular attention to appropriate cartographic systems (such as base map, coordinates, scales, etc.).

### Emissions Inventory

The Emissions Inventory 2000 is available on the public web site and accessible through queries (predefined reporting formats) both by country or by river basin and through click-on maps. Generating tabular reports of main pollutants, detailed data of the emissions sources and bar charts of annual loads for selected pollutant by river basin is also possible. The preparation of Emissions Inventory 2002 has also started.

### TNMN Database

Data for the years 1996 through 2000 are now available. Data for the year 2000 were received from the TNMN Data Centre (Slovakia) and imported into the TNMN Database. Users can generate predefined reports for:

- overview data (annual average, minimum and maximum values of a selected determinand and/or for selected monitoring point);
- results of analysis at monitoring points (detailed data of samples and analysis at selected monitoring points);
- TNMN monitoring points, determinands and analytical methods.

Charts are also available for:

- average values;
- determinand values by date of sampling.

The collection, checking and processing of 2001 data is under way.

### Library System and electronic publishing of ICPDR documents

The Library System has been integrated into the ICPDR Information System and the user interface has been adapted. The Library System information is regularly updated.

Several publications were placed on the public website in 2002, including:

- Joint Danube Survey: full technical report, summary reports (in English and German) and press releases (in English and German);
- Danube Watch Magazine 1/2002 and 2/2002;
- TNMN Yearbook 1998;
- UNDP/GEF Danube Regional Project Documentation.

### User support

A vast training programme for all internal users was launched in December with the support of the UNDP/GEF Danube Regional Project. The first step of the programme was to train the expert groups information managers and national information managers. At a later step these information managers will provide support for the UNDP/GEF Danube Regional Project to organize and carry out a series of training programmes in participation countries for national members of the expert groups. A detailed electronic User

## 10. ICPDR Information System



Manual has been created and placed on the Information System.

### Hardware and software upgrade

Both the website management software (Oracle WebDB, now called Oracle Portal) and the database management software (Oracle8 Database Server) were upgraded in 2001. Due to the accelerated activities of the expert groups and the UNDP/GEF Danube Regional Project, the number of visits to the Information System dramatically increased and the capacity of the web server proved insufficient. In order to overcome these difficulties, new hardware was purchased and installed.

### Other activities

#### User Survey

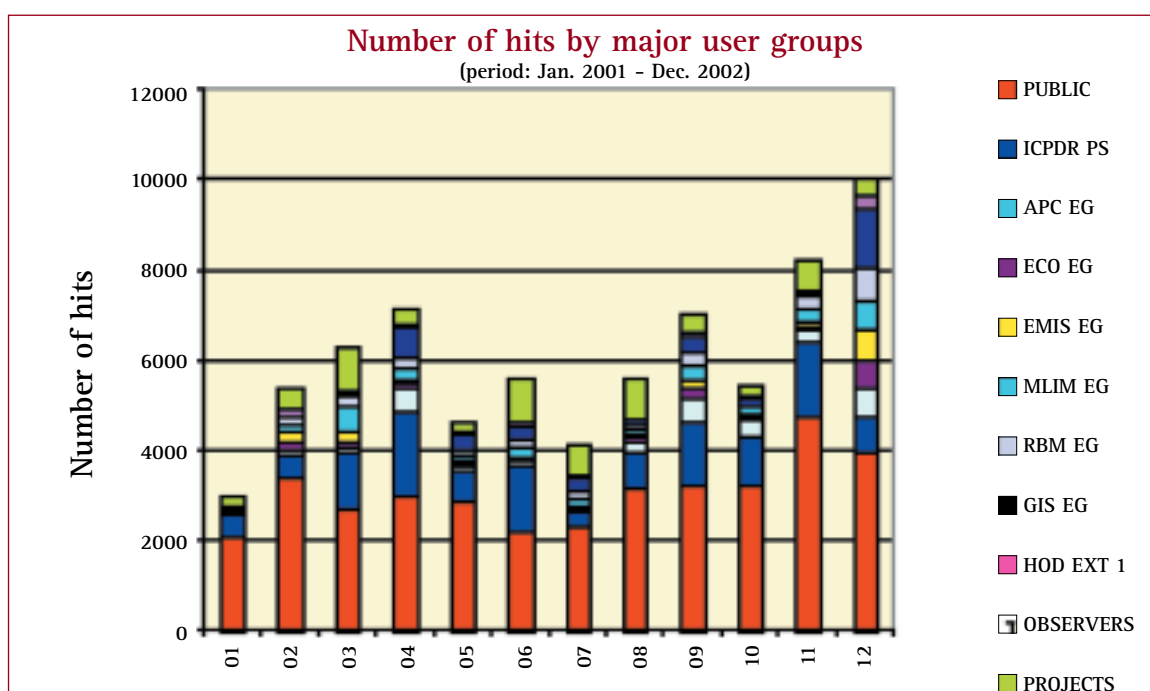
A user survey was conducted within the frame of Component 2.4 “Reinforcement of ICPDR Infor-

mation System (Danubis)” of the UNDP/GEF Danube Regional Project. The more-than-50 surveyed users were asked about the hardware and software set-up and their internet connection speed. They also made suggestions for ways to improve the Information System.

#### User and access management

There have been 231 registered users by the end of 2002. Five new user groups have been created within the Information System:

- experts to UNDP/GEF Danube Regional Project (GFA-TERA, RODECO, RAMBOLI)
- technical experts to the different expert groups;
- observers to the ICPDR;
- members of the contracting parties delegations to the ICPDR;
- national and expert groups’ information managers.

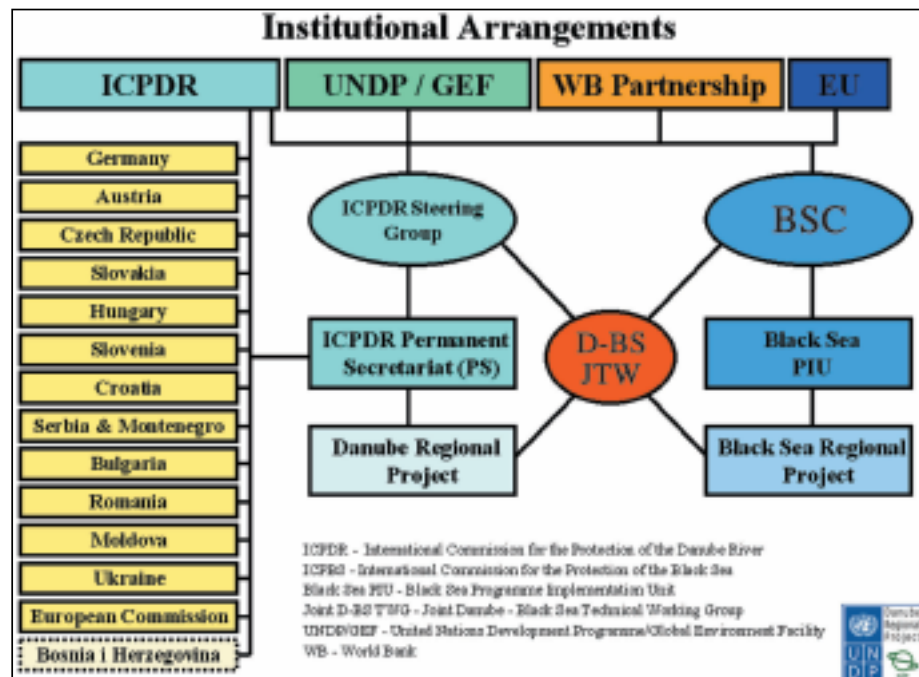


# 11. International and Regional Cooperation

## 11.1 Progress of the UNDP/GEF Danube Regional Project

In May 2001, the GEF Council approved Tranche 1 for the implementation of the first phase of the UNDP/GEF Danube Regional Project "Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin", known in short as the Danube Regional Project. The initial Project Brief prepared in September 2000, endorsed by all 11 requesting countries and cleared by GEF Secretariat, had envisaged a total budget of USD 15m for a period of five years. However, due to funding constraints the UNDP/GEF Danube Regional Project was split into two parts (phases) to be funded by two separate tranches.

and coherent implementation of the Strategic Action Plan 1994 (SAP 1994), the ICPDR Joint Action Programme and the related investment programs in line with the objectives of the DRPC. The institutional arrangements are presented the following chart:



The overall objective of the Danube Regional Project is to complement the activities of the ICPDR required to provide a regional approach and global significance 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 DRB and the Black Sea area. In this context, the GEF Regional Project should support the ICPDR, its structures and the participating countries in order to ensure an integrated

Phase I of the UNDP/GEF Danube Regional Project officially began in December 2001 and will be concluded by November 2003. The Project is seated in the Vienna International Centre, next to the ICPDR Permanent Secretariat offices. The project team has 5 staff members – project manager, environmental / public participation specialist, financial & programme officer, information management expert and project secretary.

The specific objective of Phase I is to prepare and initiate basin-wide capacity-building activities. A

# 11. International and Regional Cooperation



total of 20 project components are being carried out thereby establishing a solid base for the implementation of Phase II of the Project.

The specific objective of Phase II of the Project is to set up institutional and legal instruments at the national and regional levels to assure nutrient reduction and sustainable management of water bodies and ecological resources, involving all stakeholders and building up adequate monitoring and information systems. Phase II will be implemented from December 2003 to November 2006.

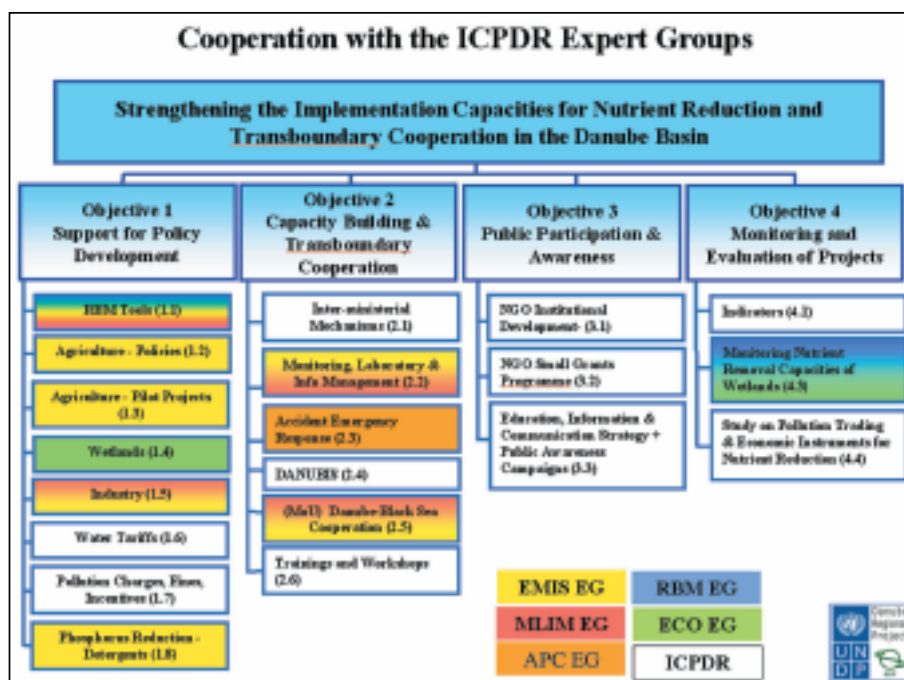
In line with the long-term and overall goals of the project, the following immediate objectives have been set, covering the 20 project components:

1. creation of sustainable ecological conditions for land use and water management;
2. capacity building and reinforcement of transboundary cooperation;
3. strengthening of public involvement and reinforcement of community actions through the Small Grants Programme;
4. reinforcement of monitoring, evaluation and information systems to control transboundary pollution and to reduce nutrients and harmful substances.

## Progress from December 1, 2001 to December 30, 2002

The Project Inception Phase (Dec. 2001 – Feb. 2002) was completed with an inception workshop held at Hernstein, Austria, Feb. 6–8, 2002, and the drafting of the Inception Report (Feb. 27, 2002).

To specify the details for carrying out Phase I of the UNDP/GEF Danube Regional Project and to serve as a guide to all relevant stakeholders, the Project Implementation Plan (PIP) was prepared based on the provisions of the Project Document and the results of the Inception Workshop. Once the PIP was completed, the focus of the project switched to finalising the Terms of Reference for the implementation of the various project components which had been thoroughly discussed and agreed with the major stakeholders including the ICPDR Expert Groups and the Secretariat.



## 11. International and Regional Cooperation

Direct consultations were held with the Danube Environment Forum (DEF) and the Regional Environmental Center (REC) concerning their respective parts of the project. Several missions to the Danube countries were undertaken to discuss project implementation arrangements at the national level (coordination, identification of national experts, cooperation with related projects etc.).

As of the end of the year 2002, most of the project components of Phase I are under implementation and the remaining ones are in the process of contract preparation or finalization of the Terms of References. The following table shows the status of implementation by project components as of 31 December 2002:

Project reference number	Component	Status			
		under implementation	Inception phase	Contract underway	ToR developed
1.1-1, 1.1-5	GIS- Danube Basin District Map, Needs assessment and conceptual design for a DRB GIS System				4
1.1-3	Applying EU Economic Guidelines for economic analysis to the DRB				4
1.1-2, 1.1-6, 1.1-7	Stress/pressure and impact analysis, typology of surface waters and ecological classification			4	
1.1-8	Characterisation and Analysis of Transboundary Ground Water Bodies			4	
1.1-9	Pilot River Basin Plan in the Sava		4		
1.1-11	Workshops on public participation for RBM Plan				
1.2, 1.3	Policies for the control of agricultural point and non-point sources of pollution; Pilot projects on agric pollution reduction	4			
1.4	Integrated land use assessment and inventory of protected areas	4			
1.5	Industrial reform and development of policies and legislation for reduction of nutrients and dangerous substances	4			
1.6, 1.7	Assessment and development of water and waste water tariffs and effluent charges designs			4	
1.8	Recommendations for the reduction of phosphorus in detergents				4
2.1	Interministerial Coordination Mechanisms				4
2.2	Support for TNMN and EMIS Inventory harmonisation	4			
2.3-2,2.3-3	Accident Risk Spots Inventory and preventive measures			4	
2.3-4	Support for DBAM		4		
2.4, 2.3-1	Support for Danubis reinforcement	4			
2.5	Danube - Black Sea MoU / Support for JTWG	4			
2.6	Training and consultation workshops	4			
3.1	Institutional development of NGOs and community involvement	4			
3.2	Initiating the Small Grants Programme -1st contract	4			
3.3, 3.3-1	Developing a DRB Communications Strategy	4			
4.1	Indicators for project monitoring and evaluation				4
4.3	Monitoring and assessment of nutrient removal capacities of riv. wetlands	4			
4.4	Study on pollution trading and corresponding economic instruments for nutrient reduction				4



# 11. International and Regional Cooperation



## 11.2 The Danube - Black Sea Cooperation

### Evidence of long-term changes in the Black Sea as a whole

About 340 million cubic meters of the Danube water pour into the Black Sea every year. Since this represents over 50% of the total riverine inflow into the Black Sea it makes the Danube the most important river emptying into the Black Sea, apart from two other large European rivers, the Dnieper and the Don. The Black Sea is the most isolated from the world's ocean body; it is connected to the oceans via the Mediterranean Sea through the Bosphorus, Dardanelle and Gibraltar straits.

The thin upper layer of the Black Sea water (up to 150m) supports the unique biological life in the marine ecosystem. The deeper and more dense water layers are saturated with hydrogen sulphide that has for thousands of years been accumulating from decaying organic matter.

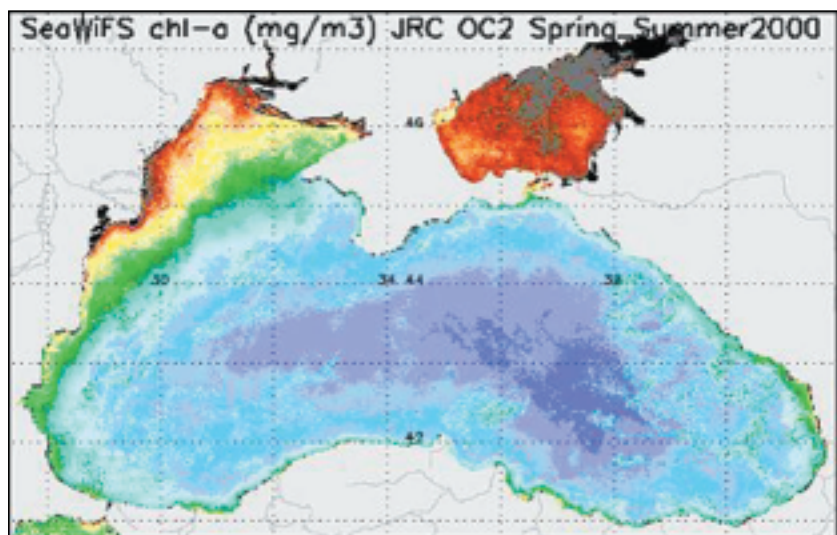
Due to the unique geomorphologic structure and specific hydrochemical conditions, specific protozoa and bacterial organisms as well as some multi-cellular invertebrates inhabit the deep-sea waters. Saline water from the Mediterranean Sea trickles into the Black Sea along the bottom of the Bosphorus and spreads across the bottom of the Black Sea. The less saline water of

the sea flows from the Black Sea into the Mediterranean above this counter-flowing saline layer.

For these reasons, the Black Sea is very vulnerable to pressure from land-based sources of pollution and in particular from nutrient over-enrichment.

The eutrophication (or nutrient over-enrichment) of the Black Sea due to the excessive loads of nutrients coming from rivers and directly from the coastal countries has led to radical changes in the ecosystem since the 1960s. This has had a major impact on the biological diversity and human use of the sea, including fisheries and recreation.

Based on the available scientific assessments and findings of the Danube Water Quality Model simulation carried out in the frame of the Danube Pollution Reduction Programme, an estimated annual load of 537,000 tons of nitrogen and 48,900 tons of phosphorus enter the Black



Composite satellite image of the Black Sea, showing high concentrations of chlorophyll.

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Sea from the Danube alone. The composite satellite image shows high concentrations of chlorophyll in the Sea of Azov and the North West shelf of the Black Sea – the result of micro algae blooms caused by eutrophication.

Nutrient loads have over the past few years been considerably reduced due to a dramatic reduction in the use of fertilisers in many middle and lower-Danube countries and thanks to the considerable improvement in the treatment of waste water from municipal and industrial sources in the upper (Germany and Austria) and central-Danube countries (Czech Republic, Hungary, Slovenia, Slovakia). EU Member States and accession coun-

tries have been applying with increasing vigour the respective EU directives for pollution control and water quality improvement.

### Black Sea in figures:

Drainage area:	2,000,000km <sup>2</sup>
Total shoreline:	4,340km
Area of water surface:	432,000km <sup>2</sup>
Water volume:	547,000,000m <sup>3</sup>
River inflow:	340,600,000m <sup>3</sup>
Maximal depth:	2,212m
Salinity:	18‰ – 22‰

### Black Sea species:

Fungi, algae, higher plants	1,619
Invertebrates	1,983
Fishes	168
Marine mammals	4

### **Danube-Black Sea Joint Technical Working Group**

As a basis for environmental cooperation between the ICPDR and the Commission for the Protection of the Black Sea, a Memorandum of Understanding (MoU) was signed at the ministerial meeting in Brussels in November 2001. The Danube-Black Sea Joint Technical Working Group (JTWG) was established to assure the implementation of the technical measures of the MoU.

In 2002, the JTWG developed a detailed workplan for the implementation of the MoU, which can be summarised as follows:

- assessment of existing monitoring systems;
- development of a monitoring programme;
- development of ecological status indicators

(since all these three elements have been already developed for the Danube Basin, these tasks have to be carried out for the Black Sea Convention area only);

- assessment of pollution (causes) in the Black Sea Convention area and of the ecological status of the Black Sea;
- development of reporting formats;
- recommendations to limit discharge of nutrients and hazardous substances;
- enhancement of information mechanisms.

The current deficiencies in the national monitoring systems in the Black Sea region adversely affect the availability of data and the overall coordination and management of the monitoring activities. Environmental quality standards and analytical methodologies are inadequate. As for the analytical quality control, many Black Sea



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laboratories are certified at the national level only, while laboratories in Bulgaria and Romania are certified at the international level.

Within the Danube Basin, the current state of the Transnational Monitoring Network including the load assessment programme allows sufficient observation and data interpretation. Indicators for the assessment of the environmental status of the Black Sea, indicating changes over time in the

Black Sea ecosystems due to nutrient inputs from the Danube River, were identified by the JTWG and approved by the ICPDR.

Finally, the secretariats of the two commissions agreed to draft the reporting formats for annual and 5-year reports. The formats will be discussed at the next meeting of the JTWG due to take place in early 2003.

## 12. Abbreviations and Acronyms

AEWS	Accident and Emergency Warning System
APC EG	Expert Group on Pollution Prevention and Control
AQC	Analytical Quality Control
BAT	Best Available Techniques
DEF	Danube Environmental Forum
DRB	Danube River Basin
DRPC	Danube River Protection Convention, short for Convention on Cooperation for the Protection and Sustainable Use of the Danube River
ECO EG	Expert Group on Ecology
ECON ESG	Expert Sub-group on Economics
EGM	EuroGlobalMap
EMIS EG	Expert Group on Emission
GIS	Expert Sub-group on Cartography and GIS
GW	Groundwater
GWP	Global Water Partnership
ICPDR	International Commission for the Protection of the Danube River
IFI	International Finance Institutions
IPPC	Integrated Pollution Prevention Control
ITR	Investigation of the Tisza River
IUCN	World Conservation Union
JDS	Joint Danube Survey
JTWG	Joint Technical Working Group
MLIM EG	Expert Group on Monitoring, Laboratory and Information Management
MONERIS	MOdelling Nutrient Emissions in RIver Systems
MoU	Memorandum of Understanding
NGO	Non-Governmental Organisations
PE	Population Equivalent
PIAC	Principle International Alert Center
PIP	Project Implementation Plan
PP	Public Participation
RBM	River Basin Management
RBM EG	Expert Group on River Basin Management
REC	Regional Environmental Center for Central and Eastern Europe
TNMN	Transnational Monitoring Network
ToR	Terms of Reference
UNDP/GEF	United Nations Development Programme/Global Environment Facility
WFD	EU Water Framework Directive (Directive 2000/60/EC)
WWF	World-wide Fund for Nature
WWTP	Wastewater Treatment Plant

## Annex 1: Composition of the ICPDR in 2002



**PRESIDENT:** *Martina MOTLOVA*,  
Permanent Delegate of the Czech Republic to the  
OECD

### HEADS OF THE DELEGATIONS:

**Germany:** *Fritz HOLZWARTH*, Deputy Director  
General, Federal Ministry for the Environment,  
Nature Conservation and Nuclear Safety, P.O. Box  
120629, Bernkasteler Str. 8, DE-53048 Bonn,  
Germany

**Austria:** *Wolfgang STALZER*, General Director,  
Federal Minister for Agriculture, Forestry,  
Environment and Water Management, Section VII,  
Marxergasse 2, AT-1030 Vienna, Austria

**Czech Republic:** *Jaroslav KINKOR*, Director of the  
Water Protection Department, Ministry of the  
Environment, Vrsoviccka 65, CZ-10010 Praha 10,  
Czech Republic

**Slovakia:** *Milan MATUSKA*, General Director,  
Ministry of Environment, Namestie L'Stura 1, SK-  
81235 Bratislava, Slovakia

**Hungary:** *Gyula HOLLÓ*, Department of European  
River Basin Management, Ministry of Transport  
and Water Management, Fő utca 44-50, POB 351,  
HU-1394 Budapest, Hungary

**Slovenia:** *Mitja BRICELJ*, Advisor to the  
Government, Ministry of Environment, Spatial  
Planning and Energy, Dunajska cesta 48, SI-1000  
Ljubljana, Slovenia

**Croatia:** *Željko OSTOJIĆ*, Senior Adviser on Water  
Protection, State Water Directorate, Ulica grada  
Vukovara 220, HR-10 000 Zagreb, Croatia

**Bosnia-Herzegovina:** *Mehmed CERO*, General  
Secretary, Federal Ministry of Physical Planning  
and Environment, M.Tita 9a, BA-71000 Sarajevo,  
Bosnia - Herzegovina

**Borislav JAKŠIĆ**, Ministry for Urbanism,  
Construction, Communal Issues and Ecology, Trg  
Srpskih Junaka 4, BA-78000 Banja Luka, Bosnia  
- Herzegovina

**Serbia - Montenegro (former Yugoslavia):**  
**Zdravko TUVIĆ**, Head of Stability Pact Group,  
Federal Ministry of Foreign Affairs, Kneza  
Milosha 24, YU-Belgrade, Serbia and Montenegro

**Bulgaria:** *Manoela GEORGIEVA*, Deputy Minister,  
Ministry of Environment and Water, Bd. Maria  
Luisa 22, BG-1000 Sofia, Bulgaria  
(until 19.11.2002)

*Nikolai KOUYUMDZIEV*, Deputy Minister,  
Ministry of Environment and Water, Bd. Maria  
Luisa 22, BG-1000 Sofia, Bulgaria (from  
19.11.2002)

**Romania:** *Florin STADIU*, Secretary of State,  
Ministry of the Water and Environmental  
Protection, 12 B-dul Libertatii, Sect. 5, RO-  
Bucharest, Romania

**Moldova:** *Gheorge DUCA*, Minister, Ministry of  
Ecology, Construction and Territorial Development,  
9 Cosmonutilor St., MD-2005 Chisinau, Moldova

**Ukraine:** *Mykola STETSENKO*, Deputy Minister of  
Water Resource Department, Ministry of  
Environment and Natural Resources, Khreshchatyk  
5, UA-252601 Kiev, Ukraine (until 22.10.2002)

*Anatoli V. GRITSENKO*, Cabinet of Ministers,  
Ministry of Environment and Natural Resources,  
Khreshchatyk 5, UA-252601 Kiev, Ukraine (from  
22.10.2002)

**European Community:** *Jean-Francois VERSTRYNGE*,  
Deputy Director General, DG/Environment,  
European Commission, 200, rue de la Loi, BU-9  
01/169, BE-1049 Brussels, Belgium

# Annex 1: Composition of the ICPDR in 2002

## PERMANENT SECRETARIAT:

*Joachim BENDOW*, Executive Secretary

*Károly FUTAKI*, Information Management, Administration Officer

*Igor LIŠKA*, Technical Expert for Water Management and Water Quality

*Mihaela POPOVICI*, Technical Expert for Water Management and Emission Pollution Control

*Ursula SCHMEDITJE*, Technical Expert for River Basin Management

*Julia KÖLBLINGER*, Support Staff, Finance & Relation with Host Country Services

*Sylvia KERSCH*, Support Staff, PA

*Jasmine BACHMANN*, Technical Support – Public Participation & Public Relation

## CHAIRPERSONS OF THE EXPERT GROUPS AND SUBGROUPS

**Expert Group on River Basin Management (RBM EG):** *Helmut BLOECH*, European Commission, DG/Environment, Rue de la Loi 200, BE-1049 Brussels, Belgium

**Expert Subgroup on GIS (GIS ESG):** *Visnja OMERBEGOVIĆ*, Croatian Waters, Ulica grada Vukovara 220, HR-10 000 Zagreb, Croatia

**Expert Subgroup on Economics (ECON ESG):** *Ibolya GAZDAG*, Ministry of Transport and Water Management, Dob ut. 75-81, HU-1077 Budapest, Hungary

**Expert Group on Ecology (EC EG):** *János BRUHÁCS* (until 25.02.2002), Janus Pananius University, 48-as tér 1. H-7622 Pécs, Hungary, *Gabor MAGYAR* (from 25.02.2002), Ministry of Environment and Water, Authority for Nature Conservation, Költö utca 21, HU-1121 Budapest, Hungary

**Expert Group on Emissions (EMIS EG):** *Bernd MEHLHORN* (until 31.08.2002), Head of Unit Emissions to Water, Federal Environmental Agency, Bismarckplatz 1, DE-14191 Berlin, Germany

*Zdenka KELNAROVA* (from 01.09.2002), Water protection Department, Ministry of Environment, Namestie L' Stura 1, SK-81235 Bratislava, Slovakia

**Expert Group on Monitoring, Laboratory and Information Management (MLIM EG):** *Liviu POPESCU*, Senior Expert, ICIM Research & Engineering Institute for Environment, Spl. Independentei 294, Sect. 6, RO-77703 Bucharest, Romania

**Expert Group on Accident Prevention and Control (APC EG):** *Aurel VARDUCA*, Head of the Department, ICIM Research & Engineering Institute for Environment, Spl. Independentei nr 294, Sect. 6, RO - 77703 Bucharest, Romania

**Expert Group on Legal and Strategic Issues (S EG):** *Knut BEYER*, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, WA I 6B, Bernkasteler Straße 8, DE-53048 Bonn, Germany

## Annex 2: Observer Status as of 31.12.2002



Name of organisation	Address
Danube Commission for Inland Navigation	<i>Danail Nedialkov, Director General, Benczúr utca 25, HU-1068 Budapest - Hungary</i>
World Wide Fund for Nature (WWF International)	<i>Jonathon Hornbrook, Director, Danube Carpathian Programme, Mariahilferstr. 88a/3/9 AT-1070 Vienna - Austria</i>
International Association for Danube Water Research (IAD; in the framework of SIL)	<i>Meinhard Breiling, General Secretary Schiffmühlenstr. 120, AT-1220 Vienna - Austria</i>
RAMSAR Convention on Wetlands	<i>Tobias Salathe, Regional Coordinator for Europe, Rue Mauverney 28, CH-1196 Gland - Switzerland</i>
Danube Environmental Forum (DEF)	<i>c/o Daphne, Hanulova 5/D, SK - 844 40 Bratislava - Slovak Republic</i>
Regional Environmental Center for Central and Eastern Europe (REC)	<i>Toni Popovski, Executive Director Ady Endre ut 9-11, HU-2000 Szentendre - Hungary</i>
International Commission for the Protection of the Black Sea (BSC)	<i>Plamen Dzhadzhev, Dolmabahce Sarayi II. Harekat Kosku, TR-80680 Besiktas, Istanbul - Turkey</i>
Global Water Partnership (GWP)	<i>Jozsef Gayer, Global Water Partnership VITUKI II, P.O.Box 27, HU-1453 Budapest - Hungary</i>
UNESCO-IHP	<i>Pavol Miklanek, Slovak Committee for Hydrology, Institute of Hydrology SAS, P.O.Box 94 SK - 838 11 Bratislava 38 - Slovak Republic</i>  <i>Philippe Pypaert, UNESCO Venice Office Dorsoduro, 1262/A, IT - 30123 Venice - Italy</i>
International Working Association of Water Works in the Danube Basin (IAWD)	<i>Markus Werderitsch, c/o Wiener Wasserwerke Grabnergasse 4-6, AT-1061 Vienna - Austria</i>



## Annex 3: Financial Situation

### REGULAR BUDGET

#### Contributions:

Contracting Parties	Contribution Keys <sup>1</sup> %	Contributions in EUR	
		Planned	Actual
Germany	14.36	114,809.02	114,809.02
Austria	14.36	114,809.02	114,809.02
Czech Republic	10.94	87,446.44	87,446.44
Slovakia	8.65	69,204.85	69,204.85
Hungary	10.94	87,446.44	87,447.00
Slovenia	10.94	87,446.44	87,331.32
Croatia	8.65	69,204.85	69,204.85
Bulgaria	5.00	39,975.54	39,975.54
Romania	8.65	69,204.85	69,204.85
Moldova	5.00	39,975.54	5,653.27
EC	2.50	19,987.77	19,987.77
<b>Total Contribution</b>	<b>100.00</b>	<b>799,510.76</b>	<b>765,073.93</b>

#### Expenditures<sup>1</sup>

	Approved budget	Expenditures 2002	Engagements	Status as of 31-Dec-2002
A. Administrative costs	EURO	EURO	EURO	EURO
1. Staff	451,500	375,765	16,651	59,084
2. Services	134,750	86,199	50,594	-2,043
3. Equipment	43,500	16,937	26,510	53
4. Other	72,500	47,256	30,118	-4,874
<b>Sub-total A</b>	<b>702,250</b>	<b>526,157</b>	<b>123,874</b>	<b>52,219</b>
<b>B. Operational costs</b>	<b>97,261</b>	<b>67,791</b>	<b>4,700</b>	<b>24,770</b>
<b>Total (A+B)</b>	<b>799,511</b>	<b>593,948</b>	<b>128,574</b>	<b>76,989</b>
Working Capital Fund	121,494	-42,552	0	164,046
<b>Overall totals</b>	<b>785,760</b>	<b>593,948</b>	<b>128,574</b>	<b>75,558</b>

<sup>1</sup> Minor differences are due to roundings