

Strengthening of surface water monitoring network

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1. Basic Information

- 1.1 **CRIS Number:** 2006/018-343.06.03
- 1.2 **Title:** Strengthening of surface water monitoring network
- 1.3 **Sector:** Environment
- 1.4 **Location:** Bulgaria
- 1.5 **Duration:** 18 months

2. Objectives

2.1 Overall Objective(s):

Implementation of WFD 2000/60/EC requirements related to monitoring of surface water bodies.

2.2. Project purpose:

Strengthening the national surface water monitoring systems ensuring that adequate monitoring is performed and the results are fed into the process of preparing and updating the Programme of measures and the River Basin Management Plans for all 4 River Basin Directorates in Bulgaria. (article 8 WFD)

2.3. Accession Partnership (AP) and NPAA priority

Measures in favour of the improvement of the environment have been identified in the Accession Partnership 2003 as a short-term priority. The priorities for the Bulgarian authorities are:

Update the overall assessment of the situation in the environment sector, including regarding the transposition of the EU *acquis*, in order to identify gaps to be filled in.

Continue implementation of the *acquis* with particular emphasis on access to information, air quality, waste management, water quality, nature protection, industrial pollution and risk management as well as nuclear safety and radiation protection. Ensure that the environmental *acquis*, particularly the Environmental Impact Assessment Directive, is properly implemented in preparing large-scale infrastructure projects

2.4. Contribution to National Development Plan

Not applicable

2.5 Cross Border Impact

Not applicable

3. Description

3.1 Background and justification:

The former Bulgarian legislation in this sector differs significantly from the European one to the number of sampling points required, frequency of sampling and analyses, the list of the

chemical, microbiological, radiological, indicator and some specific parameters (e.g. Cryptosporidium) to be measured and the limit values envisaged for some of the parameters.

Bulgaria has already signed Accession treaty to European Union (hereinafter referred to as "EU") on April 25, 2005, and is presently conducting various actions required. In the water sector, in order to satisfy the requirements of EU Water Framework Directive (hereinafter referred to as "EU-WFD") that targets realization of preferable status of all the water bodies in the area by the year 2015, the government of Bulgaria has enforced new Water Act (hereinafter referred to as "the Water Act") in 2000, and is promoting organizational and legal development dividing the whole country into four river basins.

EU-WFD sets targets as follows: Formulation of river basin management plan by 2009; explanation of the draft plan to the public in 2008; submission of the plan to EU by 2010; and, realisation of improvement of river basin water environment by 2015.

Under these targets, the Government of Bulgaria has started various activities related to the preparation of river basin management plans, though Ministry of Environment and Water (hereinafter referred to as "MoEW") and each basin directorate, Environmental Executive Agency. One of the most important points is to develop and/or enlarge surface water monitoring network in accordance with WFD requirements and specially the biological monitoring and monitoring on the priority and harmful substances.

In accordance with the process of harmonization with the legislation of the European Union and article 135, of the Water Act adopted in 1999, the following regulations transposing the EU water related directives have been prepared:

- Regulation on the way and order of industrial waste water discharge in the urban sewerage systems (Dir. 76/464/EEC; 91/271/EEC);
- Regulation on the quality of the water intended for humane consumption (Dir. 98/83/EEC);
- Regulation on the quality requirements to surface water intended for drinking purposes (75/440/EEC);
- Regulation on the prevention of the waters from nitrates pollution caused by agriculture (Dir. 91/676/EC);
- Regulation on the quality of bathing water (Dir. 76/160/EC);
- Regulation on the quality of fish and shellfish water (Dir. 78/659/EEC and 79/923/EEC);
- Regulation on the quality of coastal sea water (Dir. 79/923/EEC; 76/464/EEC; 91/271/EC and 76/160/EEC);
- Regulation on the emission limit values of dangerous and hazardous substances in the discharged waste water (Dir. 76/464/EEC);
- Regulation on the way and order of the development of the networks and National Water Monitoring System activities ;
- Regulation on the research, use and prevention of the ground water (Dir. 80/68/EEC and 76/464/EEC);
- Regulation on the sanitary protected areas (Dir. 75/440/EEC; 80/68/EEC; 91/676/EEC);
- Regulation on the wastewater discharge permits issue and individual emission limit values for point sources of pollution (Dir. 80/68/EEC; 76/464/EEC and 91/271/EC).

The competent authority for implementation and enforcement of the above-mentioned Regulations is the Ministry of Environment and Water together with Ministry of Health and

their regional authorities. Ministry of Environment and water integrates 15 Regional Laboratories and Environmental Executive Agency are responsible for the supervision of the monitoring of surface water. Environmental Executive Agency (EEA) is a methodological body by the MOEW caring out investigations, capacity building and training courses, and providing referent laboratory and arbitrary analyses in the water field.

In order to ensure the effective and full implementation of above mentioned regulations/directives it is necessary to provide adequate training and to enlarge the existing national and regional structures for surface water monitoring and water protective activities.

Connected to the requirements of point 1.3 from Annex V of WFD, it will important to establish surveillance monitoring program and operational monitoring program and may also need in some cases to establish programmes of investigative monitoring measures.

At the same time, it will give the basis for the future adaptation of the Bulgarian standardization practice to the appropriate EN and ISO reference analytical methods for determination of the chemical, microbiological, radiological and some specific parameters related to the above mentioned measures.

In addition, it will provide the adequate monitoring equipment to comply with the specific EU provisions for sampling and analysis of the chemical, biological parameters and priority substances envisaged in the directives and respective national regulations.

Therefore Bulgaria shall ensure the development of programmes for the monitoring of aquatic environment in order to establish a coherent and comprehensive overview of water status. And for surface water such a programme shall cover the chemical and the ecological status of the water bodies. In regard to the WFD the biological water survey is one of the control measures of surface water status. The WFD outlines various requirements for monitoring programmes in its Article 8. Further, different types of surface water monitoring programmes are discriminated: surveillance monitoring, operational monitoring, and investigative monitoring (WFD, Annex V, 1.3). The various monitoring programmes differ in the types of information that can be derived from the data.

For classification of the ecological status (high, good, moderate, poor or bad), the so-called Ecological Quality Ratio (EQR) is to be used. The EQR will be derived from the biological quality elements. The EQR may seem to be a concrete measure (a number between 0 and 1), but several yet insufficiently quantified factors apply, like reference biological value or slight deviation from reference conditions. Quantification of the various terms is the subject of various WFD Guidance Documents and related studies.

Following the requirements for assessment of the ecological status, the monitoring programmes should contain the following quality elements for inland waters: From the biological elements (the major focus of the present project) it can be derived that both qualitative (composition) and quantitative (abundance) methods are to be developed and applied. Annex V of the WFD states that Methods used for the monitoring of type parameters shall conform to the international standards or such other national or international standards that will ensure the provision of data of an equivalent scientific quality and comparability. Annex V explicitly mentions several ISO standards for macro invertebrate sampling; for

macrophytes, fish, and diatoms, it only mentions Relevant CEN/ ISO standards when developed.

The Water Framework Directive requires a new approach based on biological/ecological assessment of the water bodies mainly.

The water monitoring authorities in the frame of the MOEW – Executive Environment Agency, Regional labs and Water Directorates have not special equipment for biological monitoring of surface waters and not adequate data management equipment-common information system. The supply of modern equipment for biological analysis including special microscopes connected with PC etc. is of crucial important to meet WFD requirements for water monitoring and water status assessment. Not sufficient number of monitoring equipment for physico-chemical analysis and water quantity measurement. In addition there is need for sediment analysis in the frame of the national water monitoring system. The new approaches in to WFD needs and special staff training on all levels.

Finally, the project is part of the realization of a multi-annual program for alignments with EU legislation and practice for the water sector (see Annex 6). This program determines different transitional periods for introduction and implementation of the relevant monitoring requirements.

3.2 Sectoral rationale

Not applicable

3.3 Results

1. Upgrade national Surface water monitoring system to meet specific requirements of WFD
2. MOEW, EEA and RBD equipped and staff trained to follow requirements of directive 2000/60/EC for monitoring, analysis and assessment of surface water bodies
3. Administrative capacity in place for the operation and further

3.4 Activities (including Means)

Twinning component

- Assessment of capacity of MOEW, EEA and RBD staff for implementation new approaches for preparation of Monitoring programmes
- Training for staff in MOEW, EEA and BD-s for European standardised methods for monitoring and analysis (Article 8.3 WFD) and preparation of surveillance and operational monitoring programmes

Equipment supply component

- Assess and identify existing equipment and specify and confirm needs of new sampling and monitoring equipment and appliances
- Providing the equipment for data analysis and management for physico-chemical, biological parameters and priority substances according to WFD (Article 8.3 WFD)
- Manage the process of develop connection to exchange information and incorporate data in the river basin management planning

3.5 Linked Activities:

There are additional previous projects with direct impact to the water sector and implementation of the EU WFD:

Phare Twinning project 1998: Transposition of the EU Directives dealing with Urban Wastewater treatment (91/271/EEC), Dangerous Substances discharges into aquatic environment (76/464/EEC) and Permit issuing. This project helped the Ministry of Environment and Water (MOEW) in the process of transposition of the requirements of these Directives and in this connection MOEW has adopted and approved 2 Programs for the implementation of Urban Waste Water Directive and Dangerous Substances Directive. These Programs were presented to the European Commission in March 2004 and became part of the Bulgarian legislation.

Related programmes and donor activities:

The first step of River Basin Management in Bulgaria was conducted with the help of the first Twinning project between France and Bulgaria BG EN 99 from 1999 to 2002 with institutional establishment of the River Basin Authorities.

The second step was Twinning project EN 2000 (BG2000EN01A – Institutional strengthening at national and regional level for implementation of the drinking water, fish water and shellfish water, bathing water and dangerous substances discharges directives) by the development of appropriate tools and methodologies for implementation of Acquis Communautaire in the field of drinking water, surface water, bathing, fish and shellfish water and dangerous substances.

Already completed project of the DANCEE section of the Danish Environmental Protection Agency (DEPA) is called “Implementation of the Water Framework Directive in Bulgaria - support to the Bulgarian Ministry of Environment and Water and to the Black Sea Basin Directorate”. This project aims at providing strategic and technical support to the Ministry of Environment and Water in the Pilot Black Sea Area for the River Basin Overview, undertaking GIS training and institutional strengthening of the Black Sea Basin Directorate.

Another on-going project is the project of the Italian Ministry of Environment and Territory called Iskar Pilot Project: Implementation of the Water Framework Directive in the Iskar River Basin and the waste water treatment plants’ pre-feasibility study. The Project aims at the elaboration of an Action Plan for the implementation of Water Framework Directive in the most important tributary to the Danube River – Iskar River.

A new Twinning Project BG 03/IB-EN 02 called “Institutional strengthening of the River Basin Authorities in Bulgaria for Implementation of the EU Water Framework Directive in the Danube River Basin (Pilot River Basin and Sub-River Basin)” will start in August 2004 with the help of key experts from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Federal Republic of Germany. The project will support the efforts of Bulgaria in implementing the legislative and technical elements of the Water Framework Directive in accordance with the Bulgarian Environmental legislation, particularly the elaboration of the elements of the first Draft of the River Basin Management Plan for the Bulgarian part of the Danube River Basin

3.6 Lessons learned:

In order to go ahead with implementation activities on national and regional levels, a series of structural and organizational set-ups are required. Numbers of priorities have been crystallized out from different projects:

- Further discussion about the most efficient structure of the Bulgarian Water sector with regard to the EU accession process;
- Opening the water sector to EU funding with a focus on ISPA and corresponding financing and cost recovery strategies based on an inter-ministerial co-operation, strong involvement of regional authorities and stakeholders;
- Strengthening the human resources at the Ministry of Environment and new Basin Directorates during the accession process;
- Establish contacts and relations with different institutes and organizations dealing with same activities for implementation of EU WFD

4. Institutional Framework

The Ministry of Environment and Water (MOEW) is responsible for formulating the national environment protection policy, preparing the legislation, budgeting of the environment protection activities. It is the authority responsible for water management on national level. The Ministry will rely on the Executive Environment Agency in terms of real and timely information for the environmental components in the country, which is necessary for the effective decision-making process and, at the same time, it guarantees environmental transparency towards the public.

The Executive Environment Agency (ExEA) is an administration under the Ministry of Environment and Water. The ExEA is in charge with the organization and management of implementation of the monitoring of the ecological and chemical status and quality of water, summary of the water ecological status data and with the indication of the adverse trends related to the water environment quality. The ExEA publishes the collected and analyzed data in periodical bulletins providing information for the quality of water resources in Republic of Bulgaria. This is the Bulgarian specialized agency established to perform environmental monitoring /data collection and processing, quality assurance and quality control/, analytical and laboratory analyses, dissemination of information. The ExEA is also the managing and controlling authority for the National System for Environmental Monitoring, which covers the territory of the whole country and provides timely and reliable information on environmental components and factors. The ExEA is the methodological leader of the Regional Laboratories in the field of the sampling and assessment of surface and ground waters.

As Referent Centre for the European Environment Agency the ExEA is engaged to support the information exchange within the "EIONET". Part of the National Monitoring Network of Surface Water /sampling points for surface water, from which data are recorded in NSEM/ is included in the European network for Monitoring of Surface Water – WISE.

Within the ExEA structure, under the Environmental Monitoring Directorate, there are departments and sectors responsible for the different environmental components. With respect to the water issues, there is a Water Monitoring Department, which assumes the responsibility for surface and ground water, and monitoring of emissions into water, as well. Another basic responsibility of Water monitoring Department is the timely and reliable reporting to the different international and national institutions (such as the forth Basin Directorates, and as it was mentioned above, to the European Environment Agency, WISE, ICPDR, Black Sea Commission, etc.)

There are 15 regional laboratories under the ExEA. They are in charge of the monitoring activities such as sampling, analyzing and delivering the data to the Monitoring Department of River Basin Authorities and MOEW and the relevant institutions.

The project results will be used by the Ministry of Environment and Water and the Executive Environment Agency; Regional Laboratories and general public as a whole.

Basin Directorates:

Following the principle of river basin management in the country, stipulated in the Water Act, four river basins districts are established in the country. After the establishment of the Basin Directorates in 2002 as the competent water management authorities, they started their activities and are playing active role in the performance of tasks regarding the implementation of the WFD. The Basin Directorates in Bulgaria are as follows:

Danube Basin District with headquarter in the town of Pleven

Black Sea Basin District with headquarter in the town of Varna

East Aegean Basin District with headquarter in the town of Plovdiv

West Aegean Basin District with headquarter in the town of Blagoevgrad

5. Detailed Budget

| | Phare/Pre-Accession Instrument support | Co-financing | | | Total Cost |
|---------------------------------------|---|----------------------------------|---------------------------|--------------------------------------|-------------------|
| €M | | National Public Funds (*) | Other Sources (**) | Total Co-financing of Project | |
| Investment Support - Sub Total | 3.225 | 1.075 | | | 4.300 |
| % of total public funds | max 75 % | min 25 % | | | |
| Institution Building Support | 0.700 | - | | - | 0.700 |
| Total project | 3.925 | 1.075 | | | 5.000 |

(*) The national co-financing of 25% (€1,07550 MEURO) for the investment component of the project and up to 10% of the Twinning project will be covered from the national budget through the National Fund Directorate at the Ministry of Finance. Phare and national co-financing will be tendered and contracted jointly. The national co-financing will be covered from the national budget, through the National Fund Directorate at the Ministry of Finance.

6. Implementation Arrangements

6.1 Implementing Agency

The Implementing Agency will be the Central Finance & Contracts Unit (CFCU) at the Ministry of Finance, which retains the overall responsibility for the implementation of the project.

The Implementing Agency will be the CFCU within the Ministry of Finance. It will be the Contracting Authority, which retains the overall responsibility for the implementation of the project (approval of terms of reference, tender documents, evaluation criteria, evaluation of offers, signature of contracts, authorization and payments of invoices). The CFCU shall ensure that all activities under the contract are undertaken in strict accordance with the PRAG procedures and will be authorized by the PAO.

The Ministry of Finance (MoF), Central Financing and Contracting Unit (CFCU) will act as Implementing Agency. The CFCU will be responsible for tendering and contracting.

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6.2 Twinning

The twinning partner shall make available to the project long and short-term senior experts, working continuously on site

| <i>Category</i> | <i>Position</i> | <i>No. of Experts</i> | <i>Duration of assignment (m/m)</i> |
|------------------------|------------------------|------------------------------|--|
| Pre-Accession Advisors | Long term expert | 1 | 18 |

The twinning partner shall make available to the project long and short-term senior experts, working continuously on site

In order to undertake the above tasks and achieve the project deliverables, the Twinning Pre-Accession Advisor (PAA) is expected to provide a team of experts having accrued at least 10 years experience in a relevant central administrative structure of a Member-State; he/she shall have experience in monitoring in the field of water and matured experience in implementing Acquis in the water sector. Considerable experience in project management as well as ability to lead a process, communicate clearly and train staff is required.

As English will be the working language, all experts are required to be fluent in English. The RTA is foreseen for 18 months mission in Bulgaria. He/she shall be based in MOEW in Sofia.

6.3 Non-standard aspects

The Practical Guide to Contract Procedures financed from the General Budget of the European Communities in the context of external actions (February 2006) will be strictly followed.

6.4 Contracts

The project to be implemented through 1 Supply Contract and 1 TA Contract.

7. Implementation Schedule

| | 2006 | | | | 2007 | | | | 2008 | | | |
|------------------------|-------------|----|----|----|------------------|----|----|----|------------|----|----|----|
| | 1q | 2q | 3q | 4q | 1q | 2q | 3q | 4q | 1q | 2q | 3q | 4q |
| 1. Twinning | | | | T | C | I | I | I | I | I | E | T |
| 2. Supply of equipment | | | | T | C | I | I | I | I | I | E | T |
| | T-Tendering | | | | I-Implementation | | | | E - ending | | | |

8. Equal Opportunity

Equal opportunity for men and women to participate in all the components of the project will be ensured.

9. Environment

The activities to be undertaken will carry no harmful environmental impact.

10. Rates of return

Not applicable

11. Investment criteria (applicable to all investments)

11.1 Catalytic effect

Without PHARE assistance, the project could be delayed due to the lack of the necessary resources to fulfil the necessary conditions in order to ensure efficient water monitoring system, knowledge and equipment.

Finally, the project is part of the realization of a multi-annual program for alignments with EU legislation and practice for the water sector (see Annex 6). This program determines different transitional periods for introduction and implementation of the relevant monitoring requirements.

11.2. Co-financing

The project will be co-financed by the National Budget by 25 % in its investment part.

11.1 Additionality

No other financing sources from the private sector or from IFIs were available for financing this project.”

11.4. Project readiness and size

Under the PHARE Twinning project 2003 a Definition of Environmental Quality and Quantity Objectives for Surface Waters and in the Preparation of Monitoring Programmes is made. Also the Draft Programmes for Surface Water Monitoring in Bulgaria are prepared for

each River Basin Districts and they are needed support for implementation on one side financial and from the other side training and knowledge dissemination.

11.5. Sustainability

The project complies with EU norms and standards and is in line with the *acquis* of the environment Water sector concerned. It should not have adverse effects on the environment. As a result of the Project there will be a more qualified MOEW, EEA and BDs staff concerning the necessary monitoring norms, sampling and data analysis. MoEW and EEA take the responsibility to ensure the sustainability of the Project's results.

11.6. Compliance with state aids provisions

The project is in accordance with Article 92(3)(a) of the Treaty of Rome. All actions financed by Phare will be carried out in line with the rules and procedures of Phare, ISPA and SAPARD Practical Guide and comply with the state aid agreements.

12 Conditionality and sequencing

- The finalisation of the setting-up monitoring programs for each of the River Basin Authorities (under MEW) and support for forthcoming preparation of River basin management plans by the end of 2009 as required WFD.
- To carry out the sampling, monitoring and data analysis in accordance with EU WFD requirements as parameters, including biological ones, 5 stage scale for assessment of water body status.

ANNEXES TO PROJECT FICHE

Annex 1 - Log frame

Annex 2 - Detailed implementation chart

Annex 3 - Contracting and disbursement schedule

Annex 4 – Executive summaries of economic and financial appraisals

Annex 5 – Reference list of relevant laws and regulations

Annex 6 – Reference list of relevant strategic plans and studies

Annex 7 - Abbreviation

ANNEX 1:

Log frame

| LOGFRAME PLANNING MATRIX FOR Project | | Programme name and number | |
|---|---|---|--|
| Strengthening of surface water monitoring network | | Contracting period expires 30.11.2008 | End of execution of contract: 30.11.2009 |
| | | Total budget : € 5 million | Phare budget : € 3,925 million |
| Overall objective | Objectively Verifiable Indicators | Sources of Verification | |
| Implementation of WFD 2000/60/EC requirements related to monitoring of surface water bodies | <ul style="list-style-type: none"> • To upgrade monitoring network to meet new specific requirements of WFD for surface Water – to be implement by the end of 2007 • Equipment supplied and in operation to ensure monitoring of physico-chemical and biological parameters - by the first quarter of 2008 • Administrative capacity in place (trained and equipped) by the end of the project for the operation and further | <ul style="list-style-type: none"> • National State of the Environment Report • River Basin Directorates Reports • Official Journal • National Statistics | |

| | | | |
|---|--|--|--|
| | revision of the monitoring | | |
| Project purpose | Objectively Verifiable Indicators | Sources of Verification | Assumptions |
| <ul style="list-style-type: none"> Strengthening the national surface water monitoring systems ensuring that adequate monitoring is performed and the results are fed into the process of preparing and updating the Programme of measures and the River Basin Management Plans for all 4 River Basin Directorates in Bulgaria (article 8 WFD) | <ul style="list-style-type: none"> EEA and RBD collect sufficient and reliable data for water management planning - in the course of the implementation of the project in order to ensure the smooth implementation of the activities To ensure that the development of River Basin Management Plans proceeds following the deadlines set in the WFD after the completion of the project - by the middle of 2008 | <ul style="list-style-type: none"> DG Environment Reports RBD-s reports MOEW reports | <ul style="list-style-type: none"> compliance with requirements and standards relating to water monitoring |
| Results | Objectively Verifiable Indicators | Sources of Verification | Assumptions |
| <ul style="list-style-type: none"> Upgrade national Surface water monitoring system to meet specific requirements of WFD MOEW, EEA and RBD equipped and staff trained to follow requirements of directive 2000/60/EC for monitoring, analysis and assessment of surface water bodies Administrative capacity in place for | <ul style="list-style-type: none"> The monitoring network meets the technical specifications by the dates of supply (article 8.3 WFD) Staff in MOEW, RBD, EEA responsible for the water monitoring understand requirements of relevant directives - by the completion of the relevant activities Laboratories equipped - by | <ul style="list-style-type: none"> Technical assistance reports Monitoring by Delegation MOEW records DG Environment reports | <ul style="list-style-type: none"> Support from and common activities with other relevant institutions compliance with requirements and standards relating to water monitoring |

| | | | |
|--|--|--|--|
| the operation and further development of monitoring network in according to WFD requirements | the end of the first quarter of 2008 | | |
| Activities | Means | | Assumptions |
| <p>Twinning component</p> <ul style="list-style-type: none"> Assessment of capacity of MOEW, EEA and RBD staff for implementation new approaches for preparation of Monitoring programmes Training for staff in MOEW, EEA and BD-s for European standardised methods for monitoring and analysis (Article 8.3 WFD) and preparation of surveillance and operational monitoring programmes <p>Equipment supply component</p> <ul style="list-style-type: none"> Assess and identify existing equipment and specify and confirm needs of new sampling and monitoring equipment and appliances Providing the equipment for data analysis and management for physico-chemical, biological parameters and priority substances according to WFD (Article 8.3 WFD) | <ul style="list-style-type: none"> Twinning contract Purchase of equipment <ul style="list-style-type: none"> Twinning contract Purchase of equipment | | <ul style="list-style-type: none"> Effective co-operation with other institutions (e.g. HIMH, academic, industry) who have capacities in water activities or monitoring Effective coordination with and participation in the development of standardised methods at EU level for analysis and monitoring of water status |

- Manage the process of develop connection to exchange information and incorporate data in the river basin management planning

| | | |
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| | | |
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ANNEX 2 Detailed implementation chart

| | 2006 | | | | 2007 | | | | 2008 | | | |
|------------------------|-------------|----|----|----|------------------|----|----|----|------------|----|----|----|
| | 1q | 2q | 3q | 4q | 1q | 2q | 3q | 4q | 1q | 2q | 3q | 4q |
| 1. Twinning | | | | T | C | I | I | I | I | I | E | |
| 2. Supply of equipment | | | | T | C | I | I | I | I | I | E | |
| | T-Tendering | | | | I-Implementation | | | | E - ending | | | |

ANNEX 3: Contracting and disbursement schedule by quarter

| Cumulative contracting schedule by quarter in M Euro | | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|
| | 2007 | | | | 2008 | | | |
| | 1q | 2q | 3q | 4q | 1q | 2q | 3q | 4q |
| | | | | | | | | |
| Twinning contract | 0.700 | 0.700 | 0.700 | 0.700 | 0.700 | 0.700 | 0.700 | 0.700 |
| Supply contract | 4.300 | 4.300 | 4.300 | 4.300 | 4.300 | 4.300 | 4.300 | 4.300 |
| Total contracted: | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 |
| Cumulative disbursement schedule by quarter in M Euro | | | | | | | | |
| | | | | | | | | |
| Twinning contract | 0.560 | 0.560 | 0.560 | 0.560 | 0.560 | 0.560 | 0.700 | 0.700 |
| Supply contract | 2.580 | 2.580 | 2.580 | 2.580 | 3.870 | 3.870 | 3.8700 | 4.300 |
| Total disbursed: | 3.140 | 3.140 | 3.140 | 3.140 | 4.430 | 4.430 | 4.430 | 5.000 |

ANNEX 4 Executive summaries of economic and financial appraisals

Investment support for 2007

| Item | For measurement of parameters of the WFD | Unit price | Number of units | Total |
|------------------------------|--|------------|-----------------|---------|
| 1. Mobile vehicle – mini bus | Mobile vehicle – mini bus, laboratory for measuring on situation | 40 000 | 5 | 200 000 |

| | | | | |
|--|---|---------|----|-----------|
| 2. Automatic monitoring stations | For quality and quantity measurements; early warning system for flood and incidental pollution | 120 000 | 24 | 2 880 000 |
| 3. Total organic carbon system | <p>Measurement method: thermocatalytic digestion or combustion catalytic oxidation/NDIR method</p> <p>Measured items: TC, IC, TOC, NPOC</p> <p>Applicable samples: Aqueous samples, Solid samples</p> <p>Min. Detection limit for liquids: 50 µg/L</p> <p>Variable sample Volume</p> <p>Automatic acidification</p> <p>TOC Control Software</p> | 35 000 | 6 | 210 000 |
| 4. Ion Chromatographic system with autosampler for simultaneous determination of anions and cations in water | <p>For all kinds of water according to WFD - nutrients, WFD pollutants</p> <p>Anions: fluoride , chloride, nitrate, nitrite, bromide, phosphate, sulfate, sulfide and cyanide.</p> <p>Cations: lithium, sodium, potassium, magnesium, calcium, barium and ammonium.</p> | 55 000 | 3 | 165 000 |
| 5. Server operational station | with 5 licence positions for each | 55 000 | 6 | 330 000 |
| 6. MW extractor for organic compounds in sediments | For determination of WFD PS--s | 23 000 | 1 | 23 000 |
| 7. Full complete Solid Phase Extraction (SPE) system with different | For concentration and cleaning of waters and sediments | 3000 | 3 | 9 000 |

| | | | | |
|---|---|---------|---|------------------|
| cartridges | | | | |
| 8. ICP-MS | For multi element analysis; for screening of waters and sediments | 150 000 | 3 | 450 000 |
| 9. Referent materials (RM-s) for all substances | For calibration, qualification, calculation | 10 000 | 1 | 10 000 |
| 10. Certified reference materials | | 20 000 | 1 | 20 000 |
| | | | | |
| | Total | | | 4 297 000 |

ANNEX 5: Reference list of relevant laws and regulations

Integrated Water Management as a ruling Principle of the EU WFD was introduced into Bulgarian legislation through the Water Act (1999, come into force in January 2000) and its implementing Regulations:

- Regulation No. 1 of 7 July 2000 on the Exploration, Use and Protection of Groundwater (State Gazette No. 57/14.07.2000 - effective 14.07.2000, corrected, SG No. 64/4.08.2000)
- Regulation No. 2 of 16 October 2000 on the Protection of Waters against Pollution Caused by Nitrates from Agricultural Sources (State Gazette No 57/14.07.2000)
- Regulation No. 3 of 16 October 2000 on the Terms and Procedures for the Exploration, Design, Approval and Operation of Sanitary Protected Areas Around Water Sources and Installations for Drinking and Domestic Water Supply and Around Water Sources of Mineral Waters Used for Therapeutic, Preventive, Drinking and Hygienic Purposes (State Gazette No. 88/27.10.2000)
- Regulation No. 4 of 20 October 2000 on the quality of waters supporting fish and shellfish organisms' life (State Gazette No. 88/27.10.2000)
- Regulation No. 5 of 8 November 2000 on the Procedure and Manner for Establishment of Networks and on the Operation of the National Water Monitoring System (State Gazette No. 95/21.11.2000, effective 21.11.2000)
- Regulation No. 6 of 9 November 2000 on the Limit Values for Admissible Contents of Dangerous and Harmful Substances in the Waste Water Discharged in the Water Bodies Promulgated (State Gazette No. 97/28.11.2000)
- Regulation No. 7 on the Terms and Procedure for Discharge of Industrial Waste Waters into Settlement Sewer Systems Promulgated (State Gazette No. 98/1.12.2000)

- Regulation No. 8 of 25 January 2001 on the quality of coastal marine waters (State Gazette No. 10/2.02.2001)
- Regulation No. 9 of 16 March 2001 on the Quality of Water Intended for Human Consumption (State Gazette No. 30 of 28 May 2001)
- Regulation No. 10 on Issuing Permits for Waste Water Discharge into Water Bodies and Setting Individual Emission Limit Values for Point Sources of Pollution (State Gazette No.66/27.07.2001, effective 27.07.2001)
- Regulation No. 11 of 25 February 2002 on the quality of bathing water (State Gazette No.25/08.03.2002)
- Order No 272 on the categorisation of water sources and water receiving bodies

Annex 6 – Reference list of relevant strategic plans and studies

Strategies and Plans

- National strategy for environment an action plan 2000 - 2006-06-06
- National development plan unit the year 2006 Sector program “Environment”

Sustainable Development

- ISPA Strategy for environment

National Report on Water Management at River-Basin Level in the Republic of Bulgaria – Review of the implementation of the requirements of art.5 and 6 of WFD 2000/60

Annex 7 – Abbreviations

| | |
|--------|--|
| CFCU | Central finance and contract unit |
| DANCEE | Danish Cooperation for environment in Eastern Europe |
| DEPA | Danish Environment Protection Agency |
| EEA | Environment Executive Agency |
| EIONET | European information and observation network |
| EQR | Ecological quality ratio |
| ISO | International Standard Organization |
| MOEW | Ministry of environment and water |
| MoF | Ministry of finance |
| NPAA | National Programme for the adoption of Acquis |
| RBD | River basin district |
| TOR | Term of refernce |
| WFD | Water framework directive |
| WISE | Water information system for Europe |
| TA | Technical assistance |
| TC | Total carbon |
| IC | Inorganic carbon |

| | |
|----------------|--------------------------------|
| TOC | Total organic carbon |
| NDIR method | Non dispersive infrared method |