STANDARD SUMMARY PROJECT FICHE

1. Basic Information

CRIS Number: 2002/000-624-03

Title: Provision of a Waste Water Treatment Plant for Razlog

Sector: EN

Location: Bulgaria – South West Region – Blagoevgrad District

2. Objectives

2.1. Overall Objective


2.2. Purpose of the project

- To construct a WWTP in Razlog in compliance with the EU requirements in the field of wastewater treatment;
- To improve environmental status of water quality in the receiving body;
- To prevent the pollution of the trans-border watercourse of Mesta River and to contribute to the improvement of the water quality.
- To improve the quality of life of Razlog population.

2.3. Accession Partnership and NPAA priority:

- Accession Partnership Medium -Term Priority
  - Complete transposition and implementation of framework and sectoral legislation according to pre-defined timetable.
  - Integrate sustainable development principles into the definition and implementation of all other sectoral policies.

- Accession Partnership Short Term Priority
  - Continue transposition of framework legislation in the water, air and waste sectors, prepare and implement detailed directive specific approximation programmes; strengthen implementation structures, particularly at the regional level.
2.4. Cross Border Impact:

Biala River is a tributary of Mesta River, that is a transboundary River, which starts in Bulgaria and continues into Greece. This requires fulfilment of the commitments resulting from the Convention for protection and use of the transboundary water currents and the international lakes (1992). By improving the water quality in Mesta River, a contribution to the water quality both in Bulgaria and Greece will be achieved. In this way, an alleviation of some of the problems of cross-border friction and pollution will be also achieved.

3. Description

3.1. Background and justification:

The Government of Bulgaria has proposed a number of measures to improve the water quality in the Maritza, Struma and Mesta Rivers, and is implementing the EC Directive No. 91/271 and 76/464, N2000 EEC and the convention of protection and use of transboundary water and international lakes, which was signed in 1992.

As a priority, in the National Program for priority construction of Municipal Waste Water Treatment Plants for settlements with populations in excess of 10,000 equivalent inhabitants, it is proposed to initiate over 36 wastewater treatment plants. Among these Razlog is considered as priority.

Razlog is a small town in south-western Bulgaria, with a population of about 13,000. The present pollution control statistics demonstrate that there is a need to provide wastewater treatment. The projected wastewater increase will lead to a progressively worsening situation and therefore it is necessary to take positive measures to reduce the current level of pollution and to control the future pollution of the Mesta River. The EU Urban Wastewater Directive also requires treatment for wastewater discharges from agglomerations greater than 10,000 people.

This investment is justified by the anticipated benefits to the natural resources development in the Mesta River basin and to the health of the community, as well as to the improvement of agriculture, fishing and property values.

According to the existing classification in Bulgaria, Razlog is a town of the 3rd functional type.

Existing related studies
In 1994 Laboratory investigations of the quantities and pollution of the wastewater from the main industrial facilities were undertaken.

In 1994 a survey of the main (trunk) sewers of the town of Razlog was undertaken. The waste water from the town of Razlog has been treated at the existing “Pirinhart” WWTP. After the privatisation of the “Pirinhart”, the waste water from the town has been discharged directly into the Biala river without previous treatment.

3.2. Linked activities:

- Project 9803-03.02.03 – Preparation of tender dossier for the Waste water treatment plants for Razlog, Blagoevgrad and Pazardjik.
- Project 9904-04.02.03 – Project preparation for the construction of waste water treatment plants in Madan, Rudozem and Zlatograd.
3.3. Results:
- Construction of WWTP in compliance with the EU requirements in the field of wastewater treatment;
- Improved environmental status of cities regions and Mesta River and its tributary Biala;
- Pollution Prevention of the transboundary water current of Mesta River and contribution to the improvement of the water quality.
- The construction of the WWTP, would lead to reduction of the health risk for the people using water downstream of Razlog.

3.4. Activities:

- Development of the activities will be carried out by two contracts which will follow the “Practical Guide to Phare, Ispa & Sapard” contract procedures for Works and Services.
- These contracts will be financed through grants:
  - 75% Phare CBC financial instrument.
  - 25% Bulgarian State Budget.
  - Total budget: 6,4 MEUR.

And they will be as follows:

1. One contract for Supervision of the construction works for Razlog WWTP (estimated budget: 0.83 MEUR)

   The consultant shall perform, as signed in the contract, the vigilance and supervision of the civil works, assembly of equipment and commissioning of Razlog WWTP. A preliminary training to the operating staff of the WWTP will be provided.

   The consultant shall provide the requested services under the contract for the construction works for Razlog WWTP in accordance with the best professional practice. The consultant shall arrange the necessary means to perform the services in the contract, respecting all laws and regulations in force in Bulgaria.

2. One Works Contract (turnkey contract according 1999 FIDIC rules) comprising (estimated budget : 5.57 MEUR)

   - Detailed design of the WWTP for Razlog, based on the results of the Feasibility Study for identification of sensitive areas in Mesta River basin and on the integrated Water Management Plan of Mesta River, shall be prepared by qualified designers who will elaborate the technical documents required and will include:
     1.- Connections to the Main Collector from the town sewer network (trunk sewer, drainage channel, storm water channels, siphon crossing).
     2.- Access road, external water supply, external power supply, administrative and laboratory buildings and other non treatment.
     3.- Waste Water Treatment Plant most efficient option: Extended Aeration technology, as shown in Feasibility Study. This alternative comprises the following main treatment units:

       - **Preliminary Treatment**, comprising coarse and fine matter removal screens and grit removal.
• **Secondary Treatment**, comprising:
  - Aeration tanks in which pre-treated waste water is mixed with activated sludge by brush type aerators, Organic matter and Nitrogenous compounds are oxidised as micro-organisms grow and die. Denitrification will also occur.
  - Final settling tanks where the mixed liquor for the aeration tanks separates into clear supernatant (effluent) and a sediment of sludge solids. A percentage of the sludge is returned to the aeration tank to ensure the optimum concentration of sludge, the remaining sludge will be conveyed to the sludge treatment system.

• **Disinfection**, proposed by the Contractor with the purpose to maintain the polluted adduction to the Mesta river with EC standards.

• **Sludge treatment and disposal system**, comprising Sludge thickening tanks, where the sludge coming from the Secondary Settling Tanks is stirred with a slow rotating picket fence, separating water and sludge. From this point, sludge goes to the Mechanical Dewatering facilities where it is de-watering by Filter Belt Presses. Dewatered sludge is envisaged for use in agriculture.

• Construction of the WWTP for Razlog, including the units described previously and relevant supply and assembly of equipment:
  - Connections to the Main Collector.
  - Access road, external water supply, external power supply, administrative and laboratory buildings and other non treatment works.
  - Waste Water Treatment Plant most efficient option: Extended aeration

4. Institutional Framework

Recipient country – Bulgaria

• **Beneficiary Institution** – Municipality of Razlog, Bulgaria.
• **Project Manager** - will be appointed after successful open International Tender Procedure according to “Practical Guide to Phare, Ispa & Sapard contract procedures”.
• **Contracting Authority** - Ministry of Regional Development and Public Works (MRDPW, hereafter).
• **Owner of the asset after project completion:**
  Municipality of Razlog. The Operators of the WWTP will be the Municipality of Razlog. The regional water Company (Blagoevgrad Water Company) is in charge of calculating water tariffs and implement local “water” policy according to national legislative framework.
5. Detailed Budget, in MEUR

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>Phare support</th>
<th>Total Phare (=I+IB)</th>
<th>National co-financing *)</th>
<th>IFI</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phare support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Investment</td>
<td>Institution Building</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision of WWTP-Razlog and training of the staff</td>
<td>0.63</td>
<td>0.63</td>
<td>0.2</td>
<td>0</td>
<td>0.83</td>
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<tr>
<td>Civil Works of WWTP- Razlog (Final Design + WWTP + Connections+Supply &amp; Assembly of Equipment)</td>
<td>4.17</td>
<td>4.17</td>
<td>1.4</td>
<td>0</td>
<td>5.57</td>
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<tr>
<td>TOTAL:</td>
<td>4.17</td>
<td>0.63</td>
<td>4.80</td>
<td>1.60</td>
<td>6.40</td>
</tr>
</tbody>
</table>

(*)  State Budget

6. Implementation Arrangements

6.1. Implementing Agency

The Project shall be managed under the Decentralised Implementation System (According to Practical Guide). The Bulgaria CBC Implementing Agency is the Ministry of Regional Development and Public Works (MRDPW), which retains overall responsibility for the implementation of the project.

Programme Authorising Officer (PAO) has been nominated for the Programme by the National Authorising Officer (NAO), after consultation with National Aid Coordinator (NAC).

Ministry of Regional Development and Public Works will be responsible towards the CBC Implementing Agency for the operational and technical management of the project: studies, preparation of Terms of reference, Tender Documents, preparation and proceeding of the Tender procedures, evaluation criteria, evaluation of Tenders, award of contracts, invoices for payment, Commissioning and Handing over of the implemented projects, works contract under the “Practical Guide to Phare, Ispa & Sapard contract procedures”. The Head of MRDPW acts as the Contracting Authority and invoices have to be certified by the independent Project manager contracted and financed by the Programme. The Department reports monthly to the CBC Implementing Agency (with direct copies to the EC Delegation) with monthly disbursement and commitment schedules and with sufficient detail to allow assessment of progress made and remaining work to be accomplished. It leases directly with the EC Delegation for all issues related to the operational management of the project. The Department shall be adequately staffed with at least 3 qualified full-time experts.

The Site Supervision of the Project will be selected under the “Practical Guide to Phare, Ispa & Sapard contract procedures” and will be funded by the Programme. Works tender documents will include all required parts depending on availability of funds from other programmes and on satisfactory performance of the contractor with the lots already contracted. Works will be tendered to contractors with relevant financial capacity, and technically experience in such or similar projects and will be also selected under the “Practical Guide to Phare, Ispa & Sapard contract procedures”.

5
The final beneficiary institution is Municipality of Razlog, which will act as an Employer for the works contract. A project implementation unit (PIU) will be established for the purpose of technical implementation of the project.

6.2. Non-standard aspects

_The Practical Guide will be strictly followed._

6.3. Contracts:

I. One (1) Works Contract
   
   Contract - Design and construction of WWTP –Razlog– 5,57 MEUR

III. One (1) Supervision Contract
   
   Contract – Supervision of the construction works for Razlog WWTP – 0.83 MEUR

7. Implementation Schedule

<table>
<thead>
<tr>
<th>Start of tendering</th>
<th>Start of project activities</th>
<th>Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2003</td>
<td>October 2003</td>
<td>November 2006</td>
</tr>
</tbody>
</table>

2 years construction period + 1 year defect liability period

The extensions of disbursement period up to 30 November 2006 is needed to take into account the duration of works (impossibility to work in winter during several months) and the Defect Liability Period of one year after the completion of works.

8. Equal Opportunity

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

9. Environment

   The Municipality of Razlog is in charge of submission to IA the Preliminary EIA Report for selected site for the WWTP in Razlog, approved by Higher Ecological Expert Counsel at the Ministry of Environment and Waters. The EIA has been made by A.C. Alpin on (30 July 2001) The EIA Report is included in Annex 4.

   The construction of the proposed WWTP and its co-operation with the sewerage networks improvements will contribute to pollution prevention of the trans-border water course of Mesta River and its tributary Biala. The reduced health risk for the population living downstream region on both sides of the border is one of the impacts of the expected environmental and social benefits.

10. Rates of return

   _Feasibility Study_: Complete – August 2001
   
   _Title:_ Feasibility Study for Provision of a Waste Water Treatment Plant for Razlog.
   
   _BG 9903-03-02-03_
   
   _Company:_ EPTISA INTERNACIONAL – EGMASA – ABH Consultants Ltd.

   _Financial rate of return:_ 5.41%
   
   _Economic internal rate of return:_ 5.41%
As indicated in the Economic appraisal of the Feasibility Study the appraisal of the viability of the project is based on its direct costs and benefits. Indirect Social and Economic Benefits are listed but not quantified. This is why both the Financial and Economic Rates of Return are identical.

An executive summary of the economic and financial appraisals is included under Annex 4.

11. Investment criteria

11.1. Catalytic effect:

Without Phare assistance, the project would have never taken place due to a lack of funds.

11.2. Co-financing:

The project is co-financed by State Budget, which will provide 25% of the total cost of the project. The Bulgarian part is engaged to provide additional funds to improve the condition of sewerage system in compliance with prescribed measures in feasibility study.

11.3. Additionality:

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

11.4. Project readiness and Size:

The Feasibility Study is complete and the implementation of the project can start according to the implementation chart (Annex 2). The project complies with the 2 MEUR minimum Phare allocation requirement.

11.5. Sustainability:

The financial sustainability of the Project will be ensured through a flexible policy for calculation of the “water tariffs”, to cover the running costs of the already constructed WWTP.

The Operators of the WWTP will be the local branch of the Regional Water Company - Razlog Water Company – which will cover all operational and maintenance costs. The regional water Company is in charge of calculating water tariffs and implementing local water policy according to the national legislative framework. The Project has been appraised on an on-going basis, with full maintenance and asset replacement so that the WWTP will be fully operational at the end of the Analysis Period, 2025.

11.6. Compliance with state aids provisions

The project respects the state aids provisions.
12. Conditionality and sequencing

- Construction of a surface water protection channel.
- Construction of a new drainage channel for transferring Cherna river waters to Biala river.

- Bulgaria undertakes the obligation to cover any additional cost, above the envisaged, necessary for the completion of the whole project during its implementation timeframe.

- If the total cost of the project is greater than the amount envisaged in the project fiche, the extra support required will be provided by additional national co-financing. The additional national co-financing will be provided by:

  - either allocating extra national funds to conclude a contract with the contractor proposed further to the completion of the procurement process following the Practical Guide to Phare, Ispa and Sapard Contract Procedures,

  - or increasing of the cost of the on-going Phare financed contract via an addendum.

- Land acquisition is financed by the Bulgarian authorities. The Bulgarian authorities undertake to notify to the European Commission before the signature of the works contracts that related land acquisitions have been completed.

- The project beneficiaries must have in place an adequate system for controlling the quality of any industrial effluent to be treated at the plant. Pre-treatment must be ensured if necessary, in conformity with Annexe I.C of Directive 271/91

- The project beneficiaries must specify how they will handle and dispose of the sewage sludge to be produced by the plant. In particular, such disposal must comply with Directive 86/278 on use of sewage in agriculture and/or the landfill directive (99/31), as appropriate.

**ANNEXES TO PROJECT FICHE**

1. Logical framework matrix in standard format
2. Detailed implementation chart
3. Contracting and disbursement
4. Reference to feasibility /pre-feasibility studies
### Annex 1: Logframe Matrix for project:

**Provision of a Waste Water Treatment Plant for Razlog**

<table>
<thead>
<tr>
<th>Overall objective</th>
<th>Indicators of Achievement</th>
<th>Sources of Information</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>To improve the water quality in Iztok and Biala Rivers (Mesta River tributary) in respect of EC Directive N 91/271EEC concerning urban wastewater treatment; EC Directive 76/464 EEC on the pollution of waters with hazardous substances and its daughter directives; Directive 2000/EEC for establishing of framework for Community action in the field of water policy; Convention on protection and use of the transboundary water currents and the international lakes signed on 92/13.03.1992 with a decision of the Council of Ministries.</td>
<td>Correspondence with EU requirements and regulations</td>
<td>National and international statistics</td>
<td>Bulgarian Government continues its commitment in transposing EC Directives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project purpose</th>
<th>Indicators of Achievements</th>
<th>Sources of Information</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>To construct a WWTP in Razlog in compliance with the EU requirements in the field of wastewater treatment; To improve environmental status of water quality in the receiving body; To prevent the pollution of the trans-border watercourse of Mesta River and to contribute to the improvement of the water quality. To improve the quality of life of Razlog population</td>
<td>BOD levels bellow 25 mg/l COD levels bellow 125 mg/l SS levels below 35 mg/l in the receiving body</td>
<td>Laboratory tests users</td>
<td>Economic growth in other sectors Bulgarian Government continues its current commitment to reform and to accession to the European Union</td>
</tr>
<tr>
<td>Results</td>
<td>Indicators of Achievement</td>
<td>Sources of Information</td>
<td>Assumptions</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
<td>------------------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| • Constructed WWTP in compliance with the EU requirements in the field of wastewater treatment;  
• Improved environmental status of Biala and Mesta Rivers.  
• Pollution Prevention of the trans–border watercourse of Mesta River and contribution to the improvement of the water quality. | • Taking over certificates | • MRDPW  
• Resident Engineers  
• Contractors | • Most of constructions do not exceed cost estimates and no major contingency during construction |

<table>
<thead>
<tr>
<th>Activities</th>
<th>Means</th>
<th>Assumptions</th>
</tr>
</thead>
</table>
| I Contract:  
• preparation of detailed design an for Razlog WWTP  
• supply and assembly of the equipment for the work of Razlog WWTP  
• commissioning of the Razlog WWTP, including training of operations staff;  
II Contract:  
• supervision of the construction works for Razlog WWTP | • reports issued by MRDPW, MoEW, Resident Engineers, Contractors  
• MRDPW bank statements | • Land acquisition completed  
• Continuity of staff and policy in MRDPW enabling implementation of the project without delays  
• Effective project Engineer  
• Capable Contractors |
## Annex 2 – Detailed implementation chart

<table>
<thead>
<tr>
<th>Components</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tendering/Contracting Works</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>2. Preparation of the WWTP detailed designs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Construction of Razlog WWTP Civil Works</td>
<td></td>
<td></td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>4. Supply and Assembly of equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Tendering/Contracting Services</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>6. Supervision of works for WWTP Razlog</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
</tbody>
</table>

*D= Design/Tender preparation  T=Tendering  C= Contracting  I= Implementation/works  R = Review/evaluation...DL=Defect liability*
Annex 3 – Contracting and disbursement schedule by quarter

*Provision of a Waste Water Treatment Plant for Razlog*

### Cumulative contracting schedule by quarter in MEUR

<table>
<thead>
<tr>
<th>Components</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>Total Phare Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>III</td>
<td>IV</td>
<td>I</td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>1. Supervision of works for WWTP Razlog</td>
<td>0.63</td>
<td>0.63</td>
<td>0.63</td>
<td>0.63</td>
<td>0.63</td>
</tr>
<tr>
<td><strong>Total contracting:</strong></td>
<td><strong>4.80</strong></td>
<td><strong>4.80</strong></td>
<td><strong>4.80</strong></td>
<td><strong>4.80</strong></td>
<td><strong>4.80</strong></td>
</tr>
</tbody>
</table>

### Cumulative disbursement schedule by quarter in MEUR

<table>
<thead>
<tr>
<th>Components</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>Total Phare Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>III</td>
<td>IV</td>
<td>I</td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>1. Supervision of works for WWTP Razlog</td>
<td>0.09</td>
<td>0.180</td>
<td>0.270</td>
<td>0.36</td>
<td>0.45</td>
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<tr>
<td>2. Civil Works of WWTP-Razlog (Final Design + WWTP + Connections+Supply &amp; Assembly of Equipment)</td>
<td>0.075</td>
<td>0.150</td>
<td>0.576</td>
<td>1.002</td>
<td>1.428</td>
</tr>
<tr>
<td><strong>Total disbursement:</strong></td>
<td><strong>4.703</strong></td>
<td><strong>4.80</strong></td>
<td><strong>4.80</strong></td>
<td><strong>4.80</strong></td>
<td><strong>4.80</strong></td>
</tr>
</tbody>
</table>
Annex 4. Provision of a Waste Water Treatment Plant for Razlog

Executive Summary of the Economic and Financial appraisals.

Table 1.
Projected Population, Water Consumption and Wastewater Treatment for the period 2000-2025. (Population in units; Water Consumed and Treated in m3 per annum)

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Water Consumption</th>
<th>Wastewater Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>13.065</td>
<td>2.088</td>
<td>1.879</td>
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<tr>
<td>2005</td>
<td>13.388</td>
<td>2.272</td>
<td>2.044</td>
</tr>
<tr>
<td>2010</td>
<td>13.719</td>
<td>2.329</td>
<td>2.096</td>
</tr>
<tr>
<td>2015</td>
<td>14.249</td>
<td>2.421</td>
<td>2.179</td>
</tr>
<tr>
<td>2020</td>
<td>14.799</td>
<td>2.516</td>
<td>2.264</td>
</tr>
<tr>
<td>2025</td>
<td>15.370</td>
<td>2.615</td>
<td>2.353</td>
</tr>
</tbody>
</table>

Table 2.
Summary of Project Costs. (Figures in MEUR)

CIVIL WORKS OF WWTP- RAZLOG
(FINAL DESIGN+ WWTP + CONNECTIONS+
SUPPLY & ASSEMBLY OF EQUIPMENT) 5,570
SUPERVISION 0,830
TOTAL CAPITAL OUTLAYS: 6,400

Table 3.
Summary of Plant Operating Costs (Figures in MEUR)

FULL MAINTENANCE 0,345
LABOUR COSTS 0,082
COST OF GOODS 0,066
TRANSPORT AND SLUDGE DISPOSAL 0,017
ENERGY COSTS 0,129

TOTAL OPERATING COSTS 0,639

Project Feasibility Analysis

The data summarised in the preceding tables has been downloaded into an analytical Input/Output (Cost/Benefit) Model with the additional input of an estimated reasonable “Test Tariff” established on the basis of a survey of current tariffs in Bulgaria at 25 Eurocents per m3 treated. Collection Efficiency has been estimated at 77%, slightly below the historical 85%. Results show a positive Net Present Value of 1,29 MEUR and an Internal Rate of Return of a positive 5,41%.

Maximum Sustainable Debt under observed parameters is calculated at a low 0,66 MEUR. This shows that whilst the project at a reasonable tariff level is clearly viable and sustainable on account of the fact that full maintenance and replacement of the Asset Base is assumed under the calculation model, it would not be financed on a commercial debt basis requiring for its implementation the full support of the CBC Finance Instrument..