

DANUBE POLLUTION REDUCTION PROGRAMME

**NATIONAL REVIEWS 1998
BOSNIA AND HERZEGOVINA**

PROJECT FILES



**Ministry of Agriculture,
Water Management and Forestry**

in cooperation with the

**Programme Coordination Unit
UNDP/GEF Assistance**



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Preface

The National Reviews were designed to produce basic data and information for the elaboration of the Pollution Reduction Programme (PRP), the Transboundary Analysis and the revision of the Strategic Action Plan of the International Commission for the Protection of the Danube River (ICPDR). Particular attention was also given to collect data and information for specific purposes concerning the development of the Danube Water Quality Model, the identification and evaluation of hot spots, the analysis of social and economic factors, the preparation of an investment portfolio and the development of financing mechanisms for the implementation of the ICPDR Action Plan.

For the elaboration of the National Reviews, a team of national experts was recruited in each of the participating countries for a period of one to four months covering the following positions:

- Socio-economist with knowledge in population studies,
- Financial expert (preferably from the Ministry of Finance),
- Water Quality Data expert/information specialist,
- Water Engineering expert with knowledge in project development.

Each of the experts had to organize his or her work under the supervision of the respective Country Programme Coordinator and with the guidance of a team of International Consultants. The tasks were laid out in specific Terms of Reference.

At a Regional Workshop in Budapest from 27 to 29 January 1998, the national teams and the group of international consultants discussed in detail the methodological approach and the content of the National Reviews to assure coherence of results. Practical work at the national level started in March/April 1998 and results were submitted between May and October 1998. After revision by the international expert team, the different reports have been finalized and are now presented in the following volumes:

Volume 1:	Summary Report
Volume 2:	Project Files
Volume 3 and 4:	Technical reports containing: <ul style="list-style-type: none">- Part A : Social and Economic Analysis- Part B : Financing Mechanisms- Part C : Water Quality- Part D : Water Environmental Engineering

In the frame of national planning activities of the Pollution Reduction Programme, the results of the National Reviews provided adequate documentation for the conducting of National Planning Workshops and actually constitute a base of information for the national planning and decision making process.

Further, the basic data, as collected and analyzed in the frame of the National Reviews, will be compiled and integrated into the ICPDR Information System, which should be operational by the end of 1999. This will improve the ability to further update and access National Reviews data which are expected to be collected periodically by the participating countries, thereby constituting a consistently updated planning and decision making tool for the ICPDR.

UNDP/GEF provided technical and financial support to elaborate the National Reviews. Governments of participating Countries in the Danube River basin have actively participated with professional expertise, compiling and analyzing essential data and information, and by providing financial contributions to reach the achieved results.

The National Reviews Reports were prepared under the guidance of the UNDP/GEF team of experts and consultants of the Danube Programme Coordination Unit (DPCU) in Vienna, Austria. The conceptual preparation and organization of activities was carried out by **Mr. Joachim Bendow**, UNDP/GEF Project Manager, and special tasks were assigned to the following staff members:

- Social and Economic Analysis and Financing Mechanisms: **Reinhard Wanninger**, Consultant
- Water Quality Data: **Donald Graybill**, Consultant,
- Water Engineering and Project Files: **Rolf Niemeyer**, Consultant
- Coordination and follow up: **Andy Garner**, UNDP/GEF Environmental Specialist

The **Bosnian National Reviews** were prepared under the supervision of the Country Programme Coordinator, **Mr. Mehmed Saric**. The authors of the respective parts of the report are:

- Part A: Social and Economic Analysis: **Mr. Osman Slipicevic**
- Part B: Financing Mechanisms: **Mr. I. Sofovic**
- Part C: Water Quality: **Mr. M. Bezdrob**
- Part D: Water Environmental Engineering: **Mr. A. Novalija**

The findings, interpretation and conclusions expressed in this publication are entirely those of the authors and should not be attributed in any manner to the UNDP/GEF and its affiliated organizations.

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Vienna – Austria, November 1998

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Project 1 – Municipality

**Construction of Regional Sewerage System
Tuzla-Lukavac with Central Wastewater
Treatment Plant for Cities and Industry**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of regional sewerage system Tuzla-Lukavac with central wastewater treatment plant for cities and industry.

Responsible/Legal Body

Authority/Company Tuzla-Podrinje Canton

Name Mr. Safet Husanovi }

Address municipality Tuzla

Telephone ++387 75 241536

Fax ++387 75 241536

e-mail

Project Target In common communal and industry wastewater treatment plant. Reduction of high pollution r. Jala and Spreca tributary of r. Bosna

Investment Costs 58.000.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Construction of regional sewerage system Tuzla-Lukavac with central wastewater treatment plant for cities and industry.

2. Investor Details

2.1. Authority/Company

Name: PU "Vodovod i kanalizacija" Tuzla

Address: Tuzla

Telephone: ++387 75 252209

Fax: ++387 75 250402

E-mail:

2.2. Contact Persons

Mr. Petar Tomic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public authority enterprise Waterworks and Sewerage Tuzla

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

Number of persons employed: 204

Annual budget: 11.600.000 KM (cca. 6.820.000 US\$)

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Tuzla and Lukavac

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Lukavac. Construction 16 Km collecting systems. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity of Central wastewater treatment plant is 1.000.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Jala and river Spreca tributary of river Bosnia.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and finally sludge dewatering.

3.5. Ownership of Project Site

SODASO Holding d.d. Tuzla

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Tuzla.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality/Receptor

The recipient for the treated wastewater is river Jala, which flows from 90 l/sec. River Jala is now industry channel wastewater without life.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 58.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 205.000 US\$
- for maintenance 380.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 2 – Municipality

**Rehabilitation and Reconstruction of Sewerage
and Industry Wastewater Treatment Plant of
City Sarajevo**

Date of first setting up:

Date of latest upgrade:

Project Title Rehabilitation and reconstruction of sewerage and industry wastewater treatment plant of city Sarajevo

Responsible/Legal Body

Authority/Company Canton Sarajevo

Name Mr. Munib Buljina

Address Sarajevo

Telephone ++387 71 668509

Fax ++387 71 207171

e-mail

Project Target Reduction pollution of river Bosna from sewerage and wastewater from municipal and industry sectors of Sarajevo

Investment Costs 15.000.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Ongoing project

Language of Project Documents Bosnian

1. Project Title

Rehabilitation and reconstruction of sewerage and industry waste water treatment plant of city Sarajevo.

2. Investor Details

2.1. Authority/Company

Name: Public Communal Utility “Vodovod i Kanalizacija” Sarajevo

Address: Sarajevo

Telephone: ++387 71 668260

Fax: ++387 71 668258

E-mail:

2.2. Contact Persons

Mr. Zulfikar Drace

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B.Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public company with limited responsibilities

2.5. Authority/Company Profile

Water supply, wastewater disposal, water distribution; wastewater treatment

Number of persons employed: 1000

Annual budget 17.650.000 US \$

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning (design) capacities, or implementing capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water management Enterprise Bosnia and Herzegovina, Sarajevo

Municipality of Donji Vakuf, Bugojno, Gornji Vakuf

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Sarajevo. Rehabilitation of central wastewater plant from war activity in Bosnia. Construction of new technological line in the plant with modern equipment. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity of Central wastewater treatment plant is 1.000.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Miljatska tributary of r. Bosna. Also protection of sources water for drinking and underground water near Sarajevo.

3.3. Status of Project Preparation

Finished study on expectation funding.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

K.P.C.U. "Vodovod i kanalizacija" Sarajevo

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in the city of Sarajevo.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Bosna.

4.4. Primary Effects of Project

Reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well. Protection of underground water and many sources of potable water.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 15.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 65.000 US\$
- for maintenance 100.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/ m³ wastewater)

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 3 – Municipality

**Construction of Sewerage System Banja Luka
with Central Wastewater Treatment Plant for
City and Industry**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of sewerage system Banja Luka with central wastewater treatment plant for city and industry

Responsible/Legal Body

Authority/Company Republic Committee of Water Republic Srpska

Name Dr. sci. Borislav Jaksic

Address Banja Luka

Telephone ++387 58 42058

Fax ++387 58 42058

e-mail

Project Target Reduction of pollution of river Vrbas from sewerage and wastewater for municipal and industrial sectors of Banja Luka

Investment Costs 50.000.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Construction of sewerage system Banja Luka with central wastewater treatment plant for city and industry

2. Investor Details

2.1. Authority/Company

Name: P.C.U. “Vodovod i Kanalizacija” Banja Luka

Address: Banja Luka

Telephone: ++387 58 12316

Fax: ++387 58 12316

E-mail:

2.2. Contact Persons

Mr. Mile Predojevic

2.3. Advisor/Consultant

Republic Committee of Water Republic Srpska

2.4. Legal/Financial Status

Public authority enterprise Waterworks and Sewerage Banja Luka

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

Number of persons employed: no data

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

City Council of Banja Luka

Republic Committee of Water Republic Srpska, Banja Luka

3. Project Description

3.1. Project Outline

Central wastewater treatment plant for city Banja Luka. Construction of about 50 Km collecting systems. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity of Central wastewater treatment plant is 300.000 p.e. In this case wastewater from pulp mill factory is not included.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Vrbas.

3.3. Status of Project Preparation

Prefeasibility study is in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

Council of city Banja Luka.

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region in Middle Bosnia.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality/Receptor

The recipient for the treated wastewater is river Vrbas.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 50.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 200.000 US\$
- for maintenance 300.000 US\$

6.3. Estimate of Revenues

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 4 – Municipality

**Construction of Regional Sewerage System
Gornji Vakuf – Bugojno – Donji Vakuf with
Central Wastewater Treatment Plant for Cities
and Industry**

Date of first setting up:

Date of latest upgrade:

Project Title

Construction of regional sewerage system Gornji Vakuf – Bugojno – Donji Vakuf with central wastewater treatment plant for cities and industry.

Responsible/Legal Body**Authority/Company**

Middle Bosnia Canton

Name

Mr. Mustafa Zeevi

Address

Travnik

Telephone

++387 72 811338

Fax

++387 72 811338

e-mail**Project Target**

Reduction of pollution of river Vrbas from sewerage and wastewater for municipal and industrial sectors in the Middle Bosnia

Investment Costs

18.500.000 US \$

Status of Project**Ongoing/Planned Project,
Emerging Concept**

Planned project

**Language of Project
Documents**

Bosnian

1. Project Title

Construction of regional sewerage system Gornji Vakuf – Bugojno – Donji Vakuf with central wastewater treatment plant for cities and industry.

2. Investor Details

2.1. Authority/Company

Name: Municipality Donji Vakuf and P.C.U. "Gradina" D. Vakuf

Address: Donji Vakuf

Telephone: ++387 70 22991

Fax: ++387 70 22991

E-mail:

2.2. Contact Persons

Mr. Sead Omeragic, manager PCU "Gradina" D. Vakuf

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public authority enterprise Waterworks and Sewerage Sarajevo

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

Number of persons employed: 30

Annual budget: 1.650.000 US\$

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

Municipality of Donji Vakuf, Bugojno, Gornji Vakuf

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Donji Vakuf. Construction of 30 Km collecting systems. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity Central wastewater treatment plant is 100.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Vrbas.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and finally sludge dewatering.

3.5. Ownership of Project Site

City Council of D. Vakuf

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region in the Middle Bosnia.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Vrbas.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 18.500.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 85.000 US\$
- for maintenance 135.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/ m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 5 – Municipality

**Construction of Regional Sewerage System
Sarajevo – Visoko with Central Wastewater
Treatment Plant near Visoko for Cities and
Industry**

Date of first setting up:

Date of latest upgrade:

Project Title

Construction of regional sewerage system Sarajevo – Visoko with central wastewater treatment plant near Visoko for cities and industry.

Responsible/Legal Body**Authority/Company**

Canton Sarajevo and Zenica-Doboj Canton

Name

Mr. Munib Buljina

Address

Sarajevo

Telephone

++387 75 241536

Fax

++387 75 241536

e-mail**Project Target**Common communal and industry wastewater treatment plant.
Reduction of high pollution r. Bosna**Investment Costs**

28.500.000 US\$

Status of Project**Ongoing/Planned Project,
Emerging Concept**

Planned project

**Language of Project
Documents**

Bosnian

1. Project Title

Construction of regional sewerage system Sarajevo – Visoko with central wastewater treatment plant near Visoko for cities and industry.

2. Investor Details

2.1. Authority/Company

Name: PU "Vodovod i kanalizacija" Sarajevo

Address: Sarajevo

Telephone: ++387 71 668260

Fax: ++387 71 668258

E-mail:

2.2. Contact Persons

Mr. Zulfikar Drace higher advisor Public Utility Waterworks and Sewerage City of Sarajevo

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B.Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public authority Enterprise Waterworks and Sewerage Sarajevo

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

Number of persons employed: 1000

Annual budget: 17.650.000 US\$

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Sarajevo and Visoko

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Visoko. Construction 17 Km collecting systems. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity Central wastewater treatment plant is 180.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Bosna.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and finally sludge dewatering.

3.5. Ownership of Project Site

P.W.U "Vodoprivreda BiH" Sarajevo

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Visoko.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality/Receptor

The recipient for the treated wastewater is river Bosna.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 28.500.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 114.000 US\$
- for maintenance 171.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/ m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 6 – Municipality

**Construction of Regional Sewerage System
Travnik – Vitez with Central Wastewater
Treatment Plant near Vitez for Cities and
Industry**

Date of first setting up:

Date of latest upgrade:

Project Title

Construction of regional sewerage system Travnik – Vitez with central wastewater treatment plant near Vitez for cities and industry.

Responsible/Legal Body**Authority/Company**

Middle Bosnia Canton

Name

Mr. Mustafa Zecevic

Address

Travnik

Telephone

++387 72 811338

Fax

++387 72 811338

e-mail**Project Target**

Common communal and industry wastewater treatment plant. Reduction of high pollution to r. Lasva tributary of r. Bosna

Investment Costs

10.000.000 US\$

Status of Project**Ongoing/Planned Project,
Emerging Concept**

Planned project

**Language of Project
Documents**

Bosnian

1. Project Title

Construction of regional sewerage system Travnik – Vitez with central wastewater treatment plant near Vitez for cities and industry.

2. Investor Details

2.1. Authority/Company

Name: PU "Basbunar" Travnik

Address: Travnik

Telephone: ++387 72 811688

Fax: ++387 72 811345

E-mail:

2.2. Contact Persons

Mr. Muhedin Terzic, vice manager Public Utility "Basbunar"

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public authority enterprise Waterworks and Sewerage Travnik

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

Number of persons employed: 180

Annual budget: 3.600.000 US\$

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Travnik

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Vitez. Construction 17 Km collecting systems. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity Central wastewater treatment plant is 70.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Lasva tributary of river Bosna.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

Municipalities Travnik and Vitez

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region Travnik-Vitez

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality/Receptor

The recipient for the treated wastewater is river Lasva.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 10.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 60.000 US\$
- for maintenance 90.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/ m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 7 – Municipality

**Construction of Collecting System Pliva – Jajce
with Central Wastewater Treatment Plant**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of collecting system Pliva – Jajce with central wastewater treatment plant.

Responsible/Legal Body

Authority/Company Middle Bosnia Canton

Name Mr. Mustafa Zecevic

Address Travnik

Telephone ++387 72 811338

Fax ++387 72 811338

e-mail

Project Target Common communal and industry wastewater treatment plant. Reduction pollution and protection lake Pliva, tributary of r. Vrbas

Investment Costs 6.050.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Construction of collecting system Pliva – Jajce with central wastewater treatment plant.

2. Investor Details

2.1. Authority/Company

Name: Municipality Jajce and PU "Komunalac" Jajce

Address: Jajce

Telephone: ++387 80 658033

Fax: ++387 80 659350

E-mail:

2.2. Contact Persons

Mr. Ljubo Lovric

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public authority enterprise Waterworks and Sewerage Jajce

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

Number of persons employed: 50

Annual budget: 1.600.000 US\$

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Jajce

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Jajce. Construction of 25 Km collecting systems. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity Central wastewater treatment plant is 60.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Vrbas.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

City council of Jajce

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in area of Jajce.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Vrbas.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well. Protection of lake Pliva.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 6.050.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 40.200 US\$
- for maintenance 56.600 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 8 – Municipality

**Construction of Sewerage System Zenica with
Central Wastewater Treatment Plant for City
and Industry**

Date of first setting up:

Date of latest upgrade:

Project Title

Construction of sewerage system Zenica with central wastewater treatment plant for city and industry.

Responsible/Legal Body**Authority/Company**

Zenica - Dobojski Canton

Name

Mr. Muhamed Begagic

Address

Zenica

Telephone

++387 72 21732

Fax

++387 72 416771

e-mail**Project Target**Common communal and industry wastewater treatment plant.
Reduction of high pollution of r. Bosna**Investment Costs**

24.000.000 US\$

Status of Project**Ongoing/Planned Project,
Emerging Concept**

Planned project

**Language of Project
Documents**

Bosnian

1. Project Title

Construction of sewerage system Zenica with central wastewater treatment plant for city and industry.

2. Investor Details

2.1. Authority/Company

Name: PU "Vodovod i kanalizacija" Zenica

Address: Zenica

Telephone: ++387 72 22481

Fax: ++387 72 22481

E-mail:

2.2. Contact Persons

Mr. Ismet Jasic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public authority enterprise Waterworks and Sewerage Zenica

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

Number of persons employed: 170

Annual budget: 9.500.000 KM (cca. 5.650.000 US\$)

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Zenica

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo.

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Zenica. Construction of 100 Km collecting systems. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity of Central wastewater treatment plant is 250.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Bosna.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

Municipality council of Zenica

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Zenica.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality/Receptor

The recipient for the treated wastewater is river Bosna

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 24.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 110.000 US\$
- for maintenance 154.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 9 – Municipality

**Construction of Sewerage System Bijeljina with
Central Wastewater Treatment Plant for City
and Industry**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of sewerage system Bijeljina with central wastewater treatment plant for city and industry.

Responsible/Legal Body

Authority/Company Republic Committee for Water of Republic Srpska

Name Dr. sci. Borislav Jaksic

Address Banja Luka

Telephone ++387 58 42058

Fax ++387 58 42058

e-mail

Project Target Construction of sewerage system in the city Bijeljina and wastewater treatment plant.

Investment Costs 12.000.000 US\$

Status of Project

**Ongoing/Planned Project,
Emerging Concept** Planned project

**Language of Project
Documents** Bosnian

1. Project Title

Construction of sewerage system Bijeljina with central wastewater treatment plant for city and industry.

2. Investor Details

2.1. Authority/Company

Name: PU "Vodovod i kanalizacija" Bijeljina

Address: Bijeljina

Telephone:

Fax:

E-mail:

2.2. Contact Persons

Dr. Borislav Jaksic

2.3. Advisor/Consultant

Republic Committee for Water RS

2.4. Legal/Financial Status

No data.

2.5. Authority/Company Profile

Water supply, wastewater treatment, sewerage, water protection, water resource, water management.

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water of Republic Srpska, Banja Luka

3. Project Description

3.1. Project Outline

Central wastewater treatment plant near city Bijeljina. Construction of 70 Km collecting systems of city Bijeljina. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. Capacity Central wastewater treatment plant is 60.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution of underground water and river Sava.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and finally sludge dewatering.

3.5. Ownership of Project Site

Republic Committee for Water RS

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Bijeljina.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is channel Dasnica, which is tributary r. Sava

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 12.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 56.000 US\$
- for maintenance 100.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water.

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 1 – Industry

**Reconstruction of Wastewater Pre-treatment
Plant in Chlorine Alkaline Complex in Tuzla**

Date of first setting up:

Date of latest upgrade:

Project Title Reconstruction of wastewater pre-treatment plant in Chlorine Alkaline Complex in Tuzla

Responsible/Legal Body

Authority/Company SODASO Holding DD

Name Dr. sci. Esad Zunic

Address Tuzla, Slatina 2

Telephone ++387 75 280372

Fax ++387 75 281398

e-mail

Project Target Reduction of toxic compounds in the industry wastewater and reduction of load pollution before the connection into sewer

Investment Costs 2.200.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Reconstruction of wastewater pre-treatment plant in “Chlorine Alkaline Complex“ Tuzla

2. Investor Details

2.1. Authority/Company

Name: DD “Polihem” Tuzla

Address: Tuzla

Telephone: ++387 75 280139

Fax: ++387 75 280139

E-mail:

2.2. Contact Persons

Mr. Nazif Imamovic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

Institute of Chemistry Engineering Tuzla

Dr. sci. Mevlida Kunosic-Vlajic, manager, phone ++387 75 280450

2.4. Legal/Financial Status

Stock Company in SODASO holding

2.5. Authority/Company Profile

Chemistry industry on the basis salt. Production chlorine and derivative from chlorine.

Number of persons employed: 1300

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Tuzla

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Improvement of systems of pre-treatment plant in the factories “Polihem”, “Izohem” and “Dita”.

3.2. Primary Needs for the Project

The main aim of the project is reduction of the pollution in river Jala and river Spreca tributary of river Bosnia.

3.3. Status of Project Preparation

Feasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-chemical treatment of wastewater.

3.5. Ownership of Project Site

SODASO Holding d.d. Tuzla

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Tuzla.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Jala, which flows from 90 l/sec, River Jala is now industry channel wastewater without life.

4.4. Primary Effects of Project

The project could be characterized as a project of municipality level of importance.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 2.200.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 16.000 US\$
- for maintenance 24 000.US\$

6.3. Estimate of Revenues

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 2 – Industry

**Reconstruction of Wastewater Pre-treatment
Plant in Coke Chemical Combine Lukavac**

Date of first setting up:

Date of latest upgrade:

Project Title Reconstruction of wastewater pre-treatment plant in Coke Chemical Combine Lukavac

Responsible/Legal Body

Authority/Company KHK (Koksno Hemijski Kombinat) Lukavac

Name Mr. Faik Buevac

Address Lukavac

Telephone ++387 75 283048

Fax ++387 75 281390

e-mail

Project Target Reduction of toxic compounds in the industry wastewater and reduction of load pollution before connection into the river Spreca.

Investment Costs 2.800.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Reconstruction of wastewater pre-treatment plant in Coke Chemical Combine Lukavac

2. Investor Details

2.1. Authority/Company

Name: KHK (Koksno Hemijski Kombinat) Lukavac

Address: Lukavac

Telephone: ++387 75 283048

Fax: ++387 75 281390

E-mail:

2.2. Contact Persons

Mr. Faik Buevac

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Chemical company with limited responsibilities.

2.5. Authority/Company Profile

Chemical factory, production of coke and another chemical compounds.

Number of persons employed: 1800

Annual budget: 200.000.000 US\$ (before War 1992)

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Lukavac

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Industrial wastewater treatment plant in the Combine KHK Lukavac. Treatment plant has primary and secondary treatment with sludge treatment.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Spreca tributary of river Bosnia.

3.3. Status of Project Preparation

Feasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-chemical treatment with stabilization of the sludge. Separated gases out of water are burned up.

3.5. Ownership of Project Site

KHK Lukavac

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Lukavac.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Spreca

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. Pre-treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1 Estimated Investment Cost

The investment costs are preliminary estimated at 2.800.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 20.000 US\$

- for maintenance 30.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 3 – Industry

**Reconstruction and Improvement of
Wastewater Treatment Plant of “Incel” Banja
Luka**

Date of first setting up:

Date of latest upgrade:

Project Title Reconstruction and improvement of wastewater treatment plant of "Incel" Banja Luka

Responsible/Legal Body

Authority/Company Republic Committee for Water Republic Srpska

Name Dr. Sci. Borislav Jaksic

Address Banja Luka

Telephone ++387 58 42058

Fax ++387 58 42058

e-mail

Project Target Reduction of high pollution of r. Vrbas from industry wastewater. Improvement of water quality of river Vrbas.

Investment Costs 3.500.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Reconstruction and improvement of wastewater treatment plant of “Incel” Banja Luka

2. Investor Details

2.1. Authority/Company

Name: “INCEL” DD Banja Luka

Address: Banja Luka

Telephone: ++387 58 35544

Fax: ++387 58 35545

E-mail:

2.2. Contact Persons

Mr. Nenad Tomanic

2.3. Advisor/Consultant

Republic Committee for Water Republic Srpska, Banja Luka

2.4. Legal/Financial Status

Chemical company/Stock company

2.5. Authority/Company Profile

Pulp mill, tissue paper mill, viscose mill, polyester mill, gas-concrete element factory.

Number of persons employed: 5600 (before the war 1992)

Annual budget: now no data

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water Republic Srpska, Banja Luka

3. Project Description

3.1. Project Outline

Rehabilitation and reconstruction of wastewater treatment in the Incel company. Treatment plant has primary and secondary treatment and sludge treatment.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Vrbas.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-chemical treatment. Construction of biological part will improve system clearing. The treatment of sludge with stabilization and finally sludge dewatering and disposal.

3.5. Ownership of Project Site

INCEL DD Banja Luka

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Banja Luka.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Vrbas.

4.4. Primary Effects of Project

The project could be characterized as a project of municipality level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 3.500.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 25.000 US\$

- for maintenance 35.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water.

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 4 – Industry

**Rehabilitation and Reconstruction of
Wastewater Treatment Plant in “Natron”
Maglaj**

Date of first setting up:	Date of latest upgrade:
Project Title	Rehabilitation and reconstruction of wastewater treatment plant in “Natron” Maglaj
Responsible/Legal Body	
Authority/Company	Public Watermanagement Enterprise “Vodoprivreda BiH” Sarajevo
Name	Mr. Faruk Sabeta, B. Sc. Manager
Address	Sarajevo
Telephone	++387 71 651646
Fax	++387 71 651646
e-mail	
Project Target	Rehabilitation and reconstruction of ongoing industry wastewater treatment plant. Reduction of high pollution in r. Bosna
Investment Costs	3.000.000 US\$
Status of Project	
Ongoing/Planned Project, Emerging Concept	Planned project
Language of Project Documents	Bosnian

1. Project Title

Rehabilitation and reconstruction of wastewater treatment plant in “Natron” Maglaj

2. Investor Details

2.1. Authority/Company

Name: DD “Natron” Maglaj

Address: Maglaj

Telephone: ++387 74 813 592

Fax: ++387 74 813 592

E-mail:

2.2. Contact Persons

Mr. Ibrahim Sehic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Stock company

2.5. Authority/Company Profile

Pulp mill, paper mill, wrapping factory, trade and sales

Number of persons employed: 1700

Annual budget: 55.600.000 KM (cca. 32.700.000 US\$)

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions / Enterprises beside the Investor

Public Water management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Maglaj

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Central wastewater treatment plant for Natron Maglaj. Rehabilitation of wastewater treatment plant from war destruction. Treatment plant has primary and secondary treatment with biological part and sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into the river Bosna. Capacity of Central wastewater treatment plant is 400.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Bosna.

3.3. Status of Project Preparation

Feasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with finally sludge dewatering and disposal.

3.5. Ownership of Project Site

DD "Natron" Maglaj

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Maglaj.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Bosna.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 3.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 22.000 US\$
- for maintenance 32.000 US\$

6.3 Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 5 – Industry

**Construction of Wastewater Treatment Plant
for “Celpak” Prijedor**

Date of first setting up:	Date of latest upgrade:
Project Title	Construction of wastewater treatment plant for “Celpak” Prijedor
Responsible/Legal Body	
Authority/Company	Republic Committee for Water Republic Srpska
Name	Dr. Sci. Borislav Jaksic
Address	Banja Luka
Telephone	++387 58 42058
Fax	++387 58 42058
e-mail	
Project Target	Common industry wastewater treatment plant of pulp and paper mill. Reduction of high pollution in r. Sana and Una, tributary of r. Sava
Investment Costs	14.000.000 US\$
Status of Project	
Ongoing/Planned Project, Emerging Concept	Planned project
Language of Project Documents	Bosnian

1. Project Title

Construction of wastewater treatment plant for “Celpak” Prijedor

2. Investor Details

2.1. Authority/Company

Name: “Celpak” DD Prijedor

Address: Prijedor

Telephone: ++387 79 24 999

Fax: ++387 79 12 600

E-mail:

2.2. Contact Persons

Mr. Dusko Banovic

2.3. Advisor/Consultant

Republic Committee for Water Republic Srpska

Dr. Borislav Jaksic, manager phone ++387 58 42058

2.4. Legal/Financial Status

Pulp and paper mill company/stock company.

2.5. Authority/Company Profile

Production sulphite pulp without evaporation waste liquor. Production writing paper. Maintenance. Trade and sale.

Number of persons employed: no data

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water Republic Srpska, Banja Luka

3. Project Description

3.1. Project Outline

Central wastewater treatment plant for pulp and paper industry in the “Celpak” Prijedor. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Sana and river Una, tributary of river Sava.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge.

3.5. Ownership of Project Site

DOO “Celpak” Prijedor

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in the city of Prijedor.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient of the treated wastewater is river Sana.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 14.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 81.000 US\$
- for maintenance 115.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 6 – Industry

**Reconstruction of Industry Wastewater
Treatment Plant for DD “Zeljezara” Zenica**

Date of first setting up:	Date of latest upgrade:
Project Title	Reconstruction of industry wastewater treatment plant for DD “Zeljezara” Zenica
Responsible/Legal Body	
Authority/Company	Public Watermanagement Enterprise “Vodoprivreda BiH” Sarajevo
Name	Mr. Faruk Sabeta, B. Sc. Manager
Address	Sarajevo
Telephone	++387 71 651646
Fax	++387 71 651646
e-mail	
Project Target	Reconstruction and improvement of industry wastewater treatment plant from iron foundry. Reduction of high pollution in r. Bosna
Investment Costs	1.600.000 US\$
Status of Project	
Ongoing/Planned Project, Emerging Concept	Planned project
Language of Project Documents	Bosnian

1. Project Title

Reconstruction of industry wastewater treatment plant for DD “Zeljezara” Zenica

2. Investor Details

2.1. Authority/Company

Name: DD “Zeljezara” Zenica

Address: Zenica

Telephone: ++387 72 26 263

Fax: ++387 72 26 263

E-mail:

2.2. Contact Persons

Mr. Sulejman Muhamedagic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Public authority enterprise Waterworks and Sewerage Tuzla

2.5. Authority/Company Profile

Production of iron, ironware, ironwork etc.

Number of persons employed: 4150 (9560)

Annual budget: 11.600.000 KM (cca. 6.820.000 US\$)

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Zenica

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Reconstruction of industrial wastewater treatment plant in the DD “Zeljezara” Zenica. Increasing capacity of wastewater treatment and improvement of treated water quality. Treatment plant has primary and secondary treatment with sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into the river Bosna. Capacity of industrial wastewater treatment plant is 200.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Bosna tributary of river Sava.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-chemical treatment with stabilization of the sludge. The treatment of sludge and finally sludge dewatering and disposal.

3.5. Ownership of Project Site

DD “Zeljezara” Zenica

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in city of Zenica.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Bosna.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 1.600.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 12.000 US\$

- for maintenance 18.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 7 – Industry

**Construction of Industrial Wastewater
Treatment in the Sodium Factory Lukavac**

Date of first setting up:	Date of latest upgrade:
Project Title	Construction of industrial wastewater treatment in the Sodium Factory Lukavac
Responsible/Legal Body	
Authority/Company	Public Water Management Enterprise “Vodoprivreda BiH” Sarajevo
Name	Mr. Faruk Sabeta, B. Sc. Manager
Address	Sarajevo
Telephone	++387 71 651646
Fax	++387 71 651646
e-mail	
Project Target	Construction of industry wastewater treatment plant. Reduction of high pollution in r. Spreca, tributary of r. Bosna
Investment Costs	6.000.000 US\$
Status of Project	
Ongoing/Planned Project, Emerging Concept	Planned project
Language of Project Documents	Bosnian

1. Project Title

Construction of industrial wastewater treatment in the Sodium Factory Lukavac

2. Investor Details

2.1. Authority/Company

Name: DD Fabrika Sodium Lukavac

Address: Lukavac

Telephone: ++387 75 527 537

Fax: ++387 75 282 004

E-mail:

2.2. Contact Persons

Mr. Zaim Bektic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Stock company, chemical production

2.5. Authority/Company Profile

Chemical company with production of sodium, sodium bicarbonate, sodium carbonate trade and sale activity.

Number of persons employed: 1250

Annual budget: 30.000.000 US\$

2.6. Planning/Implementing Extent Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina,
Sarajevo Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo
Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Construction of industrial wastewater treatment plant for sodium factory Lukavac. Reduction of toxic water and high alkaline of water Treatment plant has primary and secondary treatment with complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into the river Spreca. Capacity of Central wastewater treatment plant is planned from 80.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Spreca, tributary of river Bosnia.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-chemical treatment with stabilization of the sludge. Neutralization processes. The treatment of sludge with dewatering and disposal.

3.5. Ownership of Project Site

DD Fabrika Sodium Lukavac

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Lukavac.

4.2 Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Spreca.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. Pollution could be reduced up to 70-80%.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 6.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 35.000 US\$

- for maintenance 55.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 8 – Industry

**Construction of Industrial Wastewater
Treatment Plant for “Destilacija drveta” Teslic**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of industrial wastewater treatment plant for
“Destilacija drveta” Teslic

Responsible/Legal Body

Authority/Company Republic Committee for Water Republic Srpska

Name Dr. Sci. Borislav Jaksic

Address Banja Luka

Telephone ++387 58 42058

Fax ++387 58 42058

e-mail

Project Target Construction of industrial wastewater treatment plant in the
factory for dry wood distillation. Reduction of high pollution in r.
Usora, tributary of r. Bosna

Investment Costs 5.300.000 US\$

Status of Project

**Ongoing/Planned Project,
Emerging Concept** Planned project

**Language of Project
Documents** Bosnian

1. Project Title

Construction of industrial wastewater treatment plant for “Destilacija drveta” Teslic

2. Investor Details

2.1. Authority/Company

Name: DD “Destilacija drveta” Teslic

Address: Teslic

Telephone: ++387 54 731 799

Fax: ++387 54 731 799

E-mail:

2.2. Contact Persons

No data

2.3. Advisor/Consultant

Republic Committee for Water Republic Srpska, Banja Luka

Dr. Sci. Borislav Jaksic, manager phone ++387 58 42058

2.4. Legal/Financial Status

Stock company

2.5. Authority/Company Profile

Chemical factory, production of acetic acid and derivative from dry distillation of wood.

Number of persons employed: no data

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water Republic Srpska, Banja Luka

City Council of Teslic

3. Project Description

3.1. Project Outline

Industrial wastewater treatment plant in the factory “Destilacija drveta” Teslic. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Capacity of industrial wastewater treatment plant is 60.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in the river Usora, tributary of river Bosnia.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. The treatment of sludge and final sludge dewatering.

3.5. Ownership of Project Site

DD “Destilacija drveta” Teslic

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Teslic.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Usora.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 5.300.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 45.000 US\$

- for maintenance 65.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water.

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 9 – Industry

**Construction of Industrial Wastewater
Treatment Plant for DD “Maglic” Foca**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of industrial wastewater treatment plant for DD
"Maglic" Foca

Responsible/Legal Body

Authority/Company Republic Committee for Water Republic Srpska

Name Dr. Sci. Borislav Jaksic

Address Banja Luka

Telephone ++387 58 42058

Fax ++387 58 42058

e-mail

Project Target Construction of industry wastewater pre-treatment plant.
Reduction of high pollution r. Drina, tributary of r. Sava.

Investment Costs 9.200.000 US\$

Status of Project

**Ongoing/Planned Project,
Emerging Concept** Planned project

**Language of Project
Documents** Bosnian

1. Project Title

Construction of industrial wastewater treatment plant for DD “Maglic» Foca

2. Investor Details

2.1. Authority/Company

Name: DD “Maglic” Foca

Address: Foca

Telephone: ++387 52 572 162

Fax: ++387 52 572 163

E-mail:

2.2. Contact Persons

Mr. Radovan Miletic

2.3. Advisor/Consultant

Republic Committee for Water Republic Srpska Banja Luka

2.4. Legal/Financial Status

Stock company “Maglic” Foca

2.5. Authority/Company Profile

Production of plywood sheet

Number of persons employed: no data

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water Republic Srpska Banja Luka

City Council of Foca

3. Project Description

3.1. Project Outline

Industrial wastewater pre-treatment plant plywood sheet factory. Treatment plant has primary and secondary treatment with complete sludge treatment. Pre-treated industrial wastewater shall be treated up to the necessary level for discharge into sewer. High organic load wastewater is 200.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Drina, tributary of river Sava.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-chemical treatment with stabilization of the sludge. The treatment of sludge dewatering and finally sludge disposal.

3.5. Ownership of Project Site

DD "Maglic" Foca

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of r. Drina.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Drina.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. Pre-treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 9.200.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 58.000 US\$
- for maintenance 80.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water.

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 1 – Agriculture

**Construction of Wastewater Treatment Plant
for Dairy and Pigs Breeding Farm in
Nova Topola**

Date of first setting up:

Date of latest upgrade:

Project Title

Construction of wastewater treatment plant for dairy and pigs breeding farm in Nova Topola.

Responsible/Legal Body**Authority/Company**

Republic Committee for Water Republic Srpska, Banja Luka

Name

Dr. Sci. Borislav Jaksic

Address

Banja Luka

Telephone

++387 58 42058

Fax

++387 58 42058

e-mail**Project Target**

Construction of wastewater treatment plant for dairy and pigs breeding farm. Reduction of high pollution from agriculture. Protection of underground water from pollution.

Investment Costs

6.500.000 US\$

Status of Project**Ongoing/Planned Project,
Emerging Concept**

Planned project

**Language of Project
Documents**

Bosnian

1. Project Title

Construction of wastewater treatment plant for dairy and pigs breeding farm in Nova Topola.

2. Investor Details

2.1. Authority/Company

Name: DD “Svinjogojska Farma” Nova Topola

Address: Nova Topola

Telephone: ++387 58 792 038

Fax: ++387 58 792 038

E-mail:

2.2. Contact Persons

Mr. Zivko Pavlovski

2.3. Advisor/Consultant

Republic Committee for Water Republic Srpska, Banja Luka

2.4. Legal/Financial Status

Stock company

2.5. Authority/Company Profile

Pigs breeding, dairy and production of fodder.

Number of persons employed: no data

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water Republic Srpska, Banja Luka

City Council of Banja Luka and Bosanska Gradiska

3. Project Description

3.1. Project Outline

Construction of wastewater treatment plant in common wastewater from dairy and pigs breeding farm. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Capacity of farm wastewater treatment plant is 80.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in the river Sava. Protection of underground water.

3.3. Status of Project Preparation

Feasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and finally sludge dewatering and disposal.

3.5. Ownership of Project Site

DD "Svinjogojska Farma" Nova Topola

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Lijevo field.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality/Receptor

The recipient for the treated wastewater is indirect in river Sava.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 6.500.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 45.000 US\$
- for maintenance 75.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water.

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds /requirements			

Project 2 – Agriculture

**Construction of Wastewater Treatment Plant
for Pigs Breeding Farm in Brcko**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of wastewater treatment plant for pigs breeding farm in Brcko

Responsible/Legal Body

Authority/Company Republic Committee for Water Republic Srpska, Banja Luka

Name Dr. Sci. Borislav Jaksic

Address Banja Luka

Telephone ++387 58 42058

Fax ++387 58 42058

e-mail

Project Target Construction of wastewater treatment plant for pigs breeding farm. Reduction of high pollution from agriculture. Protection of underground water from pollution.

Investment Costs 2.300.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Construction of wastewater treatment plant for pigs breeding farm in Brcko

2. Investor Details

2.1. Authority/Company

Name: DD Bimex “Svinjogojska farma” Brcko

Address: Brcko

Telephone: ++387 57 204 178

Fax: ++387 57 204 178

E-mail:

2.2. Contact Persons

No data

2.3. Advisor/Consultant

Republic Committee for Water Republic Srpska, Banja Luka

2.4. Legal/Financial Status

Stock company

2.5. Authority/Company Profile

Pigs breeding, livestock, fodder

Number of persons employed: no data

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water Republic Srpska, Banja Luka

City Council of Brcko

3. Project Description

3.1. Project Outline

Construction of wastewater treatment plant in common wastewater from dairy and pigs breeding farm. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Capacity of farm wastewater treatment plant is 30.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Sava.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and finally sludge dewatering and disposal.

3.5. Ownership of Project Site

Bimex "Svinjogojska farma" Brcko

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Brcko.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is indirect river Sava.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well.

5. Economic Project Justification

5.1 Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 2.300.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 18.000 US\$
- for maintenance 26.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water.

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 3 – Agriculture

**Construction of Wastewater Treatment Plant
for Dairy Farm “Spreca” Kalesija**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of wastewater treatment plant for dairy farm
"Spreca" Kalesija

Responsible/Legal Body

Authority/Company JVP "Vodoprivreda BiH" Sarajevo

Name Mr. Faruk Sabeta

Address Sarajevo

Telephone ++387 71 651 646

Fax ++387 71 664 861

e-mail

Project Target Construction of wastewater treatment plant for dairy farm.
Reduction of high pollution from agriculture. Protection of
underground water from pollution.

Investment Costs 2.200.000 US\$

Status of Project

**Ongoing/Planned Project,
Emerging Concept** Planned project

**Language of Project
Documents** Bosnian

1. Project Title

Construction of wastewater treatment plant for dairy farm “Spreca” Kalesija

2. Investor Details

2.1. Authority/Company

Name: Farma “Spreca” Kalesija

Address: Tuzla

Telephone: ++387 75 631 293

Fax: ++387 75 635 043

E-mail:

2.2. Contact Persons

Mr. Fahrudin Delic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Agriculture company with limited responsibilities

2.5. Authority/Company Profile

Dairy farm, milk production, fodders.

Number of persons employed: 250

Annual budget: 6.950.000 KM (cca. 4.090.000 US\$)

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Tuzla

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Construction of wastewater treatment plant for dairy farm. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Capacity of farm wastewater treatment plant is 20.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Spreca, tributary of river Bosna.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

DOO "Spreca" Kalesija

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Tuzla.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Spreca, tributary lake Modrac.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well. Protection of lake Modrac from pollution.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 2.200.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 18.000 US\$
- for maintenance 26.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 4 – Agriculture

**Construction of Wastewater Treatment Plant
for Dairy Farm “Butmir” Sarajevo**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of wastewater treatment plant for dairy farm
"Butmir" Sarajevo

Responsible/Legal Body

Authority/Company JVP "Vodoprivreda BiH" Sarajevo

Name Mr. Faruk Sabeta

Address Sarajevo

Telephone ++387 71 651 646

Fax ++387 71 664 861

e-mail

Project Target Construction of wastewater treatment plant for dairy farm.
Reduction of high pollution from agriculture. Protection of
underground water from pollution.

Investment Costs 1.900.000 US\$

Status of Project

**Ongoing/Planned Project,
Emerging Concept** Planned project

**Language of Project
Documents** Bosnian

1. Project Title

Construction of wastewater treatment plant for dairy farm “Butmir” Sarajevo

2. Investor Details

2.1. Authority/Company

Name: UPI DD Agriculture property “Butmir” Sarajevo

Address: Sarajevo, Bare 19A

Telephone: ++387 71 454 191

Fax: ++387 71 621 160

E-mail:

2.2. Contact Persons

Mr. Lutvo Memic

2.3. Advisor/Consultant

Public Water Management Enterprise Vodoprivreda Bosnia and Herzegovina, Sarajevo

Mr. Faruk Sabeta, B. Sc. general manager, phone ++387 71 651646

Institute for Water Resource Development Sarajevo

Mr. Mirza Selimovic B. Sc. manager, phone ++387 71 213858

2.4. Legal/Financial Status

Stock company, agriculture property

2.5. Authority/Company Profile

Dairy farm, milk production, fodders.

Number of persons employed: 75

Annual budget: 3.000.000 KM (cca. 1.750.000 US\$)

2.6. Planning/Implementing Extent/Capacity of the Investor

The company does not have planning capacities.

2.7. Institutions/Enterprises beside the Investor

Public Water Management Enterprise Bosnia and Herzegovina, Sarajevo

City Council of Sarajevo

Institute for Hydrotechnics of Faculty Civil Engineering in Sarajevo

Institute for Water Resource Development Sarajevo

3. Project Description

3.1. Project Outline

Construction of wastewater treatment plant for dairy farm. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Capacity of farm wastewater treatment plant is 17.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Bosna.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

UPI DD Agriculture property "Butmir" Sarajevo

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Sarajevo.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is river Bosna.

4.4. Primary Effects of Project

The project could be characterized as a project of cantonal level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well. Protection of underground water from pollution.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated.

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 1.900.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 15.000 US\$
- for maintenance 23.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water (0,18 US \$/m³ wastewater).

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

Project 5 – Agriculture

**Construction of Wastewater Treatment Plant
for Dairy and Pigs Breeding Farm Bijeljina**

Date of first setting up:

Date of latest upgrade:

Project Title Construction of wastewater treatment plant for dairy and pigs breeding farm Bijeljina.

Responsible/Legal Body

Authority/Company Republic Committee for Water Republic Srpska, Banja Luka

Name Dr. Sci. Borislav Jaksic

Address Banja Luka

Telephone ++387 58 42058

Fax ++387 58 42058

e-mail

Project Target Construction of wastewater treatment plant for dairy and pigs breeding farm. Reduction of high pollution from agriculture. Protection of underground water from pollution.

Investment Costs 2.000.000 US\$

Status of Project

Ongoing/Planned Project, Emerging Concept Planned project

Language of Project Documents Bosnian

1. Project Title

Construction of wastewater treatment plant for dairy and pigs breeding farm Bijeljina.

2. Investor Details

2.1. Authority/Company

Name: DD “Svinjogojska farma” Bijeljina

Address: Bijeljina

Telephone: ++387 57 472 377

Fax: ++387 57 472 377

E-mail:

2.2. Contact Persons

No data

2.3. Advisor/Consultant

Republic Committee for Water Republic Srpska, Banja Luka

Dr. Sci. Borislav Jaksic, manager, phone ++387 58 42 058

2.4. Legal/Financial Status

Stock company

2.5. Authority/Company Profile

Livestock farm, dairy, pigs breeding, fodder

Number of persons employed: no data

Annual budget: no data

2.6. Planning/Implementing Extent/Capacity of the Investor

No data.

2.7. Institutions/Enterprises beside the Investor

Republic Committee for Water Republic Srpska, Banja Luka

City Council of Bijeljina

3. Project Description

3.1. Project Outline

Construction of wastewater treatment plant for common wastewater from dairy and pigs breeding farm. Treatment plant has primary and secondary treatment with biological part and complete sludge treatment. Capacity farms wastewater treatment plant is 20.000 p.e.

3.2. Primary Needs for the Project

The main aim of the project is to reduce the pollution in river Sava and protection underground water.

3.3. Status of Project Preparation

Prefeasibility study in progress.

All finished documents are in Bosnian language.

3.4. Technology Proposed

The mechanical-biological treatment with anaerobic stabilization of the sludge. Separated nitrification and denitrification processes. The treatment of sludge with the use of biogas and final sludge dewatering.

3.5. Ownership of Project Site

DD Farm Bijeljina

3.6. Specific Project Items

4. Project Effects and Interactions

4.1. Public's Expression of Interest

The public opinion of the project is very positive from people, who live in region of Semberija field.

4.2. Environmental Impact Assessment

The environmental impact assessment is finished.

4.3. Sensitivity of Locality /Receptor

The recipient for the treated wastewater is indirect in river Sava and underground water.

4.4. Primary Effects of Project

The project could be characterized as a project of regional level of importance. The building of the biological part of the treatment plant will further reduce the load of BOD up to 80-90 % and the load of COD up to 70 percent will be reduced as well. Protection of underground water.

5. Economic Project Justification

5.1. Economic Project Benefits

Higher employment during the construction period as well as during the operation period.

Improved water quality for agriculture utility and other possibilities (tourism, fishing, recreation etc.).

5.2. Economic Internal Rate of Return (EIRR)

EIRR has not been calculated..

6. Financial Viability

6.1. Estimated Investment Cost

The investment costs are preliminary estimated at 2.000.000 US\$.

6.2. Estimated Operational Cost

The operational costs are preliminary estimated as follows:

- for personnel 15.000 US\$
- for maintenance 25.000 US\$

6.3. Estimate of Revenues

Through the payment from treated water.

6.4. Financial Internal Rate of Return (FIRR)

FIRR has not been calculated.

6.5. Anticipated/Proposed Funding Scheme

Sources of funding	Secured	Requested	Non - secured
	(Currency)	(Currency)	(Currency)
(1) Equity of project owner			--
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan - central budget			
(5) Public loan - regional budget			
(6) Public loan - municipal budget			
(7) Public grant - central budget			
(8) Public grant - regional budget			
(9) Public grant - municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other sources			
Total funds/requirements			

