

PRESSURES AND IMPACTS IN DRINA RB IN BiH

- ❑ Assessment of significant pressures and human impact was made, including:
 - Assessment of pollution from point sources
 - Assessment of pollution from diffuse sources, including a review of land use
 - Assessment of pressures on the quantity of water, including abstractions
 - Assessment of other human impacts on water status.

- ❑ Pressure assessment is based on DPSIR methodology, where DPSIR is short for:
 - Driving force,
 - Pressure,
 - State,
 - Impact,
 - Response.

SIGNIFICANT ISSUES

Significant water management issues are defined as follows :

- Organic pollution of surface water,
- Nutrient pollution of surface water,
- Hazardous substances pollution of surface water,
- Hydromorphological alteration of surface water bodies,
- Alteration of ground water quality, especially due to nitrates and pesticides pollution,
- Alteration of quantity of ground water, especially due to excessive abstraction
- Insufficient reimbursement of water charges.

POINT SOURCES POLLUTION

1. Organic pollution from population

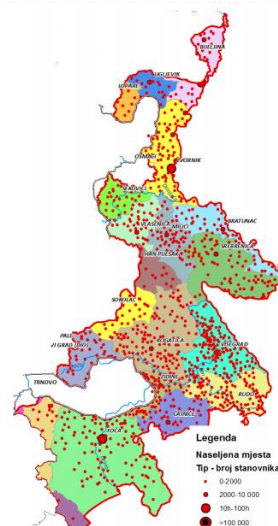
In Drina river basin, in Republic of Srpska, there is 21 municipality with 1.017 settlement and a population of 248.354. Percentage of population connected to sewerage system is 19,8 %.

2. Industry

- Alpro a.d. Vlasenica
- „Gross“ d.o.o. Gradiška, P.J. Srebrenica, Rudnik olova i cinka „Sase“
- „Alumina“ d.o.o. Zvornik
- RITE Ugljevik – mine and TPP
- “Fabrika za pocinčavanje” d.o.o. Srebrenica

3. Landfills

There are 11 landfills in Drina river basin.



Settlements in Drina river basin

POINT SOURCES POLLUTION

1. Organic pollution from population

In Drina river basin, in Federation of B&H, there is 196 settlement and a population of 53.739.

Percentage of population connected to sewerage system (15,880) is 27,32%.

2. Industry

- Total 13 industries in Drina RB in FB&H
- 5 small (516 ES)
- 8 big (10.173 ES)

3. Landfills

There are several minor landfills in Drina river basin. Based on calculation made in RBMP landfills produce pressure 51,47 BPK 5, 23,69 N, 0,12 P, etc...



DIFFUSE SOURCE POLLUTION

1. **Land use** (agriculture)
2. **Population** that is not connected to sewerage – 195.200 out of 246.336 inhabitants is not connected (79,24 %)
3. **Farming** (farms and fisheries) – total of 55

Land use in Drin river basin in RS

No.	Land type	Area (ha)	Percent (%)
1.	Grasslands	106.376	17,31
2.	Agriculture	87.934	14,31
3.	Forests	364.930	59,38
4.	Urban areas	3.066	0,50
5.	Water surfaces	3.693	0,60
6.	Other	48.601	7,91
	Total	614.600	100,00

DIFFUSE SOURCE POLLUTION

1. **Land use** (agriculture)
2. **Population** that is not connected to sewerage – 36.859 out of 52.739 inhabitants is not connected (69,89 %)
3. **Farming** – total of 4.150,75 NC

HYDROMORPHOLOGICAL ALTERATIONS

In Drina RB in FB&H there are 4 Small HPP

1. Goražde - Osanica 1 - 944 (kW)
2. Goražde - Osanica 2 - 630 (kW)
3. Pale FBiH - Kaljani - 1.816 (kW)
4. Pale FBiH - Čemernica - 1.105 (kW)

HYDROMORPHOLOGICAL ALTERATIONS

1. **Hydropowerplants:** HPP Višegrad, HPP Zvornik*, HPP Bajina Bašta*
2. **Facilities** for flood control and water regulation
3. **Sand and gravel excavation**, especially in downstream river flow of Drina



* Common facilities of BiH-RS and SRB, managed by Elektroprivreda Srbija

SECONDARY PRESSURES

1. **Water supply** for population, industry and agriculture
2. **Mines**(„Mine and TPP Ugljevik“ Ugljevik; Lead and zink mine „Sase“; Brown coal mine „Miljevina“; Bauxite mine „BOKSIT“ Milići)
3. **Irrigation** of agricultural land (mostly ground water – small amount)
4. **Fisheries** (“Slap” Rogatica, “Zarić” Bratunac)
5. **Thermal pollution** (No significant pollution)
6. **Sport and recreation**
7. **Invasive species**(*Oncorhynchus mykiss*, *Salvelinus alpinus*, *Ctenopharyngodon idella*, *Ameiurus nebulosus*)

PROGRAM OF MEASURES

BASIC MEASURES:

- To upgrade existing or build new sewage systems;
- To upgrade existing or build new wastewater treatment plants;
- To reduce nutrient pollution from agriculture sources;
- To reduce pesticides pollution from agriculture sources;
- Remediation of contaminated sites (historical pollution, including sediment, ground water, soil)
- To improve flow regime and/or establishment of environmental flow.

PROGRAM OF MEASURES

SUPPLEMENTARY MEASURES:

- Harmonization of Republic of Srpska and FB&H legislations with EU regulations;
- Improvement of longitudinal continuity of watercourses (e.g. establishment of fish paths, demolition of old dams)
- Policy of measures for determining water pricing for the implementation of cost recovery for water services for households, industry and agriculture;
- Consulting services in agriculture;
- Measures for protection of drinking water (e.g. the establishment of protection zones, buffer zones, etc.);
- Measures to reduce emissions, discharges and leaks of priority hazardous substances or to reduce emissions, discharges and leaks of priority substances;
- Measures to reduce sediment production from soil erosion and surface runoff;
- To establish polluter cadastre for ground and surface water;
- To ensure periodical monitoring of wastewater discharges;
- To develop a study to improve the flow regime and/or to establish an environmental flow;
- To develop action plans.

PROGRAM OF MEASURES

No.	Municipality center/Planning cycle					1. Plan	2. Plan	3. Plan	4. Plan	Total PE
	Town	No. ppl. 2013. y.	Connected to sewerage	Need for capacity of WWTP	Adopted cap. of WWTP	Capacity				
1	Ugljevik	4155	2564	5194	6000	0	3000	0	3000	6000
2	Zvornik	12674	12574	15843	16000	0	0	16000	0	16000
3	Šekovići	1519	608	1899	2000	0	0	0	2000	2000
4	Vlasenica	7228	4770	9035	10000	0	0	5000	5000	10000
5	Milići	2368	2013	2960	3000	0	0	3000	0	3000
6	Bratunac	8359	6800	10449	10000	0	7000	0	3000	10000
7	Srebrenica	2607	2607	3259	3000	0	0	3000	0	3000
8	H. Pijesak	2018	2018	2523	2000	0	0	2000	0	2000
9	Rogatica	6855	5827	8569	8000	0	0	6000	2000	8000
10	Višegrad	5869	2935	7336	7000	0	3500	0	3500	7000
11	Rudo	1949	1169	2436	2000	0	2000	0	0	2000
12	Čajniče	2401	2401	3001	3000	0	0	0	3000	3000
13	Foča	12334	4564	15418	15000	0	5000	0	10000	15000
14	Sokolac - Bosna	11759	3551	14699	15000	0	7500	0	7500	15000
15	Naselja 2- 10 hilj			13 nas	10000	0	0	10000	0	10000
	Ukupno 1- 15	82095		10546	112000	0	28000	45000	39000	112000

**THANK YOU FOR YOUR
ATTENTION**