

TAIEX ECRAN WORKSHOP

Impact and pressures assessment in Drina RB – WFD Article 5

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Tirana, 20 June 2016

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- Drina watershed in Montenegro is consists of follow bigger rivers: Tara, Piva, Čehotina and Lim with their particular watersheds.
- Also, many mountain lakes, like Black, Biogradsko and Plavsko belong to Drina river basin.
- More than third part of Montenegro territory belongs to DRB. It is the northern part of the country.
- Major settlements at the watershed are: Plav, Gusinje, Berane, Bijelo Polje (Lim), Pljevlja (Čehotina), Kolašin, Mojkovac (Tara), Žabljak (Black Lake). Their population is 154.843 (*source: MONSTAT, Census 2011*), which is 25% of total country population.

Table 1: Number of inhabitants by municipalities at DRB

| Andrijeвица | Berane | B. Polje | Žabljak | Kolašin | Mojkovac | Plav | Plužine | Pljevlja | Šavnik |
|-------------|--------|----------|---------|---------|----------|-------|---------|----------|--------|
| 5071 | 33970 | 46051 | 3569 | 8380 | 8622 | 13108 | 3246 | 30786 | 2070 |

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- There is not any WWTP (except Mojkovac and Žabljak, which are small towns and it is not of general concern). Because that, respecting the amount of population, the main pollution source are communal untreated waters, as concentrated, point source. Also, there is a population which is not connected to the sewage system (rural and suburb areas), with their septic tanks, as a diffuse source.

Table 2.: Estimated emission pollution (kg/y) from population, tourism and industry (source: Water base, 2001) *) *touristic season*

| | Andrije vica | Berane | B. Polje | Žabljak* | Kolašin | Mojkovac | Plav | Plužine | Pljevlja | Šavnik | Total |
|------|--------------|--------|----------|----------|---------|----------|-------|---------|----------|--------|--------|
| TSS | 426 | 4227 | 4088 | 439 | 741 | 616 | 1121 | 315 | 2353 | 211 | 14537 |
| BOD5 | 447 | 3133 | 4423 | 480 | 806 | 672 | 1210 | 343 | 3102 | 231 | 14847 |
| TN | 82 | 533 | 726 | 96 | 155 | 135 | 240 | 68 | 498 | 46 | 2579 |
| TP | 20 | 124 | 175 | 24 | 38 | 33 | 61 | 16 | 124 | 11 | 626 |
| PE | 7450 | 52216 | 73716 | 8000 | 13434 | 11199 | 20167 | 5717 | 51700 | 3850 | 247449 |

Table 3.: Estimated total emission pollution (kg/y) by watersheds *) *touristic season*

| | Lim | Tara* | Piva | Čehotina | Total |
|------|--------|-------|------|----------|--------|
| TSS | 9852 | 1691 | 541 | 2280 | 14364 |
| BOD5 | 9203 | 1844 | 591 | 3021 | 14659 |
| TN | 1559 | 366 | 118 | 482 | 2525 |
| TP | 380 | 90 | 28 | 120 | 618 |
| PE | 153389 | 30738 | 9842 | 50362 | 244331 |

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Another major pollution sources are:

- Energy generation (Coal mine Pljevlja, TE Pljevlja with its un-appropriate dump sites with ash and slag, affected to Čehotina and its watershed – ground waters; HE Mratinje at Piva)
- Agriculture (extensive agriculture and livestock farms at the valley of Lim and Čehotina and Žabljak area, as well)
- Heating, prevailed with local coal (Pljevlja city) and the wood (other cities)
- Food industry associated with livestock farms (Bijelo Polje and Pljevlja)
- Atmospheric run-off from urban and traffic surface
- Communal solid waste – trash dumps (Berane, Pljevlja, Bijelo Polje, Kolašin)
- Touristic activities (Tara)
- Waste disposal of Mine of lead and zinc at Šuplja stijena (?)
- Mine area around Mojkovac (natural run-off of heavy metals from land to local rivers)
- Several fish ponds

Potential, future sources

- The new coal mine at the border of urban zone of Pljevlja
- Planned coal mine at new location Maoče, near Pljevlja, aimed for the planned, new TE Pljevlja II

Measures:

- Building the WWTP installations at the municipal centers (Master plan)
- Building the sanitary landfill for each municipality and closure of the existing dumps with remediation of their area (Master plan).
- Implementation of BAT and environmental friendly technologies, with treatment of their waste waters before discharging, in existing and new industries, especially at Pljevlja (Mine and TE), which is absolute biggest pollution source at DRB part in Montenegro

Other main characteristics:

- 3 national parks (Durmitor, Biogradsko, Prokletije) at the watershed
- Metalliferous area (metals, coal)
- Two artificial accumulations: Pivsko lake at Piva (for HE Mratinje) and Otilovići at Čehotina (for water supply of TE Pljevlja)