



# PROGRAMME OF MEASURES

Section 8 set out the objectives for the SRBM plan.

This section describes the measures to be taken to achieve those objectives.

Proposed programme is divided in the following groups of measures:

## 1. Regulatory measures

Regulatory measures are considered those measures that either come out as requirements of the legislation or this plan (e.g. establishment of water quality monitoring system, or adopting new water pricing policies), or

Strengthening the capacity mainly on a local level on IPPC implementation, including monitoring of performance of existing installations and their compliance with the permit conditions.

## 2. Control of urban wastewater discharges

Municipal wastewater discharge is one of the most important sources of pollution in the SRBD. There is no treatment of wastewater in any of the basin's settlements; wastewater is freely discharged in surface and ground waters.

Municipality	Municipal center	Urban population	Rural population	Total population	% of total population
Radovis	Radovis	16,223	12,021	28,244	23%
Strumica	Strumica	35,311	20,769	56,080	45%
Vasilevo	Vasilevo	2,174	9,948	12,122	10%
Bosilovo	Bosilovo	1,698	10,759	12,457	10%
Novo Selo	Novo Selo	2,756	9,210	11,966	10%
Konce	Konce	/	3,536	3,536	3%
Total		58,162	66,243	124,405	100%

The list of settlements planned to be equipped with WWTPs is given in Table below

Municipality	Settlement	Municipality	Settlement
Strumica	Strumica	Radovish	Radovish
Strumica	Bansko	Radovish	Injevo
Strumica	Dabile	Vasilevo	Vasilevo
Strumica	Kuklish	Bosilovo	Bosilovo
Strumica	Murtino	Novo Selo	Novo Selo



### 3. CONTROL OF UN- SEWERED WASTEWATER DISCHARGES

Regarding the analysis of pressures it was noticed that if the legislation requirements are fully met, i.e. all ten 'WFD-settlements' are equipped with WWTPs, the ratio of coverage with wastewater treatment in the SRBD will equal not more than 55%.

Therefore, this plan also includes measures for control of wastewater discharges in rural settlements with population less than 2,000.

The settlements are distributed in two groups:

- **Settlements with population (roughly) 100 to 2,000.** It is considered that these villages should be equipped with sewer (WW collection) networks and small-scale decentralized (packaged) WWTPs.
- **Villages with population less than 100,** where simple on-site wastewater treatment solutions in the form of impermeable septic tanks, filter system, lagoons, etc. are appropriate for the purpose.

### 4. CONTROL OF AGRICULTURAL SOURCES OF POLLUTION

Proposed measures within this group refer to control of diffuse (non-point) pollution which is result of agriculture activities.

Identified measures are divided in three sub-groups:

**Agriculture waste and hazardous materials management** measures, focused on managing of agriculture waste and waste materials: pesticide and fertilizer packaging (hazardous) waste; PE waste; organic (bio-degradable) waste; and mainly liquid waste from cleaning of agriculture machinery.

**Soil management and soil erosion control** measures, aiming at progressive control of surface runoff and soil erosion from agricultural land within the basin, and associated adverse effects on water quality.

**Control of fertilizer and pesticide use** measures, referring mainly to progressive implementation of good agricultural practices (GAP) in animal farms and crop cultivation land parcels.

## 5. CONTROL OF WATER WITHDRAWALS

This group represents the most investment-intensive group of measures. It refers to activities for control of water withdrawal from the basin and increase of water use efficiency.

The following sub groups of measures are taken into consideration:

***Control of municipal water withdrawals***, by reducing physical water losses in drinking and industry water supply networks operated by CPEs in all five basin municipalities.

Foreseen activities include supply side measures (reparation of water leaks and network upgrade), as well as demand side measures (water metering, development and promotion of new water supply codes, etc.).

***Control of irrigation water withdrawal***.

Irrigation is by far the largest water consumer in the SRBD. Current irrigation practices are extremely inefficient.

Foreseen measures include:

- (1) upgrading of existing irrigation schemes, to enable use of modern irrigation techniques (e.g. drip irrigation);
- (2) promotion and application of advanced irrigation technologies on individual farms;
- (3) promotion of cropping pattern change; and irrigation demand automation measures.

## 6. OTHER MEASURES

The group of other measures includes:

***Protected areas*** measures, focused mainly on restoration and continuous activities for protection of the Monospitovo Wetland and other protected areas within the SRBD.

***Flood risk mitigation*** measures.

Frequent floods, represent a specific aspect for the SRBD.

Therefore, the plan includes implementation of measures and activities focused on mitigation of flood-related risks in the form of structural measures (clean up and extension of riverbed regulating structures) and non-structural measures (establishment of early warning system, active vegetation change, integration of flood mitigation with urban planning, etc.)

***Solid waste management and sludge control*** measures, focused on activities for mitigation one of the remaining major pollution sectors – solid waste management.

This sub group includes establishment of a regional waste management center, but as well measures for closure and remediation of the existing non-compliant municipal landfills and village dump sites.



