



# MANAGEMENT PLAN

of the River Basins  
of Thrace River Basin District

SUMMARY

SEPTEMBER 2013



ΕΙΔΙΚΗ  
ΓΡΑΜΜΑΤΕΙΑ  
ΥΔΑΤΩΝ



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## **1. INTRODUCTION**

The **2000/60/EC Directive** for the establishment of a framework for Community action in the field of water policy or Water Framework Directive, after a long period of discussion and negotiation between the Member States of the European Union came into force on **22 December 2000**.

It is a comprehensive and innovative effort to protect and manage water resources and is the basic institutional tool introduced in the water sector in the European Union, reflecting the trend towards integrated environmental planning and sustainable management for long-term protection of waters (surface and groundwater) and ecosystems.

To achieve this goal River Basin Management Plan (RBMP) has to be established, the content of which is described in Article 13 and Annex VII of 2000/60/EC Directive. Each River Basin Management Plan is a strategic document for the River Basin District to which it refers to and provides the necessary information and instructions for the integrated management of water and ecosystems.

The legislative and institutional framework of the country has been harmonized with 2000/60/EC Directive with various legislative provisions (Law 3199/9-12-2003 and its amendments, Presidential Decree 51/2007, Joint Ministerial Decision 39626/2208/E130, Decision 706/2010 of the National Water Committee, Ministerial Decision 51354/2641/E103/2010, Joint Ministerial Decision 140384/2011, Ministerial Decision 1811 of the Minister of Environment, Energy and Climate Change etc.).

With the Contract signed on **18/02/2011**, the Special Water Secretariat assigned the preparation of the River Basin Management Plans of Eastern Macedonia and Thrace River Basin Districts, to the Joint Venture consisting of the following companies and persons: Z&A – P. Antonaropoulos & Assoc. S.A. • GeoEnviro – X. Stavropoulos & Assoc. L.P. • Panagiota-Styliani Kaemaki • NERCO – N. Chlykas & Assoc. S.A. • Konstantinos Pagonis • Spyridon Kokkinos • Georgios Papageorgiou • Ioannis Sigalas • ORION – G. Tavlas & Assoc. L.P. • Georgios Mattheou • Aristos Loukaides.

According to Article 5 of Law 4117/5-2-2013, the completed River Basin Management Plan, was approved by the National Water Committee upon the recommendation of the Special Water Secretariat of the Ministry of Environment, Energy and Climate Change, and was published in the Government Gazette (FEK 2290/B/13-09-2013).





## **2. RIVER BASIN MANAGEMENT PLAN OF THE RIVER BASIN DISTRICT**

### **2.1 Contents of the Management Plan**

This document is a summary of the River Basin Management Plan of Thrace River Basin District (GR12) and the following detailed documentation texts are attached:

**Table 1: Documentation texts of Thrace River Basin District Management Plan**

DOCUMENTATION TEXTS	
TEXT 1:	RECORD OF THE COMPETENT AUTHORITIES AND DETERMINATION OF THEIR AREA OF RESPONSIBILITY
TEXT 2:	PROTECTED AREAS
TEXT 3:	ECONOMIC ANALYSIS OF THE WATER USES AND DETERMINATION OF THE CURRENT COST RECOVERY DEGREE FOR THE DIFFERENT WATER SERVICES
TEXT 4:	PRELIMINARY ASSESSMENT OF ALTERNATIVE PROPOSALS FOR FLEXIBLE WATER TARIFF POLICY AND COST RECOVERY MECHANISMS
TEXT 5:	IDENTIFICATION AND TYPOLOGY OF SURFACE WATER BODIES. INITIAL AND FURTHER CHARACTERISATION OF GROUNDWATER BODIES
TEXT 6:	TYPE-SPECIFIC REFERENCE CONDITIONS FOR THE TYPES OF SURFACE WATER BODIES
TEXT 7:	FINAL DESIGNATION OF HEAVILY MODIFIED AND ARTIFICIAL WATER BODIES
TEXT 8:	ANALYSIS OF THE ANTHROPOGENIC PRESSURES AND THEIR IMPACTS ON SURFACE AND GROUNDWATER BODIES
TEXT 9:	EVALUATION AND CLASSIFICATION OF THE QUALITATIVE STATUS (ECOLOGICAL AND CHEMICAL) OF SURFACE WATER BODIES
TEXT 10:	EVALUATION AND CLASSIFICATION OF THE QUALITATIVE AND QUANTITATIVE STATUS OF GROUNDWATER BODIES
TEXT 11:	DETERMINATION OF ENVIRONMENTAL OBJECTIVES INCLUDING "EXEMPTIONS" FROM OBJECTIVES ACHIEVEMENT
TEXT 12:	CATALOGUE OF SCHEDULED AND NEW PROJECTS/ ACTIVITIES/ ALTERNATIONS WITH THE SOCIO-ECONOMIC BENEFITS SERVED
TEXT 13:	DRAFT PROGRAMME OF MEASURES (BASIC AND SUPPLEMENTARY) FOR THE PROTECTION AND RECOVERY OF WATER BODIES
TEXT 14:	IMPLEMENTATION REPORT OF THE 2006/118/EC DIRECTIVE "ON THE PROTECTION OF GROUNDWATER AGAINST POLLUTION AND DETERIORATION" AND THE JMD 39626/2208/E130/2009

### **2.2 Strategic Environmental Assessment**

The River Basin Management Plan was subject to a Strategic Environmental Assessment (SEA) according to the provisions of the 2001/42/EC Directive. The SEA procedure can be summarized as follows: An environmental report was prepared in which the likely significant effects on the environment and the reasonable alternatives of the proposed RBMP were identified. The public and the environmental authorities were informed and consulted on the draft RBMP and the environmental report. The environmental report and the results of the consultations were taken into account before adoption of the final RBMP.

The SEA results can be summarized as follows:

- The implementation of the RBMP as well as the suggested Program of Measures show optimum performance and promote the environmental objectives concerning water, while at the same time have strong relationship with the environmental objectives related to biodiversity, ground and public health.
- The suggested measures have positive effect in the water environment as well as in other environmental aspects such as ground and biodiversity. On the other hand the zero option will have a negative impact in the water environment.
- The expected negative effects derive from the construction of infrastructure and are considered to be reversible to a great extent, through the implementation of appropriate environmental restrictions (arise from specific Environmental Impact Assessments).
- The alternative additional measures don't seem to change the environmental performance of the Plan and therefore are not suggested to be adopted.

### **2.3 Drought and Water scarcity Management Plan**

In the framework of the River Basin Management Plan of the River Basin District of Thrace, a dedicated Drought and Water Scarcity Management Plan (DWSMP) has been developed, based on the principles of proactive management and planning. The main purpose of the DWSMP was to quantify the drought and water scarcity phenomena in the River Basin District, to assess possible methodologies for the prediction of future events, and to propose adequate response measures for the various risk levels. In more details, the following are included:

- The identification and analysis of historic drought and water scarcity events, and of their characteristics (duration, intensity, extent), for the time period 1980-2010. For this purpose, statistical methods, as well drought indicators (the Standard Precipitation Index – SPI-6, -9, -12 and -24) and water scarcity indicators (the Water Exploitation Index – WEI) have been used.
- The development of a methodology to accurately map drought and water scarcity in the RBD so that the stakeholders and end-users have in their hands a simple and understandable monitoring tool, at the adequate scale, useful for further defining the related risks in the next stages.
- The assessment of the impacts (environmental and socio-economic) of past drought events in the RBD, and the evaluation of their adverse effect in achieving the environmental targets of the Water Framework Directive (Article 4).
- The assessment of the related vulnerability and risk to water scarcity and drought, and the definition of relevant vulnerability zones (drought and water scarcity vulnerability mapping),

taking into consideration the prevailing physical (climate change, land use, etc.) and socio-economic conditions (water demand).

- The analysis of drought and water scarcity phenomena for the purpose of early warning. To this extent, a methodology for the early detection of potential upcoming drought events, with a horizon of 6-12 months, has been developed, based on the SPI, in order to support the operational planning of drought mitigation. Furthermore, suggestions have been made regarding the development of an early warning system, with the main system parameters being analyzed. Four alert levels have been proposed (ranging from “State of readiness”, to “Pre-alert conditions”, “Alert conditions” and “State of emergency”).
- The development of recommendation for the proper management of drought and water scarcity in the RBD based on operational planning, and the discussion of detailed measures to be taken for each alert level.



### **3. CONSULTATION PROCESS**

The public consultation processes have a key role during preparation, reading and revision of the river basin management plans. In addition to 2000/60/EC Directive, there are requirements for public participation in other EU legislation, especially in the SEA Directive.

The consultation period of the River Basin Management Plans, with a minimum duration of 6 months, began on **November 18, 2011**, and was completed in two phases:

- **Phase A'**

Until **May 7, 2012** the following were discussed:

1. Report on the consultation measures to be taken,
2. Catalogue of stakeholders,
3. Overview of the significant water management issues

- **Phase B'**

On **May 7, 2012**, the documentation texts of Thrace River Basin District Management Plan published on the consultation website of the Greek River Basin Managements Plans (<http://wfd.opengov.gr>).

During Phase B of the consultation the following were discussed:

1. River Basin Management Plan of Thrace River Basin District,
2. Environmental Report of the Strategic Environmental Assessment (SEA)

On **21 November 2012**, Special Water Secretariat announced the completion of the public consultation of the Draft River Basin Management Plan of Thrace River Basin District.

On **July 8, 2013**, the consultation in the framework of SEA, was completed and the Environmental Report of the SEA was approved.

On **September 13, 2013** the RBMP for the Thrace RBD was approved and published in the Government Gazette (FEK 2290/B/13-09-2013).



## **4. THRACE RIVER BASIN DISTRICT**

### **4.1 River basins**

Thrace River Basin District consists of five (5) River Basins (RB). These River Basins and their characteristics are presented in the following table.

**Table 2: River Basins of the Thrace River Basin District**

RB Code	RB Name	Area (km <sup>2</sup> )	Elevation (m)		
			Minimum	Mean	Maximum
GR07	Nestos	2.975,5	0	606	2.200
GR08	Ksanthi - Ksirorematos streams	1.663,6	0	363	1.822
GR09	Komotini- Loutrou Evrou streams	1.958,4	0	289	1.459
GR10	Evros	4.080,9	0	175	1.202
GR42	Thasos - Samothraki	564,3	0	347	1.600
	Total of RBD GR12	11.242,8			

### **4.2 Administrative & natural characteristics**

#### **4.2.1 Administrative status**

Thrace River Basin District includes the entire prefectures of Evros, Rhodope, Xanthi and parts of the prefectures of Kavala (36.2%) and Drama (47.3%).

Its de facto population according to the 2001 census was 403,711 individuals. Based on preliminary data from the 2011 census, the resident population of the River Basin District is estimated at 408,636 individuals.

#### **4.2.2 Land Uses**

According to Corine Land Cover 2000, in the Thrace River Basin District forest and semi natural areas cover 56% of total RBD area, while important is the percentage of agricultural areas (39% of total RBD area). Artificial surfaces, wetlands and waters cover 5% of the total surface of the RBD. According to the 2007 census, cultivated areas and fallow land amounts to 3.149Km<sup>2</sup> (28% of total RBD area).

#### **4.2.3 Major water uses**

The main use of water in the RBD of Thrace is irrigation, as happens in most areas of Greece. The demand for hydropower production is also important. Secondary, in terms of quantities, are the demands created by drinking water supply and industry, while the participation of livestock and tourism in total demand is small. There is also a water demand for the preservation of the environment and ecosystems, especially at the mouth of p. Nestos and Evros and for maintaining the

quality characteristics (mainly salinity) of the numerous transitional waters (lagoons) of the RBD into desired levels for the ecosystems that support.

The total average annual demand from anthropogenic uses is  $864.2 \times 10^6 \text{ m}^3$  ( $1,446.2 \times 10^6 \text{ m}^3$  including hydroelectric generation). The greatest demand for water in the RBD comes from irrigated agriculture, as mentioned above, which is  $792.1 \times 10^6 \text{ m}^3$  (54.8%). Hydropower production in the basin of Nestos uses  $582 \times 10^6 \text{ m}^3$  (40.2%). For other uses the demand stands at  $46.7 \times 10^6 \text{ m}^3$  for drinking water supply (4.14%),  $0.94 \times 10^6 \text{ m}^3$  for tourism (0.06%),  $17.4 \times 10^6 \text{ m}^3$  for industry (2.05%) and  $7.1 \times 10^6 \text{ m}^3$  for livestock (0,65%). The estimation for the required environmental flows is totaling to  $2,790.1 \times 10^6 \text{ m}^3$ .

Current demand in the RBD, is covered at an average annual basis to a large extent (97%) by the offered quantities of water. Of course it should be noted that the water supply in the river basin of Nestos and Evros heavily depends on incoming amounts of water from transboundary waters.

The RBD generally exhibits water surplus and the demand is covered from both surface and underground waters. Deficits occur only during periods of intense drought, such as the 1989-1993 drought event, but they do not exceed 10-15% of demand at the most.



## 5. COMPETENT AUTHORITIES

The competent authorities of Thrace River Basin District are presented in the following table.

**Table 3: Competent Authorities and areas of responsibility**

Thrace River Basin District (GR12)	River Basin	Percentage of area in every Region	Competent Decentralized Authority (FEK 1383B/2-9-2010 & FEK 1572B/28-9-2010)	National Competent Authority
	GR07	Eastern Macedonia & Thrace (100%)	Macedonia - Thrace (ADMT)	Special Water Secretariat/ YPEKA
	GR08			
	GR09			
	GR10			
	GR42			

Thrace is an international River Basin District. The upstream part of the River Basin of Nestos (GR07) is located within the Bulgarian RBD of the West Aegean (Nestos and Despatis Rivers are transboundary River water bodies). Evros River Basin (GR10) has also transboundary River water bodies that are partly located within the Bulgarian RBD of the East Aegean (Ardas and Erythropotamos Rivers). Evros River forms the borderline between Bulgaria and Greece for a 12-km stretch and also between Greece and Turkey, with the exception of a section upstream of New Vissa, where the river flows through Turkish territory.



## **6. IDENTIFICATION OF WATER BODIES**

### **6.1 Surface water bodies**

The surface water bodies within a river basin district were identified as falling within either one of the following surface water categories: rivers, lakes, transitional waters or coastal waters. In the River Basin District of Thrace all surface water body types are identified.

#### **6.1.1 Rivers**

In the River Basin District of Thrace one hundred eighty eight (188) River Water Bodies (RWBs) are identified, representing seven (7) different types as following:

- NgL0: 2 RWBs
- NgL1: 8 RWBs
- NmL0: 4 RWBs
- NmL1: 24 RWBs
- NsH1: 22 RWBs
- NsL0: 5 RWBs
- NsL1: 123 RWBs

#### **6.1.2 Lakes**

In the River Basin District of Thrace, six (6) Lake Water Bodies are identified. Five (5) of them are reservoirs (L-M5/7W type) and one (1) is a very shallow natural lake (F type).

#### **6.1.3 Transitional waters**

Five (5) Transitional Water Bodies are identified in the River Basin District of Thrace. Two (2) of them belong to the TW2 type (river estuaries or Delta) and three (3) belong to the TW3 type (lagoons).

#### **6.1.4 Coastal waters**

All twelve (12) coastal waters identified in the River Basin District of Thrace belong to the IIIE type.

The spatial characteristics of surface water bodies of RBD of Thrace (GR12), are presented in the table below.

**Table 4: Spatial characteristics of surface water bodies of RBD of Thrace**

Type of WB	Number	Characteristic size	Minimum	Mean	Maximum	Total
Rivers	188	Length (km)	0,4	9,6	61,6	1.810,2
Lakes	6	Surface (km <sup>2</sup> )	0,61	3,6	13,3	21,4
Transitional	5	Surface (km <sup>2</sup> )	1,2	56,0	164,9	279,8
Coastal waters	12	Surface (km <sup>2</sup> )	5,1	61,0	197,3	731,5

## 6.2 Groundwater bodies

Initial characterization of groundwater bodies was performed in order to assess their uses and the degree to which they are at risk of failing to meet the objectives. For those groundwater bodies to which significant problems or trends for deterioration of their quantitative or qualitative status were identified or they are characterised by increased importance for local economy, or/and for the environment, further characterization was performed.

Eighteen (18) GWBs are designated at the RBD of Thrace (GR12) and for six (6) of them, “further characterization” was carried out.

The spatial characteristics of the groundwater bodies identified in the RBD of Thrace (GR12) are presented in the table below.

**Table 5: Spatial characteristics of groundwater bodies of RBD of Thrace**

Type of WB	Number	Minimum area (km <sup>2</sup> )	Average area (km <sup>2</sup> )	Maximum area (km <sup>2</sup> )	Total area (km <sup>2</sup> )
GWBs	18	25,6	578,1	2.416,3	10.405,3

## 6.3 Heavily modified water bodies (HMWB) and Artificial water bodies (AWB)

Artificial and heavily modified water bodies resulted from human activities necessary in order to meet a variety of human needs and activities, such as flood protection, water storage for irrigation and drinking-water supply, navigation etc.

Forty (40) heavily modified and five (5) artificial water bodies were finally identified from a total of two hundred eleven (211) surface water bodies in RBD of Thrace (GR12). The table below presents their distribution across the surface water categories.

**Table 6: HMWBs and AWBs in the RBD of Thrace**

Surface WB Category	Number of WBs	HMWBs (no., %)	AWBs (no., %)
<b>Rivers</b>	188	34 (18,1%)	5 (2,7%)
<b>Lakes</b>	6	5 (83,3%)	- (0%)
<b>Coastal</b>	12	1 (8,3%)	- (0%)
<b>Transitional</b>	5	- (0%)	- (0%)
<b>Total</b>	211	40 (19,0%)	5 (2,4%)

## 6.4 Protected Areas

The register of protected areas of the RBD of Thrace, specified under Article 6 of the WFD, includes the following types of protected areas.

#### **6.4.1 Areas designated for the abstraction of water intended for human consumption**

Aisymi Reservoir, Xionorema River as well as all of the 18 Groundwater Bodies are included to this type of protected areas that are being used for the abstraction of water intended for human consumption of the population of the RBD of Thrace (GR12).

#### **6.4.2 Bodies of water designated as recreational waters including areas designated as bathing waters under the Directive 2006/7/EC**

In RBD of Thrace (GR12) there are thirty six (36) bathing waters that are located in nine of the twelve coastal water bodies of the RBD. Recreational waters were not identified in the RBD of Thrace (GR12).

#### **6.4.3 Nutrient- sensitive areas**

##### **Areas vulnerable to nitrates from agricultural sources under Directive 91/676/EEC**

Areas vulnerable to nitrates from agricultural sources are not officially designated in the RBD of Thrace (GR12). The RBMP proposed three (3) new areas to be included to the registry of nitrate vulnerable zones:

- a) Lowland areas of Xanthi and Rhodope (GR1208NI01),
- b) Evros Delta (GR1210NI02) and
- c) Orestiada area (GR1210NI03)

##### **Areas designated as sensitive under Directive 91/271/EEC**

Eight (8) areas have been identified as sensitive of eutrophication (Common Ministerial Decree 19661/1982/1999) in the RBD of Thrace (GR12):

1. Evros Delta
2. Vistonida lake
3. Mitrikou lake
4. West tributary (Tributary of Vosvozis river)
5. Evros river
6. Erithropotamos river
7. Komsatos river
8. Kosinthos river

These areas are associated with 27 Surface Water Bodies.

#### **6.4.4 Areas designated for the protection of habitats or species**

Twenty six (26) areas of the NATURA 2000 Network are included in the register as for these areas the protection of water (surface and groundwater) is an important factor for the conservation of habitats and species. Twelve (12) of them are Special Areas of Conservation (SACs) and fourteen (14) are Special Protection Areas (SPAs).

#### **6.4.5 Areas designated for the protection of economically significant aquatic species**

Until the present day no protected areas of this type are officially designated in the RBD of Thrace. This RBMP proposes the inclusion of seven (7) CWBs for protection under the 2006/113/EC Directive and five (5) RWBs for protection under the 2006/44/EC Directive.

## **7. ANALYSIS OF PRESSURES IN WATER BODIES**

Anthropogenic pressures on the bodies of water include all human activities that influence or may influence the water bodies of the area where they are developed. These pressures are characterized as significant as long as they form the cause for the WBs to be in danger of non-achieving their environmental objectives.

### **Urban Wastewater**

In the RBD of Thrace operate 9 Wastewater Treatment Plants (WWTP), which serve the population of 3 Priority A agglomerations (Didimotycho, Komotini and Orestiada), 4 Priority B agglomerations (Panagia Potamia Thassou, Chrisoupoli, Xanthi, Alexandroupolis) and 2 Priority C agglomerations (Soufli and Thassos). In the RBD, the construction of wastewater collection and treatment works is pending in 17 Priority C agglomerations.

### **Industry**

In the RBD operate 4 Industrial areas and 2 Industrial parks. Industrial area of Komotini is equipped with a central wastewater treatment plant, while Industrial area of Xanthi is serviced by the wastewater treatment plant of Xanthi agglomeration. Industrial park of Orestiada is connected to the wastewater treatment plant of Orestiada agglomeration. In Kavala and Alexandroupoli industrial areas and Sapes industrial park each industrial unit installed is responsible for its wastewater treatment and disposal.

In the RBD of Thrace, operate 19 industrial units that fall under the provisions of the IPPC Directive:

- Energy industries: 2
- Production and processing of metals units: 2
- Installations for the manufacture of ceramic products : 3
- Chemical installations for the production of basic organic chemicals: 2
- Installations for the disposal or recovery of hazardous waste: 1
- Landfills: 2.
- Industrial plants for the production of paper and cardboard: 2
- Slaughterhouses: 1
- Treatment and processing intended for the production of food products from vegetable raw materials: 1
- Installations for the intensive rearing of poultry: 3

Also, there are 14 units that fall under the provisions of the SEVESO Directive.

### **Livestock**

According to the 2007 census in the RBD of Thrace were bred:

- 847.511 sheep and goats, mainly free range
- 74.107 cattle
- 54.931 pigs
- 1.459.677 poultry, mainly in farms with a capacity of more than 1,000 animals.

### **Landfill Sites – Uncontrolled Waste Dumping Sites**

In the RBD of Thrace operate 2 Landfills (Landfills of Xanthi and Komotini).

According to the reported data of the Ministry of Environment, Energy and Climate Change (March 2012), there are 2 active Uncontrolled Waste Dumping Sites (Aniforia site in Didymoticho Municipality and Mayrotopos site in Alexandroupoli Municipality), as well as 3 inactive ones, where their rehabilitation is of top priority (Xiropotamos site in Nestos Municipality, Mega Rema site in Soufli Municipality and Ampelia site in Orestiada Municipality).

### **Mines – Quarry**

In the RBD of Thrace operate:

- 2 slate quarries
- 7 aggregate quarries
- 9 quarries of industrial minerals (clay, hornstone) and
- 80 marble quarries

Of them, only one quarry has an exploitation license over an area of more than 25 ha.

As for sand extraction, it is performed in a large number of watercourses either legally or illegally. Extensive sand extraction has taken place in the rivers Kompsatos, Kosynthos, Lissos and Vozvozis.

Regarding the mining activity, today there is no active exploitation. In the past, mining activity took place in the mixed sulfur mine of Agios Filippos, northeast of the village of Circe in Alexandroupolis Municipality. The abandoned mine has not been restored.

### **Aquacultures**

Within the limits of the RBD of Thrace there are 26 exploitable lagoons. Of these, 18 are under exploitation, while under exploitation is also the lake Ismarida. The most important area under



exploitation is Vistonida lake with an area of 4.500 ha. Very important fishing grounds are the lagoons Agiasma, Eratino, Vassova in the Keramoti broader area and the lagoons of Rhodope (Porto Lagos, Lagos, etc.)

The vast majority of aquaculture is centered on mussel farming in coastal waters. There are 9 mussel farms in the Eastern Gulf of Kavala CWB, 7 in the Northern Coast of Thasos Canal CWB and 6 in the Vistonikos Gulf CWB. There are also 5 inland fish farms of rainbow trout (*Oncorhynchus mykiss*) in 4 RWBS.

### **Agriculture**

Agriculture uses 28% of the total area the RBD of Thrace (more than 3.000 Km<sup>2</sup>), from which 44% is irrigated. The vast majority of agricultural land relates to arable crops (93,7%). Tree plantations amount to 6% of the agricultural land and vineyards to 0,3%. With regard to arable crops, the largest areas are related to grain, cotton and maize. The most important horticultural crop is asparagus. The most important tree crop is the olive groves.

### **Abstraction**

The largest water abstractions from surface WBs in the Thrace RBD are conducted for the supply of irrigation networks that have been developed in the lowlands of the RBD and particularly in the valley of Nestos and the riparian areas of Evros, Ardas and Erythropotamos. Abstractions from surface WBs for agricultural purposes are conducted, in their vast majority, by abstraction works of collective irrigation networks managed by Local Land Reclamation Organisations or General Land Reclamation Organisations of the region.

**Table 7: Abstractions from Surface WBs in the RBD of Thrace**

SWB code	SWB Name	Use	Volume (m <sup>3</sup> /yr)
GR1207R0002000005N	Nestos	Irrigation	111.619.000
		Industry (hydropower)	120.000.000
GR1208R0000010068N	Kompsatos	Irrigation	1.657.000
GR1209L000003H	Gratini Reservoir	Industry (Komotini thermal power station)	8.000.000
GR1209R0000030090N	Xionorema	Drinking water supply	3.500.000
GR1210L000004H	Aisymi Reservoir	Drinking water supply	6.500.000
GR1210R00111200158N	Erythropotamos	Irrigation	4.259.000
GR1210R0B131600174H	Ardas	Irrigation	149.319.000
GR1210R0T020000136N	Evros	Irrigation	37.271.000
GR1210R0T020000138N	Evros	Irrigation	33.014.000

GWBs exhibiting conditions of quantitative degradation due to overpumping is the southern part of the GWB Filiouris, the western and eastern part of GWB Xanthi- Komotini and the south - southeast of GWB Nestos . In the rest of the GWB, level fluctuation of groundwater aquifers presents seasonal

variations related to periods of high and low groundwater levels without showing any long-term downward trend.

The average annual inflow of the major GWBs of the RBD of Thrace amounts to  $852 \cdot 10^6 \text{ m}^3$  and annual abstractions to  $158 \cdot 10^6 \text{ m}^3$ . **The water balance of the GWBs is positive and annual water abstraction is generally less than the annual replenishment of the underground aquifers.**

#### **Water flow regulations and river management**

In the RBD of Thrace there is a series of flow-regulating works. Some are associated with water storage reservoirs, such as Thisavros and Platanovrisi Reservoirs, others are low weirs for flow regulation and water abstraction for irrigation, such as the Toxotes dam on the Nestos River and the Therapio dam on Ardas River. There are also several water storage works of small scale (e.g. Komara, Neo Sidirochori, Askites dams). The main water flow control works are presented in the following table.

**Table 8: Water flow regulation works in the RBD of Thrace**

Work	Type/Use	WB Name	Comments
Thisavros Dam	Hydroelectric Dam	Nestos	Water flow regulation
Platanovrysi Dam	Hydroelectric Dam	Nestos	
Gratini Dam	Komotini Thermal plant cooling/irrigation	Amygdalorema	Reduction of downstream flow due to abstraction
Aisymi Dam	Alexandroupolis water supply	Loutros	
Symvola Abstraction works	Komotini water supply	Xionorema	
Toxotes Dam	Irrigation	Nestos	
Ardas Dam	Irrigation	Ardas	

The impact of these projects varies depending on the use they serve. Hydroelectric dams cause changes in the dynamics of downstream flow but they don't reduce the downstream quantities, as long as they do not divert water.

The smaller water storage projects like Gratini and Aisymi dams divert quantities of water to uses that serve causing beyond the flow regulation and impairment of the available downstream quantities.

Finally, there are water flow regulation projects with limited control options (weirs with gates or not, such as Toxotes dam on Nestos Rivers and Therapio dam on Ardas River) that are designed to allow diversions of irrigation water. These projects do not constitute major hydromorphological pressures for the SWBs because they don't create significant storage while their flow control ability is limited. The abstractions for irrigation water supply that are carried out with their help constitute pressure which in some cases is significant.

### **Summary**

Diffuse pollution from agriculture, livestock and settlements not serviced with sewerage and wastewater treatment facilities is the main source of pollution for SWBs and GWBs. There is a number of SWBs that is affected from transboundary pollution or their pollution source is not yet identified. Water abstraction is significant in 2 SWBs while hydromorphological pressures are significant in 11 SWBs.



## **8. STATUS OF WATER BODIES**

### **8.1 Assessment and classification of status of surface water bodies**

The assessment and classification of the status of SWBs have been made according to available monitoring data pursuant to 2000/60/EC and 2008/105/EC Directives as well as to Common Ministerial Decision 51354/2641/E103/2010 that has set Environmental Quality Standards for the classification of ecological and chemical status.

“Surface water status” is the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status.

“Good surface water status” means the status achieved by a surface water body when both its ecological status and its chemical status are at least “good”.

#### **8.1.1 Surface water bodies ecological status**

Ecological status mainly concerns biological parameters, depending on WB category, and secondly general physico-chemical conditions or other parameters (specific pollutants).

As mentioned in paragraph 6.1 in the Thrace RBD there are 166 natural SWBs:

- Eleven (11) Coastal Water Bodies of a total area of 726,4 Km<sup>2</sup>
- One (1) Lake Water Body of a total area of 1,9 Km<sup>2</sup>
- Five (5) Transitional Water Bodies of a total area of 279,8 Km<sup>2</sup>
- One hundred forty nine (149) River Water Bodies of a total length of 1484,3 Km

The natural SWBs in the Thrace RBD that are not in “good” status are estimated in fifty six (56) from a total of one hundred sixty six (166). More specifically:

- The ecological status of seventy seven (77) rivers, with a total length of 670,9 km, which corresponds to 45,2% of the total length of the natural rivers of the RBD, is classified as “good or high”, while the ecological status of forty eight (48) rivers, with a total length of 588,2 km, which corresponds to 39,6% of the total length of the natural rivers of the RBD is classified as less than good. Due to the lack of data, the ecological status of twenty four (24) rivers, with total length 225,2 km, which corresponds to 15,2% of the total length, of the natural rivers of the RBD was not determined.
- The ecological status of Ismarida Lake, with a surface of 1,9 km<sup>2</sup>, is classified as “poor”.
- All transitional water bodies (5) are classified as “moderate” ecological status.

- The ecological status of eight (8) coastal waters, with total surface 545,3 km<sup>2</sup>, which corresponds to 75,1% of the total surface of the natural coastal waters of the RBD, is classified as “high or good”, while the ecological status of two (2) coastal waters, with total surface 118,2 km<sup>2</sup>, which corresponds to 16,3% of the surface of the natural coastal waters of the RBD is classified as “moderate”. Due to the lack of data, the ecological status of Vistonikos Gulf was not determined.

#### **8.1.2 Surface water bodies chemical status**

Chemical status is directly related to the presence of priority substances in surface waters and can be characterized as:

- **“Good”**, when all parameters meet the Environmental Quality Standards set out in Common Ministerial Decree 51354/2641/E103/2010, Annex 1, Part A.
- **"Failing to achieve good"**, when even one of the parameters does not meet the Environmental Quality Standards set out in Common Ministerial Decree 51354/2641/E103/2010, Annex 1, Part A.

Due to the lack of data related to the monitoring of priority substances in the WBs of RBD of Thrace, the chemical status of a significant number of WBs is not classified (“unknown”). More specifically:

- Eighteen (18) rivers, with a total length of 345,3 km, which corresponds to 23,3% of the total length of the natural rivers of the RBD, are failing to achieve good chemical status. Four (4) rivers, with a total length of 15,4 km, which corresponds to 1% of the total length of the natural rivers of the RBD, are in good chemical status. Due to the lack of data, the chemical status of one hundred twenty seven (127) rivers is not classified (75,7% of the total length of the natural rivers of the RBD).
- Due to the lack of data, the chemical status of all natural coastal and lake water bodies was not unclassified.
- Four (4) transitional water bodies are failing to achieve good chemical status (41,1% of the surface of the natural transitional waters of the RBD), while the chemical status of one (1) transitional water body was not determined (58,9% of the surface of the natural transitional waters of the RBD).

The results of the classification of ecological, chemical and total status for each SWB, are presented in the table below.

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**Table 9: Classification of the natural SWBs status of the RBD of Thrace**

WB category	WB code	WB Name	Ecological status	Chemical Status	Status
CW	GR1207C0001N	Eastern Gulf of Kavala	Moderate	Unknown	Moderate
CW	GR1207C0002N	Northern Coast of Thasos Canal	Moderate	Unknown	Moderate
CW	GR1207C0003N	Abdira Shore	Good	Unknown	Unknown
CW	GR1208C0004N	Vistonikos Gulf	Unknown	Unknown	Unknown
CW	GR1208C0005N	Western Coast of Thrace Sea	Good	Unknown	Unknown
CW	GR1210C0006N	Eastern Coast of Thrace Sea	Good	Unknown	Unknown
CW	GR1210C0008N	Alexandroupolis Coast	Good	Unknown	Unknown
CW	GR1210C0009N	Evros Coast	Good	Unknown	Unknown
CW	GR1242C0010N	Islet	High	Unknown	Unknown
CW	GR1242C0011N	Samothraki Coast	High	Unknown	Unknown
CW	GR1242C0012N	Thasos Coast	High	Unknown	Unknown
LW	GR1209L000006N	Ismarida Lake	Poor	Unknown	Poor
RW	GR1207R0002000005N	Nestos P.	Poor	Failing to achieve good	Poor
RW	GR1207R0002000006N	Nestos P.	Poor	Failing to achieve good	Poor
RW	GR1207R0002020003N	Xerorema R.	Unknown	Unknown	Unknown
RW	GR1207R0002040007N	Mavromyths R.	Good	Unknown	Unknown
RW	GR1207R0002060008N	Kato Rema	Good	Unknown	Unknown
RW	GR1207R0002080009N	Xrysorema	Moderate	Unknown	Moderate
RW	GR1207R0002100010N	Anonymo R.	Unknown	Unknown	Unknown
RW	GR1207R0002120011N	Melissochorioy R.	Good	Unknown	Unknown
RW	GR1207R0002120012N	Melissochorioy R.	Good	Unknown	Unknown
RW	GR1207R0002140013N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002140014N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002140020N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002140117N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002140118N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002140215N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002140216N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002140319N	Arkoydorema	Good	Unknown	Unknown
RW	GR1207R0002160022N	Diaboloirema	Moderate	Failing to achieve good	Moderate
RW	GR1207R0002160027N	Diaboloirema	Good	Unknown	Unknown
RW	GR1207R0002160123N	Diaboloirema	Good	Unknown	Unknown
RW	GR1207R0002160224N	Diaboloirema	Good	Unknown	Unknown
RW	GR1207R0002160225N	Diaboloirema	Good	Unknown	Unknown
RW	GR1207R0002160326N	Diaboloirema	Good	Unknown	Unknown
RW	GR1207R0002180028N	Megalo R.	Good	Unknown	Unknown
RW	GR1207R0002180031N	Megalo R.	Good	Unknown	Unknown
RW	GR1207R0002180032N	Megalo R.	Good	Unknown	Unknown
RW	GR1207R0002180129N	Megalo R.	Good	Unknown	Unknown
RW	GR1207R0002180230N	Megalo R.	Good	Unknown	Unknown
RW	GR1207R0002200033N	Petrrema	Good	Unknown	Unknown
RW	GR1207R0002200034N	Petrorema	Good	Unknown	Unknown
RW	GR1207R0002220035N	Myloy R.	Good	Unknown	Unknown
RW	GR1207R0002240036N	Bathy R.	Good	Failing to achieve good	Moderate
RW	GR1207R0002240037N	Bathy R.	Good	Unknown	Unknown
RW	GR1207R0002240038N	Bathy R.	Good	Unknown	Unknown

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WB category	WB code	WB Name	Ecological status	Chemical Status	Status
RW	GR1207R0002260039N	Nestos P.	Good	Unknown	Unknown
RW	GR1207R0002280142N	Despaths P.	Good	Unknown	Unknown
RW	GR1207R0002280143N	Despaths P.	Good	Unknown	Unknown
RW	GR1207R0002280244N	Despaths P.	Good	Unknown	Unknown
RW	GR1207R0002280245N	Despaths P.	Good	Unknown	Unknown
RW	GR1207R0002280346N	Despaths P.	Good	Unknown	Unknown
RW	GR1207R0002280347N	Despaths P.	Good	Unknown	Unknown
RW	GR1207R0002280348N	Despaths P.	Good	Unknown	Unknown
RW	GR1207R0002300049N	Myloreyma	Moderate	Unknown	Moderate
RW	GR1207R0B02000040N	Nestos P.	Moderate	Failing to achieve good	Moderate
RW	GR1208R0000000057N	Kosynthos R.	Poor	Unknown	Poor
RW	GR1208R0000000059N	Kosynthos R.	Good	Unknown	Unknown
RW	GR1208R0000000069N	Kompsatos R.	Unknown	Unknown	Unknown
RW	GR1208R0000000073N	Kompsatos R.	Unknown	Unknown	Unknown
RW	GR1208R0000000076N	Kompsatos R.	Unknown	Unknown	Unknown
RW	GR1208R0000010064N	Ammorema	Good	Unknown	Unknown
RW	GR1208R0000010065N	Kompsatos R.	Poor	Failing to achieve good	Poor
RW	GR1208R0000010066N	Kompsatos R.	Poor	Failing to achieve good	Poor
RW	GR1208R0000010067N	Kompsatos R.	Poor	Failing to achieve good	Poor
RW	GR1208R0000010068N	Kompsatos R.	Unknown	Unknown	Unknown
RW	GR1208R0000020053N	Megalo R.	Poor	Unknown	Poor
RW	GR1208R0000020054N	Megalo R.	Good	Unknown	Unknown
RW	GR1208R0000020082N	Kompsatos R.	Good	Unknown	Unknown
RW	GR1208R0000040058N	Kosynthos R.	Good	Unknown	Unknown
RW	GR1208R0000040083N	Kompsatos R.	Good	Unknown	Unknown
RW	GR1208R0000060070N	Xeropotamos R.	Unknown	Unknown	Unknown
RW	GR1208R0000060071N	Xeropotamos R.	Unknown	Unknown	Unknown
RW	GR1208R0000060072N	Thermo Loytro R.	Good	Unknown	Unknown
RW	GR1208R0000080074N	Rodophgh R.	Good	Unknown	Unknown
RW	GR1208R0000080075N	Rodophgh R.	Good	Unknown	Unknown
RW	GR1208R0000090060N	Kosynthos R.	Good	Unknown	Unknown
RW	GR1208R0000090061N	Megalo R.	Good	Unknown	Unknown
RW	GR1208R0000100077N	Kremmydorema R.	Good	Unknown	Unknown
RW	GR1208R0000120078N	Rematia R.	Good	Unknown	Unknown
RW	GR1208R0000130079N	Kompsatos R.	Unknown	Unknown	Unknown
RW	GR1209R0000010084N	Mpospos P.	Poor	Failing to achieve good	Poor
RW	GR1209R0000010085N	Mpospos P.	Poor	Failing to achieve good	Poor
RW	GR1209R0000020087N	Karydorema	Moderate	Unknown	Moderate
RW	GR1209R0000020088N	Karydorema	Good	Unknown	Unknown
RW	GR1209R0000030089N	Xionorema	Poor	Failing to achieve good	Poor
RW	GR1209R0000030090N	Xionorema	Good	Failing to achieve good	Moderate
RW	GR1209R00010100113N	Plataniths R.	Unknown	Unknown	Unknown
RW	GR1209R00020000106N	Fylirhs P.	Moderate	Unknown	Moderate
RW	GR1209R00020000111N	Fylirhs P.	Good	Unknown	Unknown



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WB category	WB code	WB Name	Ecological status	Chemical Status	Status
RW	GR1209R0002020092N	Fylirhs P.	Moderate	Unknown	Moderate
RW	GR1209R00020400101N	Sidhrorema	Good	Unknown	Unknown
RW	GR1209R0002040096N	Sidhrorema	Moderate	Unknown	Moderate
RW	GR1209R0002040098N	Sidhrorema	Moderate	Unknown	Moderate
RW	GR1209R00020402100N	Amygdalorema	Unknown	Unknown	Unknown
RW	GR1209R00020600103N	Mikrorrema	Moderate	Unknown	Moderate
RW	GR1209R00020800105N	Xerorema R.	Moderate	Unknown	Moderate
RW	GR1209R00021000107N	Melissorema	Moderate	Unknown	Moderate
RW	GR1209R00021000109N	Melissorema	Moderate	Unknown	Moderate
RW	GR1209R00021000110N	Melissorema	Good	Unknown	Unknown
RW	GR1209R00021001108N	Melissorema	Good	Unknown	Unknown
RW	GR1209R00021200112N	Aleporema	Good	Unknown	Unknown
RW	GR1210R00020100116N	Eirhnh R.	Unknown	Unknown	Unknown
RW	GR1210R00020100124N	Xylas R.	Unknown	Unknown	Unknown
RW	GR1210R00020100125N	Xylas R.	Unknown	Unknown	Unknown
RW	GR1210R00020100127N	Xylas R.	Good	Unknown	Unknown
RW	GR1210R00020100128N	Xylas R.	Good	Unknown	Unknown
RW	GR1210R00020100129N	Xylas R.	Good	Unknown	Unknown
RW	GR1210R00020100130N	Xylas R.	Good	Unknown	Unknown
RW	GR1210R00020100131N	Xylas R.	Good	Unknown	Unknown
RW	GR1210R00020200140N	Provatonas	Moderate	Unknown	Moderate
RW	GR1210R00020400142N	Mavrorema	Good	Unknown	Unknown
RW	GR1210R00020600143N	Diabolorema	Moderate	Unknown	Moderate
RW	GR1210R00020600145N	Diabolorema	Moderate	Unknown	Moderate
RW	GR1210R00020600146N	Lygaria R.	Good	Unknown	Unknown
RW	GR1210R00020600147N	Diabolorema	Good	Unknown	Unknown
RW	GR1210R00020600148N	Damaskinies R.	Good	Unknown	Unknown
RW	GR1210R00020600149N	Libadia R.	Good	Unknown	Unknown
RW	GR1210R00020601144N	Kamilopotamos	Moderate	Unknown	Moderate
RW	GR1210R00020800150N	Kazani R.	Moderate	Unknown	Moderate
RW	GR1210R00020800151N	Kazani R.	Moderate	Unknown	Moderate
RW	GR1210R00021000152N	Potistikon R.	Moderate	Unknown	Moderate
RW	GR1210R00021000154N	Potistikon R.	Moderate	Unknown	Moderate
RW	GR1210R00021000155N	Potistikon R.	Moderate	Unknown	Moderate
RW	GR1210R00021000156N	Potistikon R.	Moderate	Unknown	Moderate
RW	GR1210R00021001153N	Potistikon R.	Moderate	Unknown	Moderate
RW	GR1210R00021400168N	Xeron R.	Moderate	Unknown	Moderate
RW	GR1210R00021400173N	Xeron R.	Moderate	Unknown	Moderate
RW	GR1210R00021401170N	Xeron R.	Moderate	Unknown	Moderate
RW	GR1210R00030100115N	Araphs R.	Unknown	Unknown	Unknown
RW	GR1210R00050100117N	Eirhnh R.	Unknown	Unknown	Unknown
RW	GR1210R00050200118N	Apokrhmnno R.	Unknown	Unknown	Unknown
RW	GR1210R00050300119N	Eirhnh R.	Unknown	Unknown	Unknown
RW	GR1210R00090300123N	Bathy R.	Unknown	Unknown	Unknown
RW	GR1210R00111200157N	Erythropotamos R.	Moderate	Failing to achieve good	Moderate
RW	GR1210R00111200158N	Erythropotamos R.	Moderate	Unknown	Moderate
RW	GR1210R00111200161N	Erythropotamos R.	Moderate	Unknown	Moderate
RW	GR1210R00111200178N	Erythropotamos R.	Good	Unknown	Unknown
RW	GR1210R00111200179N	Erythropotamos R.	Good	Unknown	Unknown

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WB category	WB code	WB Name	Ecological status	Chemical Status	Status
RW	GR1210R00111201177N	Erythropotamos R.	Moderate	Unknown	Moderate
RW	GR1210R00111202159N	Kazantz R.	Moderate	Unknown	Moderate
RW	GR1210R00111202160N	Kazantz R.	Moderate	Unknown	Moderate
RW	GR1210R00111203163N	Erythropotamos R.	Good	Unknown	Unknown
RW	GR1210R00111204165N	Erythropotamos R.	Good	Unknown	Unknown
RW	GR1210R00111209166N	Erythropotamos R.	Good	Unknown	Unknown
RW	GR1210R0B111200162N	Erythropotamos R.	Good	Unknown	Unknown
RW	GR1210R0B111200164N	Erythropotamos R.	Good	Unknown	Unknown
RW	GR1210R0B151900176N	Ebros R.	Moderate	Failing to achieve good	Moderate
RW	GR1210R0T020000136N	Ebros R.	Moderate	Failing to achieve good	Moderate
RW	GR1210R0T020000138N	Ebros R.	Moderate	Failing to achieve good	Moderate
RW	GR1210R0T020000167N	Ebros R.	Moderate	Failing to achieve good	Moderate
RW	GR1210R0T020100133N	Ebros R.	Moderate	Failing to achieve good	Moderate
RW	GR1242R00020100180N	Anonymo R.	Unknown	Unknown	Unknown
RW	GR1242R00040100181N	Portes R.	Unknown	Unknown	Unknown
RW	GR1242R00060100182N	Kaminorema	Unknown	Unknown	Unknown
RW	GR1242R00060100183N	Kaminorema	Unknown	Unknown	Unknown
RW	GR1242R00080100184N	Dipotamos R.	Unknown	Unknown	Unknown
RW	GR1242R00100100185N	Giali R.	Good	Good	Good
RW	GR1242R00100100186N	Giali R.	Good	Good	Good
RW	GR1242R00100100187N	Anonymo R.	Good	Good	Good
RW	GR1242R00100100188N	Fonias R.	High	Good	High
TW	GR1207T0001N	Coastal Lagoon Of Keramotis Wider Area	Moderate	Failing to achieve good	Moderate
TW	GR1207T0002N	Keramoti Coastal Lagoon	Moderate	Failing to achieve good	Moderate
TW	GR1207T0003N	Nestos Delta	Moderate	Failing to achieve good	Moderate
TW	GR1208T0004N	Rodopi - Porto Lagos Coastal Lagoon	Moderate	Failing to achieve good	Moderate
TW	GR1210T0005N	Evros Delta	Moderate	Unknown	Moderate

## 8.2 Assessment and classification of groundwater bodies status

“Groundwater status” is the general expression of the status of a body of groundwater, determined by the poorer of its quantitative status and its chemical status.

“Good groundwater status” means the status achieved by a groundwater body when both its quantitative status and its chemical status are at least ‘good’.

### 8.2.1 Groundwater bodies quantitative status

All of the eighteen (18) Groundwater Bodies (GWBs) are in good quantitative status.

### 8.2.2 Groundwater bodies chemical status

The chemical status of four (4) GWBs is classified as “poor”. The surface of these WBs covers about 1.875,6 km<sup>2</sup>, corresponding to 18% of the total groundwater surface of the RBD of Thrace.

The results of the classification of quantitative and chemical status for each GWB are presented in the table below.

**Table 10: Quantitative –chemical status for each GWB in RBD of Thrace**

GWB Code	GWB Name	Quantitative status	Chemical status	Status
GR12BT010	Orestiada	Good	Good	Good
GR120T020	Evros river adjacent area and Delta	Good	Poor	Poor
GR1200030	Makri	Good	Good	Good
GR1200040	Filiouris	Good	Poor	Poor
GR1200050	Xanthi - Komotini	Good	Poor	Poor
GR1200060	Nestos Delta	Good	Poor	Poor
GR1200070	Oroi Lekanis	Good	Good	Good
GR1200080	Thassos	Good	Good	Good
GR120B090	Potamoi - Stavroupoli	Good	Good	Good
GR120B100	Drosinio	Good	Good	Good
GR1200110	Maroneia	Good	Good	Good
GR1200120	Rhodope	Good	Good	Good
GR1200130	Alexandroupolis	Good	Good	Good
GR1200140	Evros	Good	Good	Good
GR12BT150	Soufli - Didimoticho	Good	Good	Good
GR1200160	Thassos - Prinos	Good	Good	Good
GR1200170	Samothraki	Good	Good	Good
GR1200180	Samothraki - Xiropotamos	Good	Good	Good

### **8.3 Heavily modified and Artificial water bodies potential**

For HMWBs and AWBs the reference conditions on which status classification is based are called "Maximum Ecological Potential (MEP)". The MEP represents the maximum ecological quality that could be achieved for a HMWB or AWB once all mitigation measures, that do not have significant adverse effects on its specified use or on the wider environment, have been applied. HMWB and AWB are required to achieve "good ecological potential" (GEP) and good surface water chemical status. GEP accommodates "slight" changes in the values of the relevant biological quality elements at MEP.

In the context of the current RBMP, for all cases where GEP for the Mediterranean ecoregion has not yet been defined in the Intercalibration Exercise (e.g. for heavily modified RWBs), the ecological potential and chemical status of the identified HMWBs and AWBs are considered as similar to the ecological and chemical status of natural surface water bodies that most closely resemble the HMWBs/AWBs.

The HMWBs and AWBs in the Thrace RBD that are not in "good" potential are estimated in thirty seven (37) from a total of forty five (45). Moreover, twenty (20) of them are failing to achieve good chemical status. More specifically:

- The ecological potential of one (1) HM RWB, with total length of 19.6 km, which corresponds to 6% of the total length of the HM and A RWBs of the RBD, is classified as "good and above", while the ecological potential of thirty four (34) HM and A RWBs, with total length of 274.6 km, which corresponds to 84.3% of the total length of the HM and A RWBs of the RBD is classified as less than good. Due to the lack of data, the ecological potential of four (4) HM and A RWBs, with total length of 31.7 km, which corresponds to 9.7% of the total length, of the non-natural rivers of the RBD was not determined. Seventeen (17) HM and A RWBs are failing to achieve good chemical status (51.2% of the total length of the HM and A RWBs of the RBD) while the chemical status of twenty two (22) HM and A RWBs is not classified (48.8% of the total length of the HM and A RWBs of the RBD)
- The ecological potential of three (3) HM lake water bodies was classified as "moderate" and their chemical status is failing to achieve good (their area corresponds to 89.5% of the total area of the HM lakes of the RBD). The ecological potential and chemical status of two (2) HM lake water bodies was not classified (their area corresponds to 10.5% of the total area of the total HM lakes of the RBD).

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- The ecological potential and chemical status of “Alexandroupolis Port” heavily modified coastal water body was not classified.

The results of the classification of the potential and chemical status for each heavily modified and artificial water body are presented in the table below.

**Table 11: Classification of HMWBs and AWB status of RBD of Thrace**

SWB category	SWB code	WB name	Ecological potential	Chemical Status	Status
CW	GR1210C0007H	ALEXANDROUPOLIS PORT	Unknown	Unknown	Unknown
LW	GR1207L000001H	THISAVROS RESERVOIR	Moderate	Less than good	Moderate
LW	GR1207L000002H	PLATANOBRSI RESERVOIR	Moderate	Less than good	Moderate
LW	GR1209L000003H	GRATINI RESERVOIR	Unknown	Unknown	Unknown
LW	GR1209L000005H	N. ADRIANIS RESERVOIR	Unknown	Unknown	Unknown
LW	GR1210L000004H	ESYMI RESERVOIR	Moderate	Less than good	Moderate
RW	GR1207R0002000002H	NESTOS P.	Poor	Less than good	Poor
RW	GR1207R0002000004H	NESTOS P.	Poor	Less than good	Poor
RW	GR1207R0002010001H	NESTOS P.	Poor	Less than good	Poor
RW	GR1207R0002150021H	NESTOS P.	Poor	Less than good	Poor
RW	GR1207R0005010050H	LASPIAS R.	Poor	Unknown	Poor
RW	GR1207R0005010051H	LASPIAS R.	Poor	Unknown	Poor
RW	GR1207R0B02280041H	DESPATHS P.	Good and above	Less than good	Moderate
RW	GR1208R0000010052A	KOSYNTHOS R.	Poor	Less than good	Poor
RW	GR1208R0000010062H	AMMOREMA	Poor	Unknown	Poor
RW	GR1208R0000010063H	AMMOREMA	Poor	Unknown	Poor
RW	GR1208R0000010080H	ASPROPOTAMOS R.	Poor	Less than good	Poor
RW	GR1208R0000010081H	ASPROPOTAMOS R.	Poor	Less than good	Poor
RW	GR1208R0000030055A	KOSYNTHOS R.	Poor	Less than good	Poor
RW	GR1208R0000030056A	KOSYNTHOS R.	Poor	Less than good	Poor
RW	GR1209R0000020086H	KARYDOREMA	Moderate	Unknown	Moderate
RW	GR1209R00020000102H	FYLIRHS P.	Moderate	Unknown	Moderate
RW	GR1209R0002000091H	FYLIRHS P.	Poor	Less than good	Poor
RW	GR1209R0002030093H	FYLIRHS P.	Poor	Less than good	Poor
RW	GR1209R0002030094H	FYLIRHS P.	Poor	Less than good	Poor
RW	GR1209R0002030095H	FYLIRHS P.	Moderate	Less than good	Moderate
RW	GR1209R0002040097A	SIDHROREMA	Moderate	Unknown	Moderate
RW	GR1209R0002040199H	AMYGDALOREMA	Moderate	Unknown	Moderate
RW	GR1209R00020800104H	XEROREMA R.	Moderate	Unknown	Moderate
RW	GR1210R00020100126H	XYLAS R.	Poor	Unknown	Poor
RW	GR1210R00020200139H	PROVATONAS	Moderate	Unknown	Moderate
RW	GR1210R00020300132A	EBROS R.	Unknown	Unknown	Unknown
RW	GR1210R00020400141H	MAVROREMA	Moderate	Unknown	Moderate
RW	GR1210R00021400171H	XERON R.	Moderate	Unknown	Moderate
RW	GR1210R00021400172H	XERON R.	Moderate	Unknown	Moderate
RW	GR1210R00021401169H	XERON R.	Moderate	Unknown	Moderate
RW	GR1210R00030100114H	ARAPHS R.	Poor	Unknown	Poor
RW	GR1210R00090100120H	BATHY R.	Unknown	Unknown	Unknown
RW	GR1210R00090100121H	BATHY R.	Unknown	Unknown	Unknown
RW	GR1210R00090100122H	BATHY R.	Unknown	Unknown	Unknown
RW	GR1210R00131601175H	ARDAS P.	Moderate	Unknown	Moderate

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SWB category	SWB code	WB name	Ecological potential	Chemical Status	Status
RW	GR1210R0B131600174H	ARDAS P.	Moderate	Less than good	Moderate
RW	GR1210R0T020100134H	EBROS R.	Moderate	Unknown	Moderate
RW	GR1210R0T020100135H	EBROS R.	Moderate	Less than good	Moderate
RW	GR1210R0T020100137H	EBROS R.	Moderate	Less than good	Moderate

#### 8.4 Classification results of WBs status of the RBD of Thrace

The number and the percentage of the WBs that will meet the environmental objectives of the WFD, as well as those that will fail to achieve a “good” status, as a result of any type of pressure (point and/or diffuse sources of pollution, abstraction, etc.) for all the WB categories (rivers, lakes, transitional, coastal, groundwater), are presented in the table below.

**Table 12: Statistical data of WB status of the RBD of Thrace**

Type of WB	Status								
	Number of WBs			WB Percentage			Surface or length Percentage		
	High or Good	Less than good*	Unknown	High or Good	Less than good*	Unknown	High or Good	Less than good*	Unknown
Coastal	0	2	10	0%	17%	83%	0%	16%	84%
Lake	0	4	2	0%	67%	33%	0%	90%	10%
River	4	85	99	2%	45%	53%	1%	50%	49%
Transitional	0	5	0	0	1	0	0%	100%	0%
Groundwater	14	4	0	78%	22%	0%	82%	18%	0%

\*“Less than good” corresponds status that may be “moderate”, “poor” or “bad” for SWBs, or “poor” for GWBs.

#### 8.5 Monitoring Program

##### 8.5.1 Monitoring of surface waters

##### 8.5.2 Officially established monitoring program for surface waters

The monitoring programme included in the Joint Ministerial Decision 140384/2011 provides in total of fifty seven (57) monitoring sites; forty one (41) for surveillance and sixteen (16) for operational monitoring, for the surface waters of the RBD of Thrace.

##### 8.5.3 Revised Monitoring program for surface waters

The design of the Revised Monitoring Programme for surface waters was based on the new information obtained under the RBMP, i.e. new water bodies, the analysis of anthropogenic pressures and their impact, the determination of the ecological and chemical status of surface waters and the inventory of protected areas. This programme is optimized both in terms of the monitoring

sites selected, as well as the type of the programme, the parameters monitored and their frequency of monitoring.

#### **8.5.4 Monitoring of groundwaters**

#### **8.5.5 Officially established monitoring program for groundwaters**

The monitoring programme included in the Joint Ministerial Decision 140384/2011 provides in total of seventy nine (79) monitoring sites; twenty six (26) for surveillance and fifty three (53) for operational monitoring, for the surface waters of the RBD of Thrace.

#### **8.5.6 Updated Monitoring program for groundwaters**

The design of the revised Monitoring programme for groundwaters was based on the basis of the officially established monitoring programme as well as the data elaborated under the RBMP and specifically, the characterization of GWBs, the analysis of anthropogenic pressures and their impacts, the inventory of protected areas, and the status classification of GWBs.





## **9. ECONOMIC ANALYSIS OF WATER USES**

The purpose of the economic analysis is to analyze the relationship of humans with water as an economic resource in the study area within the framework of the Directive 2000/60. Hence a description of the water uses and their economic importance was presented based on data and information from the water district. Trends were presented, too.

The principle of cost recovery for water services, including environmental cost and resource cost was taken into account in order to ensure that different water uses contribute to cost recovery (Article 9, Annex III).

Therefore, the financial cost, which includes expenditures on the procurement and management of water services (operating costs, maintenance costs, administrative expenses, depreciation, and other direct costs), the resource cost, which is based on estimates of water deficits and economic values of infrastructure or other measures for ensuring additional water resources and the non-priced environmental cost, using cost-based valuation methods, i.e. the cost of measures that should be taken to prevent environmental damage, are included in the analysis, in accordance with the objectives of the directive. Subsidies were taken into account, too.

The general formula for calculating the cost recovery rate for water services used was:  
$$CRR = \frac{TR - \text{Subsidy}}{TC} * 100\%$$
where CRR is the Cost Recovery Rate, TR the total revenues (in €/year), Subsidy the total amount of subsidies paid to the water service, and TC the economic costs (in €/year) of the water service provided.

Initially the financial cost recovery was analyzed and then the overall cost-recovery was estimated. The analyses were conducted for water uses and services, in order to facilitate the application of the "polluter-pays" principle. Due to the institutional and legislative structure and organization of the water service providers it was not possible to accurately reflect the revenue and expenditure (and hence cost recovery assessment) separately for water supply and sewerage services, as well as industry, household water supply and irrigation in some cases: water and sewerage services providers manage those services as one –determining their accounting systems as well as their pricing policies. Also they manage their viability consistently. So the cost recovery presentation is driven by the institutional form of the providers, although the economic analysis took a per use and service approach in more detail through assumptions.

The level of cost recovery is presented in following Tables (2010):

**Table 13: Level of financial cost recovery of water uses**

Water Use	Before Subsidies, Grants	After Subsidies, Grants
Drinking water supply (supply of Industrial areas not included)	98%	120%
Komotini and Alexandroupolis Industrial Areas	19%	19%
Irrigation	90%	93%
Total	96%	114%

**Table 14: Level of total cost recovery (financial and environmental) of water uses**

Water Use	Before Subsidies, Grants	After Subsidies, Grants
Drinking water supply – Wastewater treatment, Municipal Enterprises for Water Supply and Sewerage	94%	119%
Drinking water supply – Wastewater treatment, Municipalities	96%	120%
Irrigation, Local Land Reclamation Organisations or General Land Reclamation Organisations	62%	65%
Irrigation, Municipalities	41%	43%
Total	79%	96%

It must be noted that in the above indicators of total cost recovery, the environmental cost is included but the resource cost is null for RBD GR11 since the district presents a surplus of water availability vs. total demand. The Industrial Areas while lagging considerably in the degree of recovery of the relevant gross financial cost, they account for a very small percentage (less than 2%) of total water consumption and the related financial inflows and outflows.

Generally in the RBD the following are observed:

- The drinking water supply and drainage approximately recover all the gross total costs (financial and environmental).
- The irrigation shows significant cost recovery shortfall.
- Cost recovery is not recorded in livestock, since there are no charges to offset the environmental cost.

The economic analysis identified data collection issues and data gaps issues. The economic analysis conclusions produced specific measures.

## 10. ENVIRONMENTAL OBJECTIVES – EXEMPTIONS

In Article 4 paragraphs 4.4, 4.5, 4.6 and 4.7 of the WFD, a list of possible exemptions from the environmental objectives and a description of the terms and processes for their application is provided. The types of exemptions are:

- Article 4.4: Extension of the time limit
- Article 4.5: A less strict environmental objective
- Article 4.6: Temporary deterioration in status
- Article 4.7: New Modifications- Activities

Implementation of Article 4.4 (extended deadline) exemption is proposed for eighty eight (88)<sup>1</sup> SWBs and for four (4) GWBs from the total WBs of the RBD of Thrace that are included in the list of “exemptions”. The extended deadline for every water body that consists an “exemption” is based on a justification and it depends on the nature of the problem, and the measures needed for the achievement of “good status” by 2015.

In the River Basin Management Plan of Thrace, there are 2 projects, that will have an impact on the achievement of environmental objectives of nine (9) WBs, and that are expected to be completed by 2015 (Article 4.7: New Modifications- Activities):

- Iasio Dam in Rhodope Prefecture

The project will irrigate 2.000 ha of agricultural land that is currently either not irrigated or poorly irrigated by drilling.

- Iasmos Dam in Rhodope Prefecture

The project will irrigate 25.500 ha of agricultural land that is currently either not irrigated or partially and incompletely irrigated by drilling and by surface waters of Kompsatos.

Other programmed or new projects that had not been examined for their compatibility with the WFD guidelines or as exemptions according to Article 4.7, they will be examined under the Environmental Permitting procedure.

The type and the exemption justification for each WB exempted, and the applied measures are presented in the tables below.

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<sup>1</sup> there are 3 SWBs that are both Article4(4) -Technical feasibility and Article4(7) - New modifications exemptions

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**Table 15: Measures, status and type of exemption for each Surface water body exempted**

No	SWB code	SWB Name	Current Status			2015			Supplementary measures	Type of exemption
			Eco. Stat/Pot.	Chem. Stat.	Total Status	Eco. Stat/Pot	Chem. Status	Total Status		
1	GR1207C0001N	Eastern Gulf Of Kavala	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM16-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
2	GR1207C0002N	Northern Coast of Thasos Canal	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM16-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
3	GR1207L000001H	Thisavros Reservoir	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
4	GR1207L000002H	Platanobrisi Reservoir	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
5	GR1209L000006N	Ismarida Lake	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM07-05, RBD12-SM07-07, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
6	GR1210L000004H	Aisymi Reservoir	Moderate	Failing to achieve good	Moderate	Good	Failing to achieve good	Moderate	RBD12-SM07-09, RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
7	GR1207R0002000002H	Nestos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM11-01, RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-04, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-04	Article4(4) -Technical feasibility
8	GR1207R0002000004H	Nestos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM11-01, RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-04, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-04	Article4(4) -Technical feasibility
9	GR1207R0002000005N	Nestos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM11-01, RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-04, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-04	Article4(4) -Technical feasibility
10	GR1207R0002000006N	Nestos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM11-01, RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-04, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-04	Article4(4) -Technical feasibility
11	GR1207R0002010001H	Nestos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM11-01, RBD12-SM15-01, RBD12-SM16-02, RBD12-SM16-03,	Article4(4) -Technical feasibility

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No	SWB code	SWB Name	Current Status			2015			Supplementary measures	Type of exemption
			Eco. Stat/Pot.	Chem. Stat.	Total Status	Eco. Stat/Pot	Chem. Status	Total Status		
									RBD12-SM16-04, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-04	
12	GR1207R0002150021H	Nestos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM11-01, RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-04, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-04	Article4(4) -Technical feasibility
13	GR1207R0002160022N	Diabolorema	Moderate	Failing to achieve good	Moderate	Good	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
14	GR1207R0002240036N	Bathy R.	Good	Failing to achieve good	Moderate	Good	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
15	GR1207R0005010050H	Laspias R.	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
16	GR1207R0005010051H	Laspias R.	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
17	GR1207R0B02000040N	Nestos P.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-04, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-04	Article4(4) -Technical feasibility
18	GR1207R0B02280041H	Despaths P.	Good and above	Failing to achieve good	Moderate	Good	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-03, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
19	GR1208R0000000057N	Kosynthos R.	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
20	GR1208R0000000069N	Kompsatos R.	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown		Article4(7) - New modification
21	GR1208R0000010052A	Kosynthos R.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
22	GR1208R0000010062H	Ammorema	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
23	GR1208R0000010063H	Ammorema	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
24	GR1208R0000010065N	Kompsatos R.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(7) - New modification & Article4(4) -Technical feasibility
25	GR1208R0000010066N	Kompsatos R.	Poor	Failing to achieve	Poor	Poor	Failing to achieve	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01,	Article4(7) - New modification &

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No	SWB code	SWB Name	Current Status			2015			Supplementary measures	Type of exemption
			Eco. Stat/Pot.	Chem. Stat.	Total Status	Eco. Stat/Pot	Chem. Status	Total Status		
				good			good		RBD12-SM18-02	Article4(4) -Technical feasibility
26	GR1208R0000010067N	Kompsatos R.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(7) - New modification & Article4(4) -Technical feasibility
27	GR1208R0000010068N	Kompsatos R.	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown		Article4(7) - New modification
28	GR1208R0000010080H	Aspropotamos R.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
29	GR1208R0000010081H	Aspropotamos R.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
30	GR1208R0000020053N	Megalo R.	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM07-05, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
31	GR1208R0000020082N	Kompsatos R.	Good	Unknown	Unknown	Good	Unknown	Unknown		Article4(7) - New modification
32	GR1208R0000030055A	Kosynthos R.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
33	GR1208R0000030056A	Kosynthos R.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
34	GR1208R0000040083N	Kompsatos R.	Good	Unknown	Unknown	Good	Unknown	Unknown		Article4(7) - New modification
35	GR1209R0000010084N	Mpospos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
36	GR1209R0000010085N	Mpospos P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
37	GR1209R0000020086H	Karydorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
38	GR1209R0000020087N	Karydorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
39	GR1209R0000030089N	Xionorema	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
40	GR1209R0000030090N	Xionorema	Good	Failing to achieve	Moderate	Good	Failing to achieve	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility

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No	SWB code	SWB Name	Current Status			2015			Supplementary measures	Type of exemption
			Eco. Stat/Pot.	Chem. Stat.	Total Status	Eco. Stat/Pot	Chem. Status	Total Status		
				good			good			
41	GR1209R00020000102H	Fylirhs P.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
42	GR1209R00020000106N	Fylirhs P.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-03	Article4(4) -Technical feasibility
43	GR1209R0002000091H	Fylirhs P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-02, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
44	GR1209R0002020092N	Fylirhs P.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-02, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
45	GR1209R0002030093H	Fylirhs P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-02, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
46	GR1209R0002030094H	Fylirhs P.	Poor	Failing to achieve good	Poor	Poor	Failing to achieve good	Poor	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
47	GR1209R0002030095H	Fylirhs P.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM07-05, RBD12-SM07-08, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-03	Article4(4) -Technical feasibility
48	GR1209R0002040096N	Sidhrorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
49	GR1209R0002040097A	Sidhrorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
50	GR1209R0002040098N	Sidhrorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-03	Article4(4) -Technical feasibility
51	GR1209R0002040199H	Amygdalorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM16-03, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
52	GR1209R00020600103N	Mikrorrema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
53	GR1209R00020800104H	Xerorema R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-03	Article4(7) - Sustainable human development
54	GR1209R00020800105N	Xerorema R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(7) - New modification
55	GR1209R00021000107N	Melissorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
56	GR1210R00020100126H	Xylas R.	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility

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No	SWB code	SWB Name	Current Status			2015			Supplementary measures	Type of exemption
			Eco. Stat/Pot.	Chem. Stat.	Total Status	Eco. Stat/Pot	Chem. Status	Total Status		
57	GR1210R00020200139H	Provatonas	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
58	GR1210R00020200140N	Provatonas	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
59	GR1210R00020400141H	Mavrorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
60	GR1210R00020600143N	Diabolorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
61	GR1210R00020600145N	Diabolorema	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
62	GR1210R00020601144N	Kamilopotamos	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
63	GR1210R00020800150N	Kazani R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
64	GR1210R00020800151N	Kazani R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
65	GR1210R00021000152N	Potistikon R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
66	GR1210R00021000154N	Potistikon R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
67	GR1210R00021000156N	Potistikon R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
68	GR1210R00021001153N	Potistikon R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
69	GR1210R00021400168N	Xeron R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
70	GR1210R00021400171H	Xeron R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
71	GR1210R00021400172H	Xeron R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
72	GR1210R00021400173N	Xeron R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
73	GR1210R00021401169H	Xeron R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
74	GR1210R00021401170N	Xeron R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
75	GR1210R00030100114H	Araphs R.	Poor	Unknown	Poor	Poor	Unknown	Poor	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
76	GR1210R00111200157N	Erythropotamos R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility



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No	SWB code	SWB Name	Current Status			2015			Supplementary measures	Type of exemption
			Eco. Stat/Pot.	Chem. Stat.	Total Status	Eco. Stat/Pot	Chem. Status	Total Status		
77	GR1210R00111200158N	Erythropotamos R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
78	GR1210R00111200161N	Erythropotamos R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
79	GR1210R00111202159N	Kazantz R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
80	GR1210R00131601175H	Ardas P.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
81	GR1210R0B131600174H	Ardas P.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
82	GR1210R0B151900176N	Ebros R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
83	GR1210R0T020000136N	Ebros R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
84	GR1210R0T020000138N	Ebros R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
85	GR1210R0T020000167N	Ebros R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
86	GR1210R0T020100133N	Ebros R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-02, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
87	GR1210R0T020100134H	Ebros R.	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
88	GR1210R0T020100135H	Ebros R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
89	GR1210R0T020100137H	Ebros R.	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
90	GR1207T0001N	Coastal Lagoon Of Keramotis Wider Area	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM07-05, RBD12-SM07-07, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
91	GR1207T0002N	Keramoti Coastal Lagoon	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM07-05, RBD12-SM07-07, RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
92	GR1207T0003N	Nestos Delta	Moderate	Failing to	Moderate	Moderate	Failing to	Moderate	RBD12-SM07-05, RBD12-SM07-07,	Article4(4) -Technical

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No	SWB code	SWB Name	Current Status			2015			Supplementary measures	Type of exemption
			Eco. Stat/Pot.	Chem. Stat.	Total Status	Eco. Stat/Pot	Chem. Status	Total Status		
				achieve good			achieve good		RBD12-SM15-01, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	feasibility
93	GR1208T0004N	Rodopi - Porto Lagos Coastal Lagoon	Moderate	Failing to achieve good	Moderate	Moderate	Failing to achieve good	Moderate	RBD12-SM07-05, RBD12-SM07-06, RBD12-SM07-07, RBD12-SM15-01, RBD12-SM16-05, RBD12-SM16-06, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
94	GR1210T0005N	Evros Delta	Moderate	Unknown	Moderate	Moderate	Unknown	Moderate	RBD12-SM07-01, RBD12-SM07-02, RBD12-SM07-03, RBD12-SM07-04, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility

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**Table 16: Measures, status and type of exemption for each for each Ground water body exempted**

GWB code	GWB name	Current Status			2015 Status			Supplementary measures	Type of exemption
		Quantitative status	Chemical status	Status	Quantitative status	Chemical status	Status		
GR120T020	Evros river adjacent area and Delta	Good	Poor	Poor	Good	Poor	Poor	RBD12-SM04-01, RBD12-SM05-02, RBD12-SM08-01, RBD12-SM08-02, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
GR1200040	Filiouris	Good	Poor	Poor	Good	Poor	Poor	RBD12-SM04-01, RBD12-SM05-03, RBD12-SM08-01, RBD12-SM08-02, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02, RBD12-SM18-03	Article4(4) -Technical feasibility
GR1200050	Xanthi - Komotini	Good	Poor	Poor	Good	Poor	Poor	RBD12-SM04-01, RBD12-SM05-01, RBD12-SM05-02, RBD12-SM08-01, RBD12-SM08-02, RBD12-SM14-02, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility
GR1200060	Nestos Delta	Good	Poor	Poor	Good	Poor	Poor	RBD12-SM04-01, RBD12-SM05-02, RBD12-SM08-01, RBD12-SM08-02, RBD12-SM14-01, RBD12-SM15-01, RBD12-SM18-01, RBD12-SM18-02	Article4(4) -Technical feasibility

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In conclusion, only for seven (7) RWBs will improve their ecological status until 2015.

The exemptions, per WB category in RBD of Thrace, are presented below (2015).

**Table 17: Rivers exemption**

Type of Exemption	% percentage of WBs total length	Justification	% percentage of WBs of each justification	Comments
Article 4.4	46,4%*	1) Technical feasibility 2) Disproportionate cost 3) Natural conditions	1) 100% 2) 0% 3) 0%	
Article 4.5	0%	1) Technical feasibility 2) Disproportionate cost	1) - 2) -	
Article 4.6	0%	1) Natural causes (floods, droughts) 2) Unforeseen circumstances 3) Accidents	1) - 2) - 3) -	
Article 4.7	3,1%	1) New modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater 2) New sustainable human development activities	1) 88,9%  2) 11,1%	

*\*there are 3 RWBS that are both Article 4.7 and Article 4.4 (due to their chemical status) exemptions*

**Table 18: Lakes exemption**

Type of Exemption	% percentage of WBs total surface	Justification	% percentage of WBs of each justification	Comments
Article 4.4	90,4%	1) Technical feasibility 2) Disproportionate cost 3) Natural conditions	1) 100 2) - 3) -	
Article 4.5	0%	1) Technical feasibility 2) Disproportionate cost	1) - 2) -	
Article 4.6	0%	1) Natural causes (floods, droughts) 2) Unforeseen circumstances 3) Accidents	1) - 2) - 3) -	
Article 4.7	0%	1) New modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater 2) New sustainable human development activities	1) -  2) -	

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**Table 19: Coastal WBs exemption**

Type of Exemption	% percentage of WBs total surface	Justification	% percentage of WBs of each justification	Comments
Article 4.4	16,2%	1) Technical feasibility 2) Disproportionate cost 3) Natural conditions	1) 100% 2) 0% 3) 0%	
Article 4.5	0%	1) Technical feasibility 2) Disproportionate cost	1) - 2) -	
Article 4.6	0%	1) Natural causes (floods, droughts) 2) Unforeseen circumstances 3) Accidents	1) - 2) - 3) -	
Article 4.7	0%	1) New modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater 2) New sustainable human development activities	1) -  2) -	

**Table 20: Transitional WBs exemption**

Type of Exemption	% percentage of WBs total surface	Justification	% percentage of WBs of each justification	Comments
Article 4.4	100%	1) Technical feasibility 2) Disproportionate cost 3) Natural conditions	1) 100% 2) 0% 3) 0%	
Article 4.5	0%	1) Technical feasibility 2) Disproportionate cost	1) - 2) -	
Article 4.6	0%	1) Natural causes (floods, droughts) 2) Unforeseen circumstances 3) Accidents	1) - 2) - 3) -	
Article 4.7	0%	1) New modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater 2) New sustainable human development activities	1) -  2) -	

**Table 21: GWBs exemption**

Type of Exemption	% percentage of WBs total surface	Justification	% percentage of WBs of each justification	Comments
Article 4.4	18%	1) Technical feasibility 2) Disproportionate cost 3) Natural conditions	1) 100% 2) 0% 3) 0%	
Article 4.5	0%	1) Technical feasibility 2) Disproportionate cost	1) - 2) -	
Article 4.6	0%	1) Natural causes (floods, droughts) 2) Unforeseen circumstances 3) Accidents	1) - 2) - 3) -	

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Type of Exemption	% percentage of WBs total surface	Justification	% percentage of WBs of each justification	Comments
Article 4.7	0%	1) New modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater 2) New sustainable human development activities	1) -  2) -	

## **11. PROGRAMME OF MEASURES**

The program of measures is the key element of the River Basin Management Plan for the achievement of the 2000/60/EC Directive objectives. The measures are divided into basic and supplementary:

- **Basic measures** result from the implementation of national and European legislation on water protection, including 2000/60/EC Directive and the overall environmental policy.
- **Supplementary measures** include measures designed and implemented in addition to the basic measures.

The program of measures of the RBD of Thrace, that is proposed to be implemented by 2027, includes Basic measures required to implement Community legislation for the protection of water, forty-one (41) other Basic measures and thirty (30) supplementary measures for the protection of specific water bodies.

Basic measures required to implement Community legislation refer to the following Directives (*as they are amended and currently stand*):

- (i) The Bathing Water Directive (76/160/EEC)
- (ii) The Birds Directive (79/409/EEC)
- (iii) The Drinking Water Directive (80/778/EEC) as amended by Directive (98/83/EC)
- (iv) The Major Accidents (Seveso) Directive (96/82/EC)
- (v) The Environmental Impact Assessment Directive (85/337/EEC)
- (vi) The Sewage Sludge Directive (86/278/EEC)
- (vii) The Urban Waste-water Treatment Directive (91/271/EEC)
- (viii) The Plant Protection Products Directive (91/414/EEC)
- (ix) The Nitrates Directive (91/676/EEC)
- (x) The Habitats Directive (92/43/EEC) (5)
- (xi) The Integrated Pollution Prevention Control Directive (96/61/EC)

Other Basic Measures included in the Programme of measures fall in the following categories:

OM04: Measures deemed appropriate for the purposes of the Cost Recovery of water services (Article 9)

OM05: Measures to promote an efficient and sustainable water use

- OM06: Measures to meet the requirements of Article 7, including measures to safeguard water quality in order to reduce the level of purification treatment required for the production of drinking water
- OM07: Controls over the abstraction of fresh surface water and groundwater, and impoundment of fresh surface water
- OM08: Controls over artificial recharge or augmentation of groundwater bodies
- OM09: Measures for point source discharges liable to cause pollution
- OM10: Measures for diffuse sources liable to cause pollution
- OM11: Measures to prevent significant adverse impacts on the status of water (in particular measures to protect hydromorphological conditions)
- OM12: Measures prohibiting direct discharges of pollutants into groundwater
- OM13: Measures to eliminate pollution from priority substances
- OM14: Measures to prevent significant losses of pollutants from technical installations, and to prevent and/or to reduce the impact of accidental pollution incidents

The Supplementary measures included in the program of measures fall in the following categories:

- SM04: Negotiated environmental agreements
- SM05: Emission controls
- SM07: Recreation and restoration of wetlands areas
- SM08: Abstraction Controls
- SM14: Artificial recharge of aquifers
- SM15: Educational measures
- SM16: Research, development and demonstration projects (best practices)
- SM18: Other measures

The cost of these measures is estimated as follows:

- 110.48 mil. € for the measures taken in application of Community legislation for the protection of water
- 56.37 mil. € for the other Basic measures
- 45.44 mil. € for supplementary measures for the protection of specific water bodies
- Total cost of proposed measures: 212.29 mil. €



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Proposed Other Basic Measures for Thrace RBD are presented in the table below:

**Table 22: Other Basic measures of Thrace RBD**

No	Measure Code	Measure Title/ Description	Category
1	RBD12_OM04_01	<b>Adaptation of pricing policies so as to avoid waste of water and serve in a flexible way the objective of environmental sustainability</b> Formulation of a common pricing policy for refined water for domestic use in order to curb wasting water and gradually recover the cost of water, taking into account social and environmental parameters.	OM04
2	RBD12_OM05_01	<b>Actions for the modernization of the water supply network operation for big urban agglomerations of the water district. Leakages control</b> The control of leakages in the water supply networks aims at detecting leaks and preventing great losses of water. It is supported by the OPESD, in the framework of the Priority Axis 2 "Water Resources Protection and Management", within the Invitation 2.6 "Leakages Minimization projects in problematic urban water supply networks", with a budget of 60 million Euros and a time horizon for project implementation until 2015. Leakages of any type due to defective connections or damages on pipelines, illegal connections, measurement errors, due to defective water meters or merely the absence of water meters, contribute to a non-pricing of water, which the Municipal Enterprises for Water Supply and Sewerage have estimated to be between 35 % and 70%. Methods for the detection of water losses in water distribution networks should be implemented under the responsibility of the Municipal Enterprises for Water Supply and Sewerage on an on-going basis. The detection should be followed by the repair and restore of the proper operation. The installation of water meters and/or replacement of the defective ones should be promoted. Projects involving such actions have already been integrated in the OPESD. However, such actions must be generalized as a priority in all Municipal Enterprises for Water Supply and Sewerage, where losses in the water distribution network of more than 50% occur. Indicatively, such projects for the Municipal Enterprises for Water Supply and Sewerage of Komotini, Orestiada and Nestos are integrated in the OPESD (the city of Kavala has also submitted a relevant request) and should be promoted with responsibility of the competent authorities. In order to extend such actions to other Municipal Enterprises for Water Supply and Sewerage, initially the losses on networks should be recorded by the respective Municipal Enterprises under the supervision of the Direction of Water and the area priorities should be set, so that similar projects can be launched within the next programming period.	OM05
3	RBD12_OM05_02	<b>Projects for restoration / reinforcement of water supply network</b> The measure refers to the restoration of old damaged water pipes and to the reinforcement of external water supply reservoirs in order to cover increased water supply demand. Some projects concerning the improvement / expansion of the water supply network in new agglomerations or growing municipalities have already been integrated in the OPESD (more than 40 similar projects). These projects, aiming at the effective covering of the increasing water needs in agglomerations and municipalities, are priority projects for the implementation of the Directive. The competent authorities are held responsible for the promotion of them as well as of all similar projects.	OM05
4	RBD12_OM05_03	<b>Development of the legislative framework and of Program of Measures for residential water saving</b> The potential for water saving at residences has been investigated in the	OM05

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No	Measure Code	Measure Title/ Description	Category
		<p>framework of the project “Technical Support to the General Secretariat for Water for the preparation of a Programme of Measures and of the Institutional framework for Residential Water savings”, funded by the OPESD.</p> <p>The implementation of residential water saving programs leads to the promotion of new technologies for water reuse and conservation. The relevant study, which has been completed, indicated that simple interventions in the household equipment can achieve important water savings (at least 30% in individual households and around 10% in total). The Ministry of Environment, Energy and Climate Change, through the Special Secretariat for Water, started at April of 2014 examining the development of an Institutional Framework and Program of Measures for residential water savings.</p> <p>The measures promoted are of institutional, regulatory, financial και demonstrating character. The New Building Code foresees already the installation of water saving equipment (which will be specified by decisions of the Minister of Environment, Energy and Climate Change) in new residences.</p>	
5	RBD12_OM05_04	<p><b>Reorganization / Rationalization of the institutional framework for the operation of the collective irrigation networks management bodies</b></p> <p>The framework for the operation of the Land Reclamation Organisations was enacted in 1958 and since then has been amended / supplemented by a series of acts. Nowadays, these organizations have, in their great majority, serious malfunctions due partly to the non-implementation of the legislative framework for the operation and partly to the outdated organisational structure.</p> <p>The measure refers to the formulation of proposals and institutional changes associated with the upgrade of operation and the update of the institutional framework of Local Land Reclamation Organisations / General Land Reclamation Organisations, so that they are adapted to the current administrative structure of the State and that the irrigation water management is substantially improved.</p> <p>Towards this direction, the Directorate for Utilization of Land Reclamation Projects and Equipment of the Ministry of Rural Development and Food has already elaborated a relevant legislative regulation, which has been sent to the Ministry of Interior for consultation with all competent Ministries.</p>	OM05
6	RBD12_OM05_05	<p><b>Strengthening of the actions to reduce losses in collective irrigation networks</b></p> <p>It is necessary to: (1) optimize the irrigation programme through the cooperation of the Local Land Reclamation Organization with the farmers, so that the irrigation during the hours of the day with a very high temperature is avoided. If it is necessary, it is also suggested to update the irrigation programmes after recommendation of the Regional Authority and in collaboration with the supervising department of the Local Land Reclamation Organization. It is noted that the Local Land Reclamation Organizations are already obliged by the existing legislative framework to develop timeschedules and irrigation programme.</p> <p>(2) The water transfer infrastructure should be maintained at a high standard, under the care of the Regional Authority and</p> <p>(3) The controls aiming at ensuring the proper implementation of the irrigation programmes should be intensified. It is proposed that the controls are conducted by the Body that supervises the Local Land Reclamation Organizations.</p>	OM05

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No	Measure Code	Measure Title/ Description	Category
7	RBD12_OM06_01	<p><b>Implementation of Water Safety Plans in big Municipal Enterprises for Water Supply and Sewerage</b></p> <p>The Water Safety Plans are a holistic approach related to the qualitative management of water from the water source to the distribution, adopting the principle of multiple barriers and focusing on the need for implementation of control measures in all links of the water supply chain. The Specifications for the implementation of the Water Safety Plans were developed in the framework of the project “Technical Support to the General Secretariat for Water of the Ministry of Environment, Energy and Climate Change for the recording of the problems for the implementation of the Directive 98/83/EC on the quality of drinking water in Greece and investigation of possibilities for the adoption of Water Safety Plans”, which was funded by the Operational Programme “Environment and Sustainable Development” (OPESD) and completed by 2011.</p> <p>It is proposed to implement the Water Safety Plans in big Municipal Enterprises for Water Supply and Sewerage, such as these of Alexandroupolis, Komotini, Xanthi, Orestiada, Nestos and Thasos aiming at safeguarding public health and adopting and implementing good practices in the drinking water supply network, through the minimization of pollutants in the drinking water and especially at its source, the right water treatment and distribution to water supply networks regardless the size of these networks.</p>	OM06
8	RBD12_OM06_02	<p><b>Group of measures for the protection of water abstraction of Symvola dam</b></p> <p>Until the completion of the Water Safety Plan by the Municipal enterprise</p> <ul style="list-style-type: none"> <li>• It is forbidden to discharge any liquid or solid waste in the Chionorema river bed upstream of the abstraction weir and independently of the degree of prior dilution or any other treatment</li> <li>• Livestock units of any size are forbidden within an area 300 m on either bank of Chionorema stream for the whole of its length upstream of the abstraction weir.</li> <li>• The unpaved road parallel to the watercourse upstream of the abstraction weir must be properly signposted to avert accidental pollution by passers-by.</li> <li>• The area upstream of the weir should be fenced along the unpaved road passing by the area to limit access to unauthorized persons and must be properly signposted.</li> <li>• Before implementing any technical works regardless of purpose within an area 300 m on either bank of the stream for its whole length upstream of the abstraction weir, the Municipal enterprise of Komotini should be informed. For this purpose it is proposed to copy the EIAs of all works and activities located in the above area to the Municipal enterprise for expressing opinion. The Municipal enterprise should coordinate its input with the competent water directorate.</li> </ul>	OM06
9	RBD12_OM06_03	<p><b>Group of measures for the protection of Aisymi reservoir</b></p> <p>Until the completion of the Water Safety plan by the Municipal enterprise three protection zones are proposed around the Aisymi reservoir with relevant restrictions on land uses and location of activities. The exact size and area of the protection zones will be determined by the Municipal enterprise of Alexandroupolis in cooperation with the water directorate.</p>	OM06

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10	RBD12_OM06_04	<p><b>Conduction / Update of the Water Supply Master plan by the Municipal Enterprises for Water Supply and Sewerage</b></p> <p>Conduction of the Masterplans regarding water supply, where the water resources are going to be determined. Those water resources are going to cover the water supply needs in a medium/long term basis. The appropriate protection measures are going to be implemented in time and the necessary external aqueducts are going to be designed in primary level. It is proposed that the Masterplans are going to be conducted by the Municipal Enterprises for Water and Sewerage, as the most pertinent body to this subject. The Masterplans must be conducted according to the RBMPs concerning the water bodies status and the rest program of measures. For this reason it must be assented by the competent Water Directorate.</p>	OM06
11	RBD12_OM06_05	<p><b>Detailed delineation of protection zones of groundwater abstraction points (springs, boreholes) for drinking water abstractions &gt; 1.000.000 m<sup>3</sup> per year</b></p> <p>Detailed delineation of protection zones of groundwater abstraction points (springs, drillings) for drinking water abstractions &gt; 1.000.000 m<sup>3</sup> per year (Municipalities of Xanthi, Nestos, Komotini, Maronia-Sapes, Mikis, Soufli, Didymoticho, Orestiada, Alexandroupolis, Thasos, Avdira, Ariana, Iasmos and Topiros). The elaboration of special hydrogeological studies, after the completion of which the detailed delineation will be feasible, is a prerequisite.</p>	OM06
12	RBD12_OM06_06	<p><b>Delineation of protection zones for drinking water abstraction works</b></p> <p>In the drinking water abstraction infrastructure (drillings, springs, wells), and until the completion of the specific hydrogeological studies, temporary protection zones of water abstraction points are defined as follows:</p> <ul style="list-style-type: none"> <li>• <u>Zone of absolute protection I</u>: 10-20 m around the abstraction site.</li> <li>• <u>Zone of controlled protection II</u>: defined depending on the type of aquifer as follows: <ul style="list-style-type: none"> <li>▪ Karstic systems: 600 m upstream and both sides (recharge area) and 300m downstream of water abstraction site.</li> <li>▪ Fractured systems: 400 m upstream and on both sides (recharge area) and 200m downstream of water abstraction site.</li> <li>▪ Granular unconfined systems: perimeter with radius of 400m</li> <li>▪ Granular confined or semi-confined aquifers: perimeter with radius of 300m</li> </ul> <p>For the karstic and fractured systems in case no data is available regarding the piezometric level or the recharge area, a protection zone with radius equal to the abovementioned upstream distance is implemented.</p> </li> <li>• <u>Zone of protection III</u>: It refers to the recharge basin of the abstraction site and can be determined only by the aforementioned hydrogeological study.</li> </ul> <p>Activities in principle prohibited by zone:</p> <ul style="list-style-type: none"> <li>▪ <u>Protection zone I (absolute protection)</u>: The zone, which protects the immediate environment of the abstraction from pollution, is characterized as zone of full ban. Within this zone, all activities are prohibited, with the exception of the necessary works for the operation and maintenance of the water abstraction works.</li> <li>▪ <u>Protection zone II (controlled)</u>: This zone protects the drinking water mainly from the microbiological pollution (50-day zone) and from</li> </ul>	OM06

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		<p>the pollution cause by human activities or works that are dangerous due to their proximity with the abstraction site. Within this zone, all activities with high polluting risk, such as (indicatively) intensive agricultural activities using pesticides – agrochemicals, livestock facilities, industrial – handicraft facilities, facilities for treatment or transfer of wastewater or solid waste, garages, quarrying and mining activities, cemeteries, and generally any relevant activity that can be a potential pollution source equal or greater than the aforementioned, are prohibited.</p> <ul style="list-style-type: none"> <li>▪ <u>Protection zone III (supervised)</u>: It surrounds the zones I and II and develops throughout the recharge basin that feeds the underground aquifer from which the abstraction is supplied. In Zone III the existing legislation on water protection applies.</li> </ul> <p>The specifications for the aforementioned hydrogeological studies will be determined by the competent authorities, under the coordination of the General Secretariat for Water.</p>	
13	RBD12_OM06_07	<p><b>Protection of the groundwater systems included in the register of drinking water protected areas and definition of the protection legislative framework</b></p> <p>First, for the installation of new activities the prohibitions of the protection zone II of groundwater abstraction points for drinking with the exception of cemeteries, garages and parkings, and quarrying activities, are implemented.</p> <p>The installation of new activities may be permitted in specific locations after the submission of the hydrogeological study or report, depending on the size and category of the activity and after the positive decision issued by the competent Water Direction.</p> <p>Determination of the legislative protection framework, where the measures for the protection of the groundwater systems included in the register of protected areas will be adopted in detail.</p>	OM06
14	RBD12_OM07_01	<p><b>Revaluation of the legislative framework for water use licensing and construction of water resources development works</b></p> <p>The provisions of JMD 43504/2005 (Government Gazette No. 1784 B') and other relevant regulations should be revised in order to, among other things, (a) examine the compatibility of any water development project with the provisions of the River Basin Management Plan at an early stage for the timely information of stakeholders, and (b) to investigate the licensing procedure of water use for geothermal purposes.</p>	OM07
15	RBD12_OM07_02	<p><b>Creation of a common registry of licensed water abstractions through the process of issuing water use licenses</b></p> <p>This measure refers to the unification of the basic information collected by the Water Directorates when issuing water use licenses, mainly in relation to the location of the abstraction, the quantities abstracted and the water body affected, as well as information on the accountable person or persons, so that a rationalization of controls required for compliance with the terms and conditions of each license may be achieved. The information which should be included in the registry will be determined by SSW in cooperation with the Water Directorates. The registry will be available to the regional authorities so as to facilitate the necessary checks provided for such projects.</p>	OM07
16	RBD12_OM07_03	<p><b>Monitoring of surface water abstractions for water supply, irrigation and other uses from large consumers</b></p> <p>This measure refers to abstractions greater than 10 m<sup>3</sup> per day and</p>	OM07

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		includes the installation or modernization of existing recording equipment (water meters, water level loggers, etc.) at surface water abstraction projects. The associated necessary equipment will be determined upon issuing of a new water use license or renewal of an existing one and the relevant cost will be covered by the individual or entity that performs the abstraction of water; it is possible to provide suitable incentives for the implementation of this measure. The person or entity responsible shall be obliged to declare the start of operation of the metering equipment to the relevant Water Directorate. The measurements of the quantities of water abstracted annually will be communicated to the Water Directorate during the first ten days of October of each year.	
17	RBD12_OM07_04	<b>Establishment of criteria to determine the limit of total abstractions per surface water body</b> This measure is aimed at investigating the possibility of establishing a methodology and criteria for determining environmental flows downstream of major water projects based on the results of the National Monitoring Network on the status of surface water bodies in the country and having as goal the development of specific standards.	OM07
18	RBD12_OM07_05	<b>Implementation of total abstraction limits per groundwater body</b> The total annual abstraction per groundwater body are initially set as per the table of average annual abstractions for the GWBs included in the River Basin Management Plan. These limits can be differentiated by the Water Directorate based on the results of the National Monitoring Network of water status or following relevant targeted studies or investigations.	OM07
19	RBD12_OM07_06	<b>Prohibition of constructing new water abstraction works (boreholes, wells, etc.) for new water uses and for extending existing water use licenses within:</b> <ul style="list-style-type: none"> <li>• Groundwater bodies with quantitative status classified as “poor”</li> <li>• Areas serviced by collective irrigation networks</li> <li>• Protection zones (zones I and II) of potable water abstraction works.</li> </ul> In GWBs which have been determined to be in poor quantitative status, within areas serviced by collective irrigation networks and within the protection zones of drinking water abstraction points, new drilling should be forbidden in order to avoid further deterioration of their status and to protect these GWBs. This rule excludes special cases with priority to drinking water use projects and projects which can lead to a measurable decrease of abstraction from GWBs. Such projects will be reviewed and approved by the competent Water Directorate after submission of a documented hydrogeological desk study for abstractions less than 10 m <sup>3</sup> /day or a full hydrogeological study for abstractions greater than 10 m <sup>3</sup> /day. The technical specifications for the aforementioned hydrogeological studies will be determined by the competent authorities under the coordination of SSW. Within areas of collective irrigation networks, new borehole licenses may be granted to reinforce the collective irrigation network towards greenhouse water supply, protection against frost and other uses excluding irrigation.	OM07
20	RBD12_OM07_07	<b>Installation of groundwater abstraction monitoring systems</b> This measure requires the gradual installation of water meters in all forms of groundwater abstraction (boreholes, wells or spring water diversions) from which a volume of water equal to or greater than 10m <sup>3</sup> per day is abstracted, for the monitoring and control of groundwater abstractions. This measure refers to all individuals and legal entities	OM07



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		responsible for the operation of abstraction (e.g. Municipal Water and Sewerage Companies, Municipalities, Irrigation Boards, individuals). The cost of the necessary associated equipment will be covered by the abovementioned persons or entities, while it is possible to provide incentives for the implementation of the measure. The persons or entities responsible shall be obliged to declare the start of operation of the metering equipment to the relevant Water Directorate while large users (Municipal Water and Sewerage Companies, municipalities, industries, collective irrigation networks) are obliged to report to the Water Directorate the measurement data on the quantities annually abstracted within the first ten days of October of each year.	
21	RBD12_OM07_08	<p><b>Update of the Ministerial Decision Φ16/6631/1989 on the lower and upper limits of necessary quantities of irrigation water</b></p> <p>The Ministerial Decision Φ16/6631/1989 defined minimum and maximum necessary quantities for rational use of irrigation water, per category of crop and per River Basin District. These limits were calculated on a monthly basis for the period April - September and can also be applied cumulatively. The calculation of the necessary quantities was done by means of the Blaney – Griddle method. The update of the abovementioned Ministerial Decision is proposed, taking into account meteorological data from 1989 onwards, as well as the provisions of the River Basin Management Plans.</p>	OM07
22	RBD12_OM08_01	<p><b>Investigation of the conditions for application of artificial recharge of groundwater bodies as a measure to enhance the quantitative status and protect the quality of GWBs</b></p> <p>The artificial recharge of groundwater aquifers is an essential tool for addressing the quantitative reduction or qualitative degradation of GWBs which is caused by the various pressures on groundwater such as over-pumping, contamination, etc. This is an environmental action taking advantage of natural underground reservoirs, formed in the subsoil, for storing good quality water during the winter period to be available for use during the summer period of increasing demands. The implementation of artificial recharge aims to enhance the quantitative and qualitative upgrading of GWBs. The measure is also important due to its contribution to the mitigation and gradual repelling of the seawater intrusion front in coastal aquifers. The effectiveness of artificial recharge is determined by several factors such as the determination of the storage capacity of aquifers, the water availability in sufficient quantity for the needs of the application and in the desired quality compatible or better than the quality of the recharged groundwater body.</p> <p>The artificial recharge procedures described are based on the exploitation of good quality surface water and are not related to artificial recharge foreseen by the JMD 145116/8.3.2011 (Government Gazette No. 354 B'). For the implementation of artificial recharge applications it will be necessary to conduct a specific hydrogeological study which will investigate the depth of the aquifer, the presence or absence of superimposed strata, the hydraulic conductivity and the depth of enrichment. This study will incorporate the detailed design of the recharge program, the appropriate method and the best implementation procedures.</p> <p>Technical specifications for these Hydrogeological Studies of artificial recharge will be determined by the Special Secretariat for Water (SSW).</p>	OM08

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No	Measure Code	Measure Title/ Description	Category
23	RBD12_OM08_02	<p><b>Drafting of a Technical Specifications Manual for the implementation of the reuse methods</b></p> <p>Drafting of a Technical Specifications Manual for the implementation of the reuse methods foreseen in the Common Ministerial Decision 145116/2.3.2011 (OJ 354B) where the following will be indicatively determined:</p> <p>A) The description of the potential reuse methods, in which cases the implementation of each method is recommended, the minimum implementation requirements for each method, as well as the proper and effective Implementation practices.</p> <p>B) The reuse study and application procedures, i.e. the successive approach stages (expression of intent - preliminary study, Environmental Impact Assessment Study, Consultation of interested Parties, Technical implementation study, Licensing, Pilot implementation, implementation), as well as the specification of responsibilities of the stakeholders.</p>	OM08
24	RBD12_OM09_01	<p><b>Modernization of national legislation on the management of urban and industrial waste waters</b></p> <p>The Ministerial Decision E1b/221/1965 on the management of urban and industrial waste waters and its subsequent amendments was and still is even today, the basic institutional framework that governs the disposal of urban sewage and industrial and municipal waste waters. The Ministerial Decision E1b/221/1965 was characterized as an innovative institutional framework at its time, which, however, does not cover for the modern environmental policy. The relevant provisions of Articles 2, 7, 8, 12 and 14 of the Health Act No E1b/221/1965 (GG B'138) as amended, have already been repealed, while Article 59 of the Greek Law 4042/2012 describes its universal abolition, which however poses ambiguity on an eventual legal loophole. After co evaluating the above mentioned, the establishment of a modern legal framework for the management of urban and industrial waste water is proposed.</p>	OM09
25	RBD12_OM09_02	<p><b>Establishment/Designation of emissions limits at river basin level for priority substances and other pollutants included in JMD 51354/2641/E103/2010 as well as for physicochemical parameters in relation to the quality objectives set out in The River Basin Management Plans</b></p> <p>The aim of this measure is the designation of emission limit values for the priority substances and the other pollutants that are established in the Joint Ministerial Decision 51354/2641/E103/2010 and affect the surface water bodies. During the designation of the emission limit values, attention should be paid to the following:</p> <p>i The Environmental Quality Standards that are designated in terms of Annual Average concentration by the Joint Ministerial Decision 51354/2641/E103/2010.</p> <p>ii. The Guidance 91/271/EEC.</p> <p>iii. The dilution during the summer period, when the river discharge is minimum and also the dilution when the wastewater discharge from the industries or from other activities is maximum.</p> <p>iv. The sensitivity of the area.</p> <p>v. The daily and annual estimated pollution load of the companies.</p> <p>vi. The concentration of the basic parameters of the pollution load.</p> <p>vii. The correlation with the protected areas for drinking water.</p> <p>The Emission Limit Values will be the maximum values and the wastewater of the industries or other activities developed in the RBD</p>	OM09



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		<p>should conform to them in every case.</p> <p>Originally the Water Directorates should determine the rivers basins that are priority for their regions and then to price the activities that are essential in order to be implemented the appropriate researches and surveys in the next managing period.</p>	
26	RBD12_OM09_03	<p><b>Instruction of an institutional framework for the licensing of sewage tanks transport</b></p> <p>There is a need to adopt an integrated legal framework that will govern the licensing of tanker trucks that transport sewage, as the existing legal framework, does not require licensing for the work of collection and transportation of urban waste. According to an earlier decision of the Ministry of Infrastructure, Transport and Networks, the licensing of tanker trucks that transport sewage only required the issuance of a vehicle registration document, which only determines traffic issues. Severe problems arise from unmonitored management and uncontrollable disposal of urban waste transferred by the tanks to protected areas, biotopes, water bodies, surface water drains or sewers, landfills, fields etc. due to lack of a control mechanism .</p> <p>The measure involves the creation of a regulatory framework for the licensing of tanker trucks transporting sewage that will define special measures for the positioning and control of the tanker trucks.</p> <p>Indicatively: electronic monitoring for each tank, a register of licensed tanks, provision for crosschecking with industries in the area, provision for the expansion of the inspectors' network (defining the competent monitoring services and imposing strict penalties for environmental violations, (e.g. immediate collectable fines and escalation of the above with license withdraw and vehicle seizure), involvement of the municipalities, confirmation of the disposal of transported waste to a WWTP.</p>	OM09
27	RBD12_OM09_04	<p><b>Defining terms and conditions for connection of industries to sewerage networks / acceptance of industrial wastes in WWTP</b></p> <p>The management bodies of the sewerage networks and WWTP will have to issue sewerage networks operation rules or revise the existing ones in order to define the conditions for connection of industries to sewerage networks and/or terms for the reception of industrial wastes in WWTP. For the issuance of such regulations the opinion of the Water Directorate is required. The operating rules will be communicated to the Water Directorate, to the Special Secretariat for Water as well as to the competent for the relevant controls authorities of the Region.</p>	OM09
28	RBD12_OM09_05	<p><b>Promoting the design of central treatment units for agricultural and animal waste</b></p> <p>Originally the preparation of techno-economic studies and studies of scope per Regional Unit are recommended in order to investigate the sustainability for agricultural and animal waste as well as their preliminary location so as to allow launching of their construction.</p>	OM09
29	RBD12_OM09_06	<p><b>Development of a regulatory framework / guidelines for monitoring water quality in aquaculture units</b></p> <p>In the context of environmental licensing according to the Greek law 1650/86 as amended and in force with the Greek law .3010/2002 as well as protection and management of water bodies in accordance with the Greek law 3199/2003 and Presidential Decree 51/2007 the systematic monitoring of water quality in aquaculture units is provided for.</p> <p>The competent authorities for issuing environmental terms and water use licenses usually apply the JMD No. 46399/1352/27-6-1986 " Quality</p>	OM09

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No	Measure Code	Measure Title/ Description	Category
		required of surface water that are intended for : «drinking water», «bathing», «fish life in freshwater» and « shellfish waters », measuring methods, sampling frequency and analysis of surface water intended for drinking water, in compliance with the instructions of the Council of the European Communities 75/440/EEC, 76/160/EEC, 78/659/EEC, 79/923/EEC and 79/869/EEC" even though it does not relate with the fish life in the sea. It has also been observed that the decisions issued do not include unified terms as to monitoring the parameters for all the units. In this context it is proposed to issue unified guidelines defining the parameters of water and sediment that should be monitored at regular time intervals in aquaculture units of coastal and inland waters in order to protect and maintain the status of the water bodies.	
30	RBD12_OM09_07	<b>Specification of criteria for licensing new / expansion of existing aquaculture units</b> During the licensing process of new or the expansion of existing aquaculture units in water bodies whose status is characterized as bad, it must be demonstrated that in the immediate area of the units' installation, the status of the water bodies is good according to the Directive 2000/60/EC. The classification of the water bodies' status as bad is presumed by the Water Management Plans and the results of the National Monitoring Program of JMD 140384 (GG 2017/B/9.92011), which is in progress.	OM09
31	RBD12_OM09_08	<b>Specification of the process to control and designate zones for aquacultures in inland waters</b> This measure refers to establishing special specifications and issuing a regulatory act for the designation of zones for the development of inland waters aquaculture, implementation of operation checks (frequency, intensity, and infrastructure, waste), imposition of sanctions and fines in case of environmental conditions violations and / or illegal operation. The co-operation of the Special Secretariat for Water with the competent authorities of the Ministry of Rural Development and Food is required as well as with the competent authorities for environmental licensing.	OM09
32	RBD12_OM09_09	<b>Enhancement of the periodical audits of the coastal waters that are being pressured from stormwater outfalls and other pollution sources.</b> The monitoring program of the Directorate of Health and Social Care in every Regional Unit should be reviewed in order to expand the sampling period and therefore concentrate in coastal water bodies that are being pressured from stormwater outfalls and other pollution sources. The final aim is the adoption of a special program of periodical audits of the water that ends up to the sea. The sampling programming will be performed in collaboration with the Competent Division responsible for Waters and according to the provisions of the RBD Management Plans. The sampling results will be communicated to the abovementioned Division.	OM09
33	RBD12_OM09_10	<b>Establishment of a mandatory quality monitoring program of mine runoffs along the lines of landfills</b> The systematic quality monitoring of surface and groundwater affected by the operation of mines is proposed, including abandoned ones, based on the monitoring pattern followed for landfills.	OM09
34	RBD12_OM10_01	<b>Utilization of specialized tools for the rational use of fertilizers and water</b> Use of specialized tools for the determination of fertilizer treatment, from the program «Recording of nutrients, heavy metals and	OM10

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		Hydrodynamic Properties of Soils for the rational use of fertilizers and water and Production of Safe Products» of the Region of Eastern Macedonia and Thrace, by the departments of Agricultural Development to determine fertilizer inputs, taking into account new areas proposed for inclusion to the nutrient-zones under Directive 91/676/EEC. This tool has been developed for the regional units of Eastern Macedonia and Thrace and can be readily applied.	
35	RBD12_OM10_02	<p><b>Modernization of the institutional framework for sludge management from waste water treatment plants with emphasis on expanding the scope of its applications and review the quality characteristics of the applied sludge.</b></p> <p>The agricultural reuse of sludge is subject to the provisions of Directive 86/278/EK which has been incorporated to the National Law with the JMD 80568/4225/91 and amended by the JMD 114218/97 (GG-1016/B/17-11-97). The Public Consultation being completed in January 2012, the Draft Common Ministerial Decision entitled «Measures, conditions and procedures for the use of sludge which derives from domestic and urban sewage treatment as well as some wastewater, in compliance with the provisions of Council Directive 86/278/EEC of the European Communities » has been drafted thereafter. This Draft modernizes and expands the scope of JMD 80568/4225/91 and aims to maximize utilization of sludge and specifically to increase the potential applications of sludge in the form of soil enhancer in agriculture, forestry, urban and suburban green sites and landscape planning. Adoption of a modern institutional framework that will promote viability in the management of sludge and reduce the amount disposed in landfills is recommended.</p>	OM10
36	RBD12_OM11_01	<p><b>Determination of selected areas suitable for material abstraction for technical project needs.</b></p> <p>This measure deals with the problem of arbitrary interventions in streams across the whole country, in a rational and environmentally friendly way. The aim of the measure is to confront the hydromorphological pressures of the abovementioned WBs</p> <p>The conduction of a special study in every RB of the RBD is proposed, with the following main subjects:</p> <p>A) Determination of sediment concentration areas along the broad riverbed of the stream.</p> <p>B) Estimation of the available quantities in every region.</p> <p>C) Ecological evaluation per region with emphasis on the habitat types (structure, conservation status), on the flora species (herbaceous, shrubby and arboreal with emphasis on the arboreal in good conservation status) and on fauna habitats.</p> <p>D) Hierarchy of the concentration areas regarding the potential of material extraction taking into account the abovementioned.</p> <p>The study is proposed to be done with the responsibility on the competent Water Directorate of each RB. An assessment should be done regarding the need for Strategic Environmental Impact Assessment.</p> <p>The measure aims at the management of the sediment yield and at the regulation of the material extraction from stream bed, in a manner that both the sustainable exploitation of the resource and the maximum protection of the ecosystems developed on the WBs are ensured. It also aims at the protection of the coastline against erosion.</p> <ul style="list-style-type: none"> <li>• The implementation of this measure will be done as it is described below:</li> </ul>	OM11

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No	Measure Code	Measure Title/ Description	Category
		<p><b>Phase I (short-term):</b> Modernization of the legislative framework for material abstraction for technical project needs of the bed of water bodies, torrents and streams. For more about determination of selected areas suitable for material abstraction you can see also 42279/24/24.11.1938 (ФЕК В' 267)</p> <p><b>Phase II (short-term):</b> The Ministry of Environment, Energy and Climate Change will compose the specifications for a preliminary assessment per River Basin District, where the main criteria for distinguishing the three (3) zones of sediment deposition will be configured:</p> <p>Zone I: Zone of high capacity regarding sediment deposition, where sediment abstractions will be allowed.</p> <p>Zone II: Zone of medium capacity regarding sediment deposition, where sediment abstractions will be allowed under specific conditions.</p> <p>Zone III: Zone of low capacity regarding sediment deposition, where sediment abstraction will not be allowed.</p> <p>The criteria for distinguishing the abovementioned zones will mainly be hydromorphological, environmental and techno-economic as well as criteria for the management of the flood risk.</p> <p><b>Phase II (medium-term):</b> Conduction of a preliminary study per RB for the designation of the sediment deposition zones, according to the specifications that were defined in Phase I and to the conditions for the permitting for sediment extraction in zones I and II. The dynamics of the physical deposition process and the sediment transport should be co evaluated with the conditions required per zone. In protected areas the above study is properly adjusted in order to meet the requirements of the provisions according to which the institutionalization of the requirements was done, if such requirements exist.</p> <p>For the protection of the bed of the water bodies, until the aforementioned are implemented no more new aggregate abstractions are allowed in the following areas:</p> <ul style="list-style-type: none"> <li>• From the shore and the riparian zone of lakes,</li> <li>• From the areas where technical structures are located (e.g. bridges, dams, drainage or irrigation ditches) and in a distance of 500m upstream and 500m downstream of the structure, unless it is otherwise specified in the environmental permission of other projects or other existing provisions, or some other reasons regarding the protection or the maintenance of existing projects exists. Concerning the aggregate abstraction works, the position and the amount of abstracted material should be determined during the permitting procedure as well as the method and the timing of works.</li> </ul>	
37	RBD12_OM11_02	<p><b>Set up of an institutional framework for the determination of the terms of protection of inland recreational waters according to Article 6 of the WFD – Temporary regulation for new projects in inland water bodies that are included in the list of protected areas as recreational waters.</b></p> <p>The measure refers to the adoption of the necessary regulations that will contain the main criteria for the determination of the recreational waters according to Article 6 of the WFD in the inland waters and will determine the terms, the limitations and the conditions for the development of projects and activities on them.</p> <p>Until the enactment of the above institutional framework and the specification of the above terms, restrictions and conditions in inland water bodies included in the list of protected areas as recreational waters, the installation of small Hydroelectric projects and other projects of water intake is temporarily suspended.</p>	OM11

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No	Measure Code	Measure Title/ Description	Category
		In special cases the Water Directorate may authorize the installation of water intake and small hydroelectric projects in those areas if it is proved that the water body status is not affected, in accordance with the provisions of Article 4 of the WFD and also if the project feasibility is co evaluated with the existing and / or planned recreational activities. In this case the opinion of the Water Council of the Decentralized Administration is required.	
38	RBD12_OM12_01	<p><b>Creation of a single register of regions of wastewater disposal either through irrigation or through artificial recharge (Government Gazette 354/B/08.03.2011)</b></p> <p>Under the current institutional framework for the reuse of treated wastewater either through irrigation or through artificial recharge, the Water Directorate of the Decentralized Administration decides after the submission of the design study. The measure regards the creation of a registry of disposal areas, that will include the details of the body responsible for the construction of the project, the basic technical specifications, the Water Body affected as well as any additional monitoring measure and any data collected from monitoring that was possibly asked during the permitting procedure and was delivered to the Water Directorate. The determination of the information that should be included in the register will be determined from the Special Secretariat for Water in collaboration with the Water Directorates. The register will be available to the competent audit authorities of the Regional Unit in order to facilitate the programmed necessary audits of these projects.</p>	OM12
39	RBD12_OM13_01	<p><b>Register of pollution sources (emissions, discharges and leaks).</b></p> <p>According to the first paragraph of Article 5 of «List of emissions, discharges and leaks» of the JMD 51354/2641/E103 (GG 1909B/8.12.2010)« The Water Divisions of the Regions, based on information collected in accordance with Articles 5 and 11 of PD 51/2007, Regulation (EC) No 166/2006 and other available data, compile for each Water District or part of that District within their administrative boundaries, a List of emissions, discharges and leaks for all priority substances and pollutants listed in Part A of Annex I of this Decision, including their concentrations in sediment and biota, as appropriate.»</p> <p>In particular, in the context of developing a list of emissions, discharges and leaks setting up a register of pollution sources is proposed. This will include:</p> <ul style="list-style-type: none"> <li>a) registration of installations, activities and uses constituting sources of release for priority substances and specific pollutants in order to set up the relevant register,</li> <li>b) the description of the waste that is discharged regularly from specific sources accompanied by the chemical analysis of that waste,</li> <li>c) issuing circulars and other information actions for the staff of the competent departments for licensing and control</li> <li>d) updating the relevant licenses to various facilities.</li> </ul> <p>The register will include the list of emissions, discharges and leaks for all priority substances and pollutants set out in Appendix I to JMD 51354/2641/E103/2010 in accordance with the provisions of Article 5 of the JMD. The register records the potential sources of pollution and forms the basis for an action plan to reduce the above mentioned substances if the increased concentrations of certain substances are due to anthropogenic causes or natural processes it should be investigated in the context of that measure.</p> <p>In addition, the register will assist the licensing authorities with locating</p>	OM13

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No	Measure Code	Measure Title/ Description	Category
		all the bound plants and to proceed with the modification of the environmental licenses, where necessary and other relevant requirements deriving from the legislation.	
40	RBD12_OM14_01	<p><b>Reinforcement of synergies between the River Basin Management Plans and the Major Technological Accident Prevention Policy Plans provided for in the IPPC and SEVESO Directives</b></p> <p>Setting out of a major technological accident prevention policy plan, including ways to protect water bodies from major spills and accidents, especially WBs included in the register of protected areas as well as ways of dealing with such incidents in order to protect the ecosystem (e.g. NATURA 2000 areas), and human health (systems used for or intended for human consumption). Especially for high risk establishments, according to SEVESO, the internal emergency plans should include at least the following:</p> <ul style="list-style-type: none"> <li>• the WBs in the affected area, which should be visible as points of interest in defining protection areas (and in the relevant maps)</li> <li>• the specification of an early warning system (mobilization in the event of a serious incident) for the responsible water authorities of the Decentralized Administrations and the Regions for the management and protection of the corresponding WBs.</li> </ul> <p>Similar changes may be required in the external emergency plans setting out the measures to be taken outside of the establishment in which dangerous substances are produced, used, handled or stored. The external emergency plans implementing the major technological accident prevention policy of the General Plan of Civil Protection Agency, are reviewed, tested, and where necessary updated every three years and in any case whenever there is a significant change in the operation of the establishment or as required by the instructions of the General Secretariat for Civil Protection. Responsible for the preparation of the external emergency plans are the Directorates of Civil Protection of the Decentralized Administration that produce a plan for each Decentralized Administration area which is subsequently elaborated on a regional level within the administrative boundaries of each regional unit. In this context the relevant Water Directorate should send the approved River Basin Management Plan to: (a) the competent authority for environmental licensing of SEVESO establishments in order to initiate the process for updating these licenses according to the existing legislative framework and (b) to the competent Directorates and Offices of Civil Protection of the Decentralized Administration to deal with any necessary amendments to the external emergency plans.</p>	OM14
41	RBD12_OM14_02	<p><b>Design and implementation of a central warning and management system against pollution from accidents / natural events</b></p> <p>The measure includes strengthening of the activities of information, warning, control and rehabilitation, which will allow the correct procedures and actions to be taken in case of failure of projects such as urban wastewater treatment plants, industrial wastewater treatment plants, landfills, highways, etc. For better monitoring, control and management of water pollution incidents caused by accidents, it is proposed to establish a centralized control system at River Basin District level under the responsibility of the respective Water Directorate in collaboration with the regional unit of Civil Protection, where the operators of projects will refer to. Priority areas are zones of abstraction of drinking water, zones of economic interest (e.g. fish farms), bathing waters areas and protected areas.</p>	OM14



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Proposed Supplementary Measures for Thrace RBD are presented in the table below:

**Table 23: Supplementary measures of Thrace RBD**

No	Measure code	Measure Title/ Description	Category
1	RBD12_SM04_01	<p><b>Negotiated Environmental Agreements related to good water management between the public and private individuals who are large consumers of water</b></p> <p>The objective of this measure is to contribute towards the rational and sustainable water management and to reduce the pressures on water bodies due to anthropogenic activities. The logic underlying the conclusion of negotiated agreements, is characterized mainly by the "option", i.e., agreements to be concluded within the scope of this measure will not be accompanied by legal obligations nor sanctions for non-implementation of these by the participants, since they are aiming at a successful 'voluntary' implementation of the objectives. Their conclusion will be an environmental policy tool that for its implementation will require continuous cooperation and participation by the parties. As large consumers in the first phase can be considered Municipal Enterprises for Water Supply and Sewerage and collective irrigation networks that consume quantities of groundwater &gt; 300.000m<sup>3</sup> / year pumped out from GWBs who are in poor qualitative or quantitative status</p>	SM04
2	RBD12_SM05_01	<p><b>Special Protection Measures in GWB areas with thermo-metallic and medicinal mineral waters</b></p> <p>The special protection measures are combined and adapted to the existing statutory protection framework. At first the prohibitions of the protection controlled zone II of groundwater abstraction points are applied. The installation of new activities may be permitted in certain positions after submitting hydrogeological study or report depending on the size and category of activity and a favourable opinion of the competent Water Directorate. GWBs, where such waters are identified, are: Xanthi - Komotini (GR1200050), Oroï Lekanis (GR1200070), Potamoi - Stavropoli (GR120V090), Evros (GR1200140) and Samothraki - Xeropotamos (GR1200180 )</p>	SM05
3	RBD12_SM05_02	<p><b>Annual review of quality Status of licensed water abstraction works in GWBs with high natural background</b></p> <p>The annual review of the quality status of GWBs exhibiting elevated concentrations of certain elements (e.g. chlorides, sulphates anions) which are attributable to natural background. The annual review of the quality status of groundwater is to check the possible extension of the zone characterized by poor quality due to natural background levels and the potential increase or decrease of the concentration of the element that causes it. The Water Directorate, through the evaluation of the data resulting from the annual quality reviews, will be able to take the necessary measures according to the possible deterioration or improvement of the situation. The GWBs exhibiting elevated concentrations of these elements due to natural background are: Evros river adjacent area and Delta (GR120T020), GWB Xanthi - Komotini (GR1200050), Nestos Delta (GR1200060), Rhodope (GR1200120), Alexandroupolis (GR1200130) and Samothraki - Xeropotamou (GR1200180)</p>	SM05
4	RBD12_SM05_03	<p><b>Investigative monitoring program of the quality of GWBs and surface WBs in the area of existing landfills</b></p> <p>It is proposed to investigate the qualitative status of surface and</p>	SM05

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No	Measure code	Measure Title/ Description	Category
		groundwater in the perimeter of the area of the existing landfills. With this measure the Water Directorate will be able to complement the existing, under the law, monitoring network with additional monitoring points to avoid pollution. The measure concerns the GWBs of Oroí Lekanis - GR1200070 (Kavala landfill) and Filiouris - GR1200040 (Komotini landfill)	
5	RBD12_SM07_01	<b>Acquisition of degraded agricultural land around the lagoons in the Evros Delta in order to create wet meadows north of them</b> The principal aim of this measure is the reconstruction and upgrading of the wetland throughout Evros Delta. The specific objective of this measure is the acquisition of degraded agricultural land around the lagoons which is no longer fertile due to high salinity phenomena in order to be flooded with freshwater inflow. This will form the basis of the reconstruction of habitats, vital to Evros Delta such as wet meadows, mainly north of the Paloukia lagoon	SM07
6	RBD12_SM07_02	<b>Augmentation of fresh water inflow to Drama Lagoon and its peripheral zone with main aim to reduce salinity and promote works of quality rehabilitation</b> This measure will contribute significantly to the restoration of the quality characteristics of the Drana Lagoon with direct consequence its ecological upgrading, that in turn would have a direct effect on the restoration of important habitats of fish fauna and wild bird	SM07
7	RBD12_SM07_03	<b>Redesign of the existing drainage network in the Evros Delta</b> The redesigning of the operation of the drainage network and the re-specification of the operation of the pumping stations will help to ensure the hydrological balance throughout the Evros Delta, covering the water needs of both the wetland, thus contributing its hydrological restoration, and the irrigated cropland	SM07
8	RBD12_SM07_04	<b>Preparation of fishing management study of Drana lagoon in order to promote the construction of fishing infrastructure</b> It is proposed the preparation of a fishing management study aiming to take appropriate actions in order to increase the fish population and enrich the kind of species. The growth of fish population will help to restore the ecological balance within the lagoon, while, in parallel, it will help to the reopening of it as a fish farm	SM07
9	RBD12_SM07_05	<b>Detailed delineation of bank, riparian zone, old bank and bathymetric mapping of lagoons and lakes in the Eastern Macedonia &amp; Thrace National Park</b> Study for the bathymetric mapping of the lagoons of the National Park and Lake Ismarida as well as delineation of SWBs, foreshore and beach	SM07
10	RBD12_SM07_06	<b>Study for the sediment management and restoration of water balance Vistonida</b> The study will address the silting of Vistonida with sediments from watercourses which feed it (mainly river Kosinthos). It will also propose the necessary works and actions to restore the balance of fresh and saltwater	SM07
11	RBD12_SM07_07	<b>Study for the sediment management and restoration of Ismarida Lake and selected lagoons of the Eastern Macedonia &amp; Thrace National Park</b> The study will address the silting of these WBs with sediments. It will also propose the necessary works and actions to restore the balance of fresh and saltwater	SM07



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No	Measure code	Measure Title/ Description	Category
12	RBD12_SM07_08	<b>Study for the restoration of the riparian forests of the Eastern Macedonia &amp; Thrace National Park</b> Study for the restoration of riparian forests on either side of the bed of the rivers of Nestos, Kosinθος, Filiouris and Vosvozis	SM07
13	RBD12_SM07_09	<b>Immediate actions the protection of Ismarida Lake</b> Implementation of immediate works for the reed management and construction of gates, as they are proposed within the framework of the project "Protection and restoration of water and forest resources of Rhodope Prefecture"	SM07
14	RBD12_SM08_01	<b>Designation and delineation of areas of GWBs exhibiting local seawater intrusion or with poor qualitative status due to seawater intrusion</b> In coastal GWBs that are in poor qualitative status due to seawater intrusion or are exhibiting local seawater intrusion, specific hydrogeological studies should be compiled in order to delineate the precise boundaries of the salinity zones. In these areas, measures concerning banning of new groundwater abstractions and/or reducing the existing abstraction volumes should be taken gradually, with priority to find alternative water resources in order to satisfy actual irrigation needs. Coastal GWBs exhibiting seawater intrusion are: Evros river adjacent area and Delta (GR120T020), Makri (GR1200030), Filiouri (GR1200040), GWB Xanthi - Komotini (GR1200050), Nestos Delta (GR1200060), Thassos (GR1200080) and Alexandroupolis (GR1200130). The specifications for the aforementioned hydrogeological studies will be determined by the competent authorities under the coordination of Special Secretariat for Water	SM08
15	RBD12_SM08_02	<b>Designation of preliminary restriction zones for the drilling of new boreholes for new water uses as well as the extension of permits for existing uses in coastal groundwater bodies with seawater intrusion.</b> In coastal GWBs that are in poor qualitative status due to sea water intrusion or are exhibiting local sea water intrusion, due to human pressures (over-pumping) restrictive measures are taken regarding the construction of new water abstraction works (boreholes, wells ) and the extension of permits for existing uses. Until the exact delineation of the restriction zones, based on specific hydrogeological studies that should be drawn up, drilling of new wells for new water uses and extensions of existing use is prohibited in the following coastal zones: - For karst systems: 300m, - For granular free piezometric surface: 200m - For granular under pressure : 100m In special cases (e.g. drinking water supply, aquaculture and desalination etc) permission for drilling a new borehole may be given, after submitting hydrogeological study or report and a favourable opinion from the Water Directorate. This study will concern the whole groundwater system and not specifically the exact location of the new water resources development project. These restrictions intend to limit the expansion of seawater intrusion in coastal GWBs. In the cases of coastal karst GWBs with extensive natural salination, through regulatory decisions, the restriction zones may be extended further, under the responsibility of Water Directorates. The zones with restrictions or prohibitions of new water resources development projects, will be defined by a specific hydrogeological study. The ban excludes special circumstances relating to drinking water supply and other special occasions such as aquaculture drilling, wells for desalination plants etc. In such cases, authorization is upon	SM08

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No	Measure code	Measure Title/ Description	Category
		substantiated hydrogeological study which will be examined and approved by the relevant Water Directorate. The specifications for the aforementioned hydrogeological studies will be determined by the responsible authorities under the coordination of Special Secretariat for Water. The GWBs exhibiting salination are the following: Evros river adjacent area and Delta (GR120T020), Makri (GR1200030), Filiouri (GR1200040), Xanthi - Komotini (GR1200050), Nestos Delta (GR1200060), Thassos (GR1200080) and Alexandroupolis (GR1200130)	
16	RBD12_SM11_01	<b>Implementation of Temenos SHP</b> The proposed project will have the following positive results: <ul style="list-style-type: none"> <li>• Optimization of the guaranteed water availability for irrigation in conjunction with less altering of the physical dynamics of the flow of the downstream rivers and HMWBs due to its ability to operate with much lower discharges than it is currently possible</li> <li>• Optimization of the allocation of the environmental flow</li> </ul>	SM11
17	RBD12_SM14_01	<b>Application of artificial recharge in the GWB Nestos Delta - GR1200060</b> This measure includes the updating of an existing study that was compiled in 1998 by the Ministry of Rural Development and Food and the implementation of artificial recharge aiming to limit sea intrusion and enhance the groundwater quantity particularly in the eastern part of the GWB Nestos Delta. The application of artificial recharge is proposed to be carried out by the method of flooded basins in a non active secondary Nestos riverbed, in Dekarchos - Maggana area in the eastern part of the GWB	SM14
18	RBD12_SM14_02	<b>Application of artificial recharge in the GWB Xanthi - Komotini - GR1200050</b> This measure includes the updating of an existing study that was compiled in 1998 by the Ministry of Rural Development and Food and the implementation of artificial recharge at the western part of the Xanthi - Komotini GWB aiming to its qualitative and quantitative upgrading. More specifically it is proposed to be carried out by the method of flooded basins in an old riverbed of Kosynhtos River, in Vafeika – Koutso area, west of Vistonida	SM14
19	RBD12_SM15_01	<b>Implement of a training program of the rural population</b> This measure includes educational actions and activities of the rural population. The main objectives of these educational actions and activities concern the maintenance and improvement of production with the appropriate use of agrochemicals in order to maximize the protection of wetlands. The proposed actions include the identification of the interested groups and stakeholders, analysis of key features, as well as the planning of the appropriate communication strategy, media, key tools and messages. In the framework of this measure, an organization of educational workshops and seminars on the use of agrochemical products, on the modern cultivation techniques and on the environmental and agricultural soil protection issues, should be implemented	SM15
20	RBD12_SM16_01	<b>Monitoring of the Eastern Macedonia - Thrace Coastline erosion</b> The coastline is subject to a significant regression primarily due to expansion of erosive phenomena, which are expected to intensify in the coming years due to dam construction, sea water intrusion and rising of sea levels. For taking the necessary measures to strengthen the shoreline, primary activity is to monitor the phenomenon, in order to record the areas experiencing the greatest erosion	SM16

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No	Measure code	Measure Title/ Description	Category
21	RBD12_SM16_02	<p><b>Investigation of appropriate measures to combat the salty wedge intrusion phenomenon at the estuaries of Nestos, Lissos and Evros</b></p> <p>The measure refers to the elaboration of a study to determine the length of each river affected by the salt wedge. It involves the installation of local monitoring stations measuring physicochemical parameters for determining the physical border of the transitional water body and subsequently proposing measures to limit the intrusion of salty wedge upstream during the summer season</p>	SM16
22	RBD12_SM16_03	<p><b>Elaboration of a study at RBD level on the impacts of the dams to free movement of anadromous and catadromous species of ichthyofauna and identification of best methods and practices to tackle them</b></p> <p>The study should exploit the data of the European program INTERFISH , the data resulting from the water resources monitoring program, which will take place up to the end of the current management period, but also include data that will result from any necessary additional sampling and field observations, in order to specify the list of species of ichthyofauna, their ecology and their upstream and downstream movements. The aim of this project is to investigate the synergistic effects caused by the disruption in the continuity of river WBs, on the populations of anadromous and catadromous fish species, to contribute to the development of an evaluation index of the ecological status of rivers WBs (BQE based on ichthyofauna), to improve the habitat of fish populations and to identify general and specific measures to address the potential impacts. The study also should assess the measures proposed by the European program INTERFISH, and proceed to design those measures that are necessary for the improvement of movement and living conditions of the ichthyofauna</p>	SM16
23	RBD12_SM16_04	<p><b>Study on limiting the spread of alien species and artificial dispersion of juvenile fish in the river Nestos</b></p> <p>In the frameworks of the project "INTERFISH: Inventory and study of the fish fauna of the River Nestos and actions for the protection of the fish fauna reserves in the ecosystem", which was implemented by the FRI, ten imported fish species were identified: Rainbow trout (<i>Oncorhynchus mykiss</i>), topmouth gudgeon (<i>Pseudorasbora parva</i>), pumpkinseed or sunfish (<i>Lepomis gibbosus</i>), eastern mosquitofish (<i>Gambusia holbrooki</i>), perch (<i>Perca fluviatilis</i>), gudgeon (<i>Gobio gobio</i>), Bleak (<i>Alburnus alburnus</i>), carp (<i>Cyprinus carpio</i>), Prussian Carp (<i>Carassius gibelio</i>), European catfish (<i>Silurus glanis</i>).The perch, the carp, the gudgeon and the bleak, which are transported from other water bodies in the region appear to have been fully integrated into the ecosystem of the river Nestos. The other species, however, have a negative impact on indigenous fish populations, increasing competition for habitats in search of food. The risk of introducing new alien species, and their transport to neighbouring systems, as Vistonida through irrigation channels, is large with unknown effects on the ecological balance of the system. Source of alien species is both escaping from fish farms from the Bulgarian side, but also enhancements from local authorities and the Forest Service usually interested in increasing the population of species mainly for recreational fishing (e.g. enrichment in rainbow Trout). The artificial dispersion can only be done after a study which will address the need of dispersion, the origin of juveniles and potential impacts to species of native fauna. The measure concerns the elaboration of a study, which will demonstrate ways to reduce the spread of invasive species and indicate ways of appropriate artificial dispersion</p>	SM16

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No	Measure code	Measure Title/ Description	Category
24	RBD12_SM16_05	<b>Investigation of suitable sites for the construction of artificial wetlands</b> In the area of the outfall of the drainage networks in Vistonida, it is proposed to study the possibility for the construction of wetlands for the retention and physical removal of pollutant loads. This measure may, in the long term that extends until 2027, allow for the improvement of the ecological status of Vistonida by improving the biological and physico-chemical quality of the aquatic environment	SM16
25	RBD12_SM16_06	<b>Special study to investigate environmental quality standards exceedances of certain specific pollutants and priority substances</b> Investigation of environmental quality standards exceedances of certain specific pollutants and priority substances in the frameworks of a specific study, which will investigate the sources of the pollution and will correlate these substances with specific emission sources and activities	SM16
26	RBD12_SM16_07	<b>Feasibility study for the construction of small reservoirs and ponds in Thasos Island</b> Study for the construction of multi-purpose water reservoirs in Thassos (irrigation, water supply, recreation), especially in the southern part of the island that has the greatest needs and shortages in water resources	SM16
27	RBD12_SM18_01	<b>Reforming of cost accounting systems of water services</b> Formulation and application of a uniform method of calculating and recording the cost of water supply from the water services, in order to enhance the reliability of its assessment. Based on the available data, it is concluded that (a) the way of reporting and recording of expenditure categories shows great heterogeneity and (b) there is no systematic registration of costs and revenues per water service (water supply and discharge with / without WWTP). Finally, the environmental costs and resource costs should be taken into account, using appropriate methodologies. A prerequisite for this is the computerization of water services. The formulation and application of a uniform method of recording concerns also the cost of water for irrigation whereas this assessment must also take into account, the environmental and resource costs using appropriate methodologies - even for those served by private pumping. A prerequisite for this is the computerization of water services	SM18
28	RBD12_SM18_02	<b>Annual disclosure of the total cost of water supply and the degree of cost recovery</b> Annual disclosure of the total cost of water supply and the degree of cost recovery, with the aim of raising public awareness. The disclosure shall be made in a non-technical text and it should be comparative.	SM18
29	RBD12_SM18_03	<b>Rational management of waste water from agglomerations with a peak population &lt;2000 pe serviced by sewerage</b> Implementation of guidelines of the Special Secretariat for Water on proper waste water management practices for agglomerations <2,000 pe. Furthermore, the drafting of a Guidance Document on good practices for small-scale wastewater treatment projects by Special Secretariat for Water and will be followed by the Municipalities, is proposed.	SM18
30	RBD12_SM18_04	<b>Regular fishing and transport of fry and / or mature individuals of fish from upstream to downstream of large dams</b> During the 1st Management Cycle and until the completion of the study on the restoration of the free passage of fish fauna along the river Nestos, it is proposed to apply the catch and transport technique for Briana, Tylinari Tsironaki and Sirte species and the evaluation of the results of this method in the dams of Nestos	SM18

For the **proposed supplementary measures** a **Cost Effectiveness Analysis (CEA)** was carried out.

The CEA is used for assessing the cost-effectiveness of potential measures for achieving the environmental objectives set out in the Directive, and in particular for making judgments about the most cost effective program of measures and assessing the cost-effectiveness of alternative measures.

The analysis included the following parameters: 1. degree of effect, 2. number of relevant Water Bodies, 3. period of implementation, 4. period of efficiency, 5. social impact, 6. economic impact, 7. environmental impact. For these parameters an appropriate rating is used and the rate of effectiveness was estimated. By taking into account the discounted cost of the measures, a **factor of economic efficiency** was calculated. In this way the group of the most effective measures was identified.

It is worth to mentioning that the RBMP plan has two key issues (restrictions) to address:

- the limited remaining time period until the year 2015 and
- the limited financial capacity of the country at least until the year 2015.

So there was an emphasis on selecting complementary measures with low cost (high coefficient of efficiency) and immediate implementation (by 2015).

For the current river basin management cycle (until 2015), it is estimated that 22 of 30 supplementary measures can be implemented, which have zero or low cost of implementation or have already been included in co-financed programmes.

The remaining 8 supplementary measures it is expected to be implemented in the coming river basin management cycles (2016-2021 and 2021-2027). These measures refer to projects that either require preparatory actions and/ or construction works and/ or measures of high cost, which exceed the financial capacity for the current river basin management cycle.





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Co-funded by Greece and the European Union