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DIRECTORATE-GENERAL FOR WATER

2nd UPDATE OF RIVER BASIN MANAGEMENT PLANS

River Basin District of Thessalia (EL08)

Summary

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J/V FOR THE SECOND AMENDMENT OF THE WESTERN STEREA & THESSALIA RIVER BASIN MANAGEMENT PLANS

2nd Update of the River Basin Management Plan

Basin District of Thessalia (EL08)

Summary

Final Edition

Government Gazette of the Approval of the 2nd Update of the River Basin Management Plan of the River Basin District of Thessalia (EL08): GG A' 83 /12.06.2024

2nd UPDATE OF THE RIVER BASIN MANAGEMENT PLAN OF THE RIVER BASIN DISTRICT OF THESSALIA (EL08)

Summary of the final Revised Management Plan in English

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ABBREVIATIONS

AR	At Risk
AWB	Artificial Water Body/bodies
BTM	Basic Type of Measure
CWB	Coastal Water Body/Bodies
D.A.	Decentralized Administration
Directive	Water Framework Directive (2000/60/EC)
EC	European Community
EEC	European Economic Community
EQR	Ecological Quality Ratio
EQS	Environmental Quality Standards
EU	European Union
GD	Guidance Document
GDNEW	General Directorate of natural Environment and Water
GIG	Geographical Intercalibration Group (
GOLR	General Organization of Land Reclamation
GWB	Groundwater Body/bodies
GWD	General Directorate of Water
HMWB	Heavily Modified Water Body/ bodies
JMD	Joint Ministerial Decree
KTM	Key Type Measure
LOLR	Local Organization of Land Reclamation
LWB	Lake Water Body/Bodies
MAC	Maximum Acceptable Concentrations
MD	Ministerial Decree
MED-GIG	Geographical Group for the Mediterranean Ecoregion Calibration
MoE	Ministry of Environment & Energy
MEWSS	Municipal Enterprise for Water Supply and Sewerage
NR	Not at Risk
NWMN	National Water Monitoring Network
PAR	Probably At Risk
PD	Presidential Decree

PNR	Probably Not at Risk
RB	River Basin
RBD	River Basin District
RBMP	River Basin Management Plan
RWB	River Water Body/Bodies
SAC	Special Areas of Censervation
SCI	Site of Community Importance
SPA	Special Protection Area
SWB	Surface Water Body/bodies
TWB	Transitional Water Body/Bodies
WB	Water body/bodies
WFD	Water Framework Directive
WG ECOSTAT	Working Group on the Ecological Status
WISE	Water Information System of Europe

1 INTRODUCTION - 2nd UPDATE OF THE RIVER BASIN MANAGEMENT PLAN

1.1 Introduction

The River Basin Management Plans of the country's river basins are reviewed and updated every six years. By Decision No. 909/2014 (Government Gazette B' 2562/2014) of the National Water Committee , the 1st RBMP of the examined River Basin District (1st management Plan 2009-2015) was approved and by Decision No. 897/29.12.2017 (Government Gazette B 4682/29.12.2017) of the National Water Committee, the 1st Update of the RBMP of RBD Thessalia (2nd management Plan 2016-2021) was approved.

The 2nd Update of the River Basin Management Plan of the River Basin District of Thessalia has significant changes and improvements since the 1st Update:

- It is based on the use of data for the period 2016-2021 of the National Water Monitoring Network (NWMN), as well as the annual water status assessment reports that are developed within the framework of its operation.
- The 2nd Update is being prepared at the same time as the Flood Risk Management Plans in accordance with the Directive 2007/60/EC and synergy of actions and a program of measures has been achieved.
- The 2nd Update is being prepared at the same time as the Special Environmental Assessments (SEAs) for the network of Natura 2000 sites within the boundaries of the Basin District of interest and synergy of actions and a program of measures has been achieved for those studies that are under public consultation.
- The 2nd Update takes into account the programs of measures to achieve good environmental status of the country's marine waters in accordance with the Directive 2008/56/EC and synergy between actions and a program of measures has been achieved.
- The 2nd Update took into account the National Strategy for Adaptation to Climate Change and incorporated into the program of measures sub-actions of the National Strategy for Adaptation to Climate Change.
- It takes into account the results of actions and activities that have been implemented to date in the context of increasing knowledge about the status of waters and the pressures on them, as well as the actions implemented to fill the gaps identified in the 1st Update of the RBMP.
- The results of the assessment of natural water balances (hydrological resources) using the latest data up to 2020 and the use of models (updating water resources management systems and tools).
- The results of the implementation of the measure ''Establishment of a Registry of pollution sources (emissions, discharges and spills)'' of the 1st Update of the RBMP.
- The results of the implementation of the measure ''Special measures for achieving Good Ecological Potential in HMWB'' of the 1ης Update of the RBMP.
- It supports the active participation of the public through the possibility of live streaming of the consultation days of the RBMPs.

- It takes into account the new requirements resulting from the guidance documents for the implementation of Directive 2000/60/EC adopted by the EU.
- It takes into account the results of the Evaluation Report of the 1st Update of the RBMPs by the competent services of the European Commission which was implemented as part of the European Parliament's briefing on the implementation of the Directive and is available on the EU's website, as well as any EU recommendations for the preparation of the 2nd Update of the RBMPs, such as the warning letter "EU PILOT 9895 (2021): Deficiencies identified in the evaluation of the second RBMPs".

http://ec.europa.eu/environment/water/water-framework/facts figures/guidance docs en.htm.

It takes into account the new and/or updated analytical methodologies for critical aspects of the implementation of Directive 2000/60 EC, as presented below (Chapter 2.1) and are available on the relevant website of the Special Secretariat for Water http://wfdver.ypeka.gr/.

The 2nd Update was prepared simultaneously for all 14 River Basin Districts of the country and homogeneity has been achieved in the individual methodologies and in the proposed programs of measures (basic and supplementary).

1.2 Consultation process

The consultation process on the 2nd Update of the River Basin Management Plan of the River Basin District of Thessalia started in March 2019 and was completed in November 2023 and included the following:

-In March 2019, the scope of the planned work of the 2nd Update of the RBMP was posted on the website of the Ministry of Environment (http://wfdver.ypeka.gr/el/consultation-gr/), as well as the detailed timetable for the consultation of the public.

-In September 2019, information on the significant water resources management issues in each RBD was posted on the website of the Ministry of Environment and Natural Resources, including a summary of the results of the National Water Network for monitoring the water status of the country's water resources for the River Basin District, the main pressures, the identification and listing of the competent authorities and stakeholders involved in the consultation process.

-In May 2023, the Draft 2nd Update of the River Basin Management Plan of the River Basin District of Thessalia, as well as a questionnaire, was posted on the website of the Ministry of Environment and Natural Resources. This phase also included the publication of the Strategic Environmental Impact Assessment.

2 DIFFERENTIATIONS IN COMPARISON TO THE APPROVED 1st UPDATE OF THE RIVER BASIN MANAGEMENT PLAN

2.1 Analytical Methodologies for the Implementation of the Key Elements of Directive 2000/60/EC

New and/or updated analytical methodologies for critical aspects of the implementation of Directive 2000/60/EC have been developed for the needs of the 2nd Update of the RBMP of Thessalia, as listed below:

- Establishment of a national methodology for the determination of the ecological flow of river water bodies, in accordance with the implementation of the relevant measure of the 1st Update of the RBMPs.
- Establishment of a " Registry of Pollution Sources" in accordance with the implementation of the relevant measure of the 1st Update of the RBMPs .
- Establishment of a "National Library" of measures to address and mitigate the impacts of hydromorphological alterations in Heavily Modified Water Bodies (HMWB) and identification of measures to achieve Good Ecological Potential (GEP) in accordance with the implementation of the relevant measure of the 1st Update of the RBMPs.
- Updating the analytical methodology for the analysis of anthropogenic pressures and their impacts on surface and groundwater systems.
- Updating the analytical methodology for the identification of the "exemptions" of paragraphs 4 to 6 of Article 4 of Directive 2000/60/EC (4.4 - 4.6), by reviewing the specifications for the implementation of the exemptions of Article 4.5.
- Update of the analytical methodology "Identification of the "exceptions" of paragraph 4.7 of Article 4 of Directive 2000/60/EC.
- Update of the methodology for the "Assessment of the status of all categories of Surface Water Bodies"

All the detailed methodologies used in the preparation of the 2nd Update of the RBMP for all the River Basin Districts of the country are available on the website of the Directorate General of Water http://wfdver.ypeka.gr/.

2.2 Progress in implementing the measures

During the 1st Update, thirty-six (36) Basic Measures (Group II) were adopted in the River Basin District of Thessalia, fall into nine categories. In addition to the Basic Measures, forty six (46) Supplementary Measures have been adopted in the River Basin District of Thessalia, fall into nine categories.

The progress in implementing the Key and Supplementary Measures of the Program of Measures of the 1st Update of the RBMP is presented in the table below.

Table 2.2-1: Summary of progress in the implementation of the Key and Supplementary Measures of the Program of Measures of the approved 1st Update of the RBMP

CATEGORY OF MEASURE	NUMBER OF MEASURES IMPLEMENTED OR TO BE IMPLEMENTED
Emission controls	1 of 4
Construction projects	5 of 24
Research, development and demonstration projects	1 of 4
Demand management measures	1 of 2
Artificial enrichment	1 of 2
TOTAL - SUPPLEMENTARY MEASURES	**9 of 46**
Measures to implement the principle of cost recovery for water services (Article 9)	1 of 4
Measures to protect waters intended for human consumption (Article 7)	3 of 4
Measures to promote the efficient and sustainable use of water so as not to compromise the achievement of the objectives of the Directive (Article 4)	4 of 8
Measures to address negative impacts on the status of surface water bodies in particular from hydromorphological alterations	2 of 6
Measures on diffuse sources of discharges	2 of 3
Measures on point sources of discharges	1 of 5
Measures for priority substances and other substances	1 of 2
Measures to control surface and groundwater abstraction and surface water storage	2 of 2
TOTAL - BASIC MEASURES	**16 of 36**
TOTAL FOR THE RIVER BASIN DISTRICT OF THESSALIA	**25**

2.3 Main differentiations in comparison to the 1st Update of the RBMP

The table below summarises the most important differences identified in the 2nd Update of the RBMP of the River Basin District of Thessalia compared to the approved 1st Update of the RBMP.

Table 2.3-1: Main differentiations between the 2nd Update and the 1st Update of the RBMP

CONTENT OF THE 2nd UPDATE OF RBMP/ACTIVITY	DIFFERENTIATION IN RELATION TO THE 1st UPDATE OF RBMP
COMPETENT AUTHORITIES	Differentiations in the competent authorities arising from Law no. 5037/2023. The relevant data are summarised in Chapter 3.2 of this report.
DELINEATION OF SURFACE WATER BODIES - TYPOLOGY	No differences have been identified in the number of Surface Water Systems (SWB) in comparison to the 1st Update of the RBMP The results are summarised in Chapter 4.1 herein.
DESIGNATION OF GROUNDWATER SYSTEMS	No differences have been identified in the number of the Groundwater Bodies in comparison to the 1st Update of the RBMP. In the framework of the 2nd Update of the RBMP, the delineated GWB YDROFORION MAYROVOYNIOY – OSSAS (EL0800270) was redelineated to the subsystems YDROFORION MAYROVOYNIOY – OSSAS A (EL0800271) and YDROFORION MAYROVOYNIOY – OSSAS B (EL0800272) The results are summarised in Chapter 4.2 herein.
HEAVILY MODIFIED WATER BODIES (HMWB) AND ARTIFICIAL WATER BODIES (AWB)	The Heavily Modified WB that were defined in the 1st RBMP are reviewed on the basis of A) the methodology established by the GWD and B) the data of the National Monitoring Network The results and differentiations are summarised in Chapters 4.1 and 4.3 herein.
PROTECTED AREAS	The reservoir of T. L. Smokovou has been added to the protected areas registry for areas designated for the abstraction of water intended for human consumption. Data on bathing water was updated. The areas designated for the protection of habitats or species have been updated, as the National Forest of Olympus has been designated as a National Park . The relevant results are summarised in Chapter 4.4 herein.
PRESSURES AND IMPACTS	The assessment of pressures and impacts is based on the updated common methodology developed in the framework of the "2nd Update of the River Basin Management Plan of the 14 River Basin District S of the country" and on the latest data available, which are related to a more complete picture of the cultivated areas, the establishment of new activities and the better mapping of activities in the RBD. A Registry of pollution sources was established which supported the analysis of the assessment and evaluation of pressures. Detection of relevant priority substances has taken place on a larger scale due to improved methods of analysis.

CONTENT OF THE 2nd UPDATE OF RBMP/ACTIVITY	DIFFERENTIATION IN RELATION TO THE 1st UPDATE OF RBMP
	The results are summarised in Chapter 5 of this report.
CLASSIFICATION OF THE STATUS OF SURFACE WATER BODIES	The basic methodological approach for classifying the status of surface and groundwater bodies has not changed since the 1st Update. An exception to this is the Heavily Modified Water Bodies for which the "Prague" approach is applied as described in the document regarding the application of the measure "Special measures for achieving Good Ecological Potential in HMWB" of the 1st Update of the RBMP. Regarding the overall picture of the results of the classification of the WB' status, there is a slight deterioration in terms of ecological status, with more water bodies in moderate status compared to the 1st Update. Parameters estimated to contribute to this deterioration are: ✓ The increase on the number of Biological Quality Data that are systematically monitored. ✓ The update of the list of Priority Substances based on Directive 2013/39 (Government Gazette B' 69 / 22-1-2016), led to the increase in the number of PS monitored through the NWMN. ✓ Inability to implement properly the monitoring program of the National Network due to covid or other problems, resulted in the collection of less data, mainly on parameters affecting the ecological status. ✓ An increase in the number of SWB whose ecological and chemical status is classified by grouping or expert judgement has resulted in reduced reliability of the classification result. The results are summarised in Chapter 6.1 of this report
CLASSIFICATION OF THE STATUS OF GROUNDWATER BODIES	The methodology for classifying the status of the GWB is not different from the 1st Update of the RBMP with specific improvements, additions in relation to MAC due to natural background and the identification of trends. The classification of the status of GWB is based on the latest data from the monitoring network. The results are summarised in Chapter 6.2 herein.
ECONOMIC ANALYSIS OF WATER USE	For the economic analysis of water uses, the general rules in force are applied for pricing of water services. The results are summarised in Chapter 7 of this report.
ENVIRONMENTAL OBJECTIVES - EXEMPTIONS	In the 2nd Update the environmental objectives and exemptions set is based on the new methodological approaches developed in accordance with the EU guidelines. The results are summarised in Chapter 8 of this report
PROGRAM OF MEASURES	The methodological approach for the preparation of the program of measures has not changed. During it's preparation, recommendations and comments of the staff of the competent Water Directorates were taken into

CONTENT OF THE 2nd UPDATE OF RBMP/ACTIVITY	DIFFERENTIATION IN RELATION TO THE 1st UPDATE OF RBMP
	account, as well as the evaluation of the implementation of the measures of the 1st Update of the RBMP and the problems encountered during the implementation. The new program of basic and supplementary measures is summarised in Chapter 9 of this document.

3 DESCRIPTION OF THE RIVER BASIN DISTRICT - COMPETENT AUTHORITIES

3.1 River basins

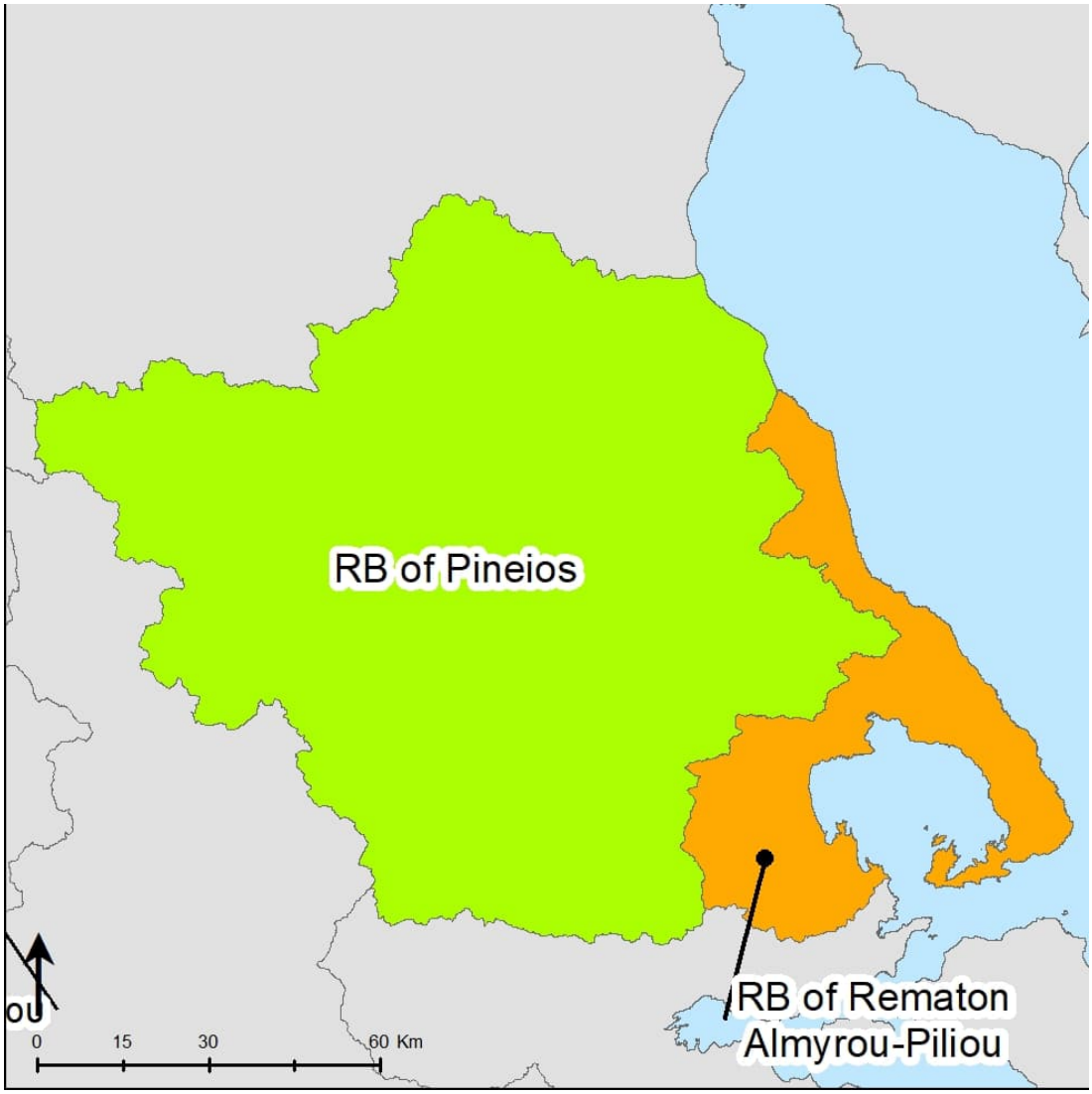
The River Basin District of Thessalia (EL08) is one of the fourteen river basin districts into which the Greek territory was divided by Law 1739/1987 (Government Gazette 201/A/20-11-1987). The total area of the department is 13.140 km².

Map 3.1-1: Location of the River Basin District of Thessalia (EL08)

The River Basins (RB) that make up this River Basin District of Thessalia (EL08) according to the Decision No. 706/2010 (Government Gazette 1383/B/2-9-10) of the National Water Committee, are presented in the Table and Map below.

Table 3.1-1: River basins in the RBD of Thessalia (EL08)

River Basin District	Basin code	Name of River basin (RB)	Area (km²)
Thessalia (EL08)	EL0816	Pineios	11.062
	EL0817	Rematon Almyrou - Piliou	2.078



Map 3.1-2: River basins in the RBD of Thessalia (EL08)

The RBD of Thessalia (EL08) includes two main basins: the Pineios and the Rematon Almyrou-Pelion.

Pineios river basin (EL0816)

The river Pineios, which originates from Pindos, crosses the entire Plain of Thessaly and ends in the Aegean Sea. It is approximately 262 km long and almost all the river water bodies of the Pineios RB contribute to it. Its main tributaries are in the south the Enipeas (132 km), the Farsaliotis (38 km), the Sofaditis (56 km) and the Kalentzis (58 km), in the west-southwest the Pamisos (25 km) , and the Portaikos (24 km), and in the north the Lithaios (63 km), the Neochoritis (27 km) and the Titarissios (96 km).

In addition, the Pineios RB includes important lakes such as the Techniti Limni Karla (34.9 km²), the Techniti Limni Smokovou (9.9 km²) and the Techniti Limni Argyropouliou (0.5 km²).

However, it should be noted that the sub-basin of the river Tavropos (Megdova), upstream of the Plastiras dam, with an area of 161 km², although hydrologically it belongs to that of Acheloos RB, from a management point of view it belongs to that of Pineios (i.e. to River Basin District EL08), as practically all of its water resources are diverted to the Thessalia side.

3.2 Competent Authorities

According to Law 3199/2003 (Government Gazette A΄280) on Water Protection and Management, it harmonizes national law with the provisions of Directive 2000/60/EC and defines the competent authorities for water protection and management. The competent authorities are:

- The **National Water Committee**
- The **General Water Directorate**

Table 3.2-1: Identity of National Competent Authority

Official Name	**Directorate-General for Water**
Acronym	GDW
Legal Status	Administrative sector of the Ministry of Environment and Energy
Contact details	
Postal address	Mesogeion 119
PO Box. Code	11526
City	Athens
Country	Greece
Website	https://ypen.gov.gr, http://wfdver.ypeka.gr
Contact points	Tel: 2131513812 e-mail: d.vakalis@prv.ypeka.gr

At regional level the competent authorities are:

- The **Decentralised Administration Water Council**
- The **Water Directorates of the Decentralized Administration**,

Table 3.2-2: Identity of Regional Competent Authorities

Official Name	**Decentralized Administration of Thessaly and Central Greece Water Directorate of Thessaly**
Acronym	W.D.T.
Legal Status	Organizational Unit of the Decentralized Administration of Thessaly and Central Greece. Under the General Directorate for Spatial Planning and Environmental Policy
Contact details	
Postal address	Farsalon 148
PO Box. Code	41335
City	Larissa
Country	Greece
Website	www.thessaly.gov.gr, http://www.apdthest.gov.gr

Official Name	Decentralized Administration of Thessaly and Central Greece Water Directorate of Thessaly
Contact points	Τηλ.: 2410 613720, 2410 617174 (εσωτ.122), e-mail: dydatonthes@apdthest.gov.gr

According to the "New Architecture of Local Government and Decentralized Administration - Kallikratis Program" Law 3852/2010 (Government Gazette A 87), the responsibilities provided by Law 3199/2003 (Government Gazette A 280), as amended by Law 5037/2023 (Government Gazette A 58), on the protection and management of water resources are shared between the State Administration (central government) and the elected Regions. The State Administration has the responsibility for designing the protection and management strategy and the elected regions mainly involved with the implementation of the strategic planning.

The table below gives a summary of the nature of the role played by each competent authority by thematic area in the context of water management and protection.

Table 3.2-3: Role of competent authorities for water management and protection

Competent Authority	Main Roles												
	Pressure and impact analysis	Economic analysis	Surface water monitoring	Groundwater monitoring	Assessment of surface water status	Groundwater status assessment	Preparation of the PRSP	Training MT	Implementation of measures	Public participation	Enforcement of regulations	Coordination of implementation	Submission of data to the European Commission
General Directorate of Water of the Ministry of Environment & Energy	M	M	M	M	M	M	M	M	M	M	M	M	M
Water Directorate of Decentralized Administration	S	S	S	S	S	S	S	S	M	S	M	M	-
Ministry of Rural Development and Food	-	-	-	-	-	-	-	-	M	-	S	-	-
Ministry of Infrastructure and Transport	-	-	-	-	-	-	-	-	M	-	S	-	-
Ministry of Development	-	-	-	-	-	-	-	-	S	-	M	-	-
Ministry of National Economy and Finance	-	-	-	-	-	-	-	-	S	-	M	-	-
Ministry of Health	-	-	-	-	-	-	-	-	M	-	S	-	-
Ministry of Maritime Affairs and Island Policy	-	-	-	-	-	-	-	-	-	-	M	-	-
Ministry of Interior	-	-	-	-	-	-	-	-	S	-	M	-	-
Municipalities of the RS	-	-	-	-	-	-	-	-	M	-	S	-	-
Regions of the RBD	-	-	-	-	-	-	-	-	M	-	S	-	-

M	*Main Role*
S	*Supplementary Role*
-	*No role*

Responsibilities

According to the Commission's Decision No. 706/16.07.2010 Decision (Government Gazette B'1383/02.09.2010), of the former National Water Commission, and in particular its Annex II, as corrected by Government Gazette B'1572/28.09.2010 and is in force, the competent authorities, per River Basin in each River Basin District of the country were defined. Thus, for both RBs of the RBD of Thessalia (Pineios and Rematon Almyrou-Piliou) and in accordance with the provisions of Law 3852/2010, the only competent authority is the Decentralised Authority of Thessaly and Central Greece.

The following table presents an updated extract of Annex II of the above Decision of the National Water Commission, in accordance with Law 3852/2010.

Table 3.2-4: River basins and competent decentralised administration

RB code	Name of RB	Regions geographically located within the boundaries of river basins	Competent Decentralized Administration (according to Government Gazette B' 1383, 1572/2010 and N.3852/2010)	Comments
EL0816	Pineios	Thessaly, Sterea Ellada, Epirus, W. Macedonia, C. Macedonia	Thessaly and Central Greece	-
EL0817	Almyrou-Piliou	Thessaly, Sterea Ellada	Thessaly and Central Greece	-

4 DELINEATION OF WATER BODIES

4.1 Surface water systems - typology

In the framework of the 2nd Update of the River Basin Management Plan of the RBD of Thessalia (EL08), a total of **82 surface water bodies** were identified (of which 12 HMWB and 4 AWB are identified). The distribution of the WB in the RBD and per RB is presented in the following Table.

Table 4.1-1: Number of Surface Water Bodies in the RBD of Thessalia (EL08) per RB (2nd Update of the RBMP)

TYPE OF WB	RB		RBD TOTAL
	Pineios (EL0816)	Almyrou-Piliou (EL0817)	
River WB	64	8	72
Reservoirs	1	-	1
Lake WB	2	-	2
Transitional WB	-	-	-
Coastal WB	2	5	7
Total WB	**69**	**13**	**82**

It is noted in relation to the 1st Update of the RBMP, the following changes have been identified:

- The number of river WB designated as HMWB increased to a total of 9, as five new water bodies were added. More specifically, in the framework of the 2nd Update, PINEIOS P. 5, ENIPEUS P. 1, KALENTZIS P. 1, FARSALIOTIS P. 1 and FARSALIOTIS P. 2 were designated as Heavily Modified.
- There is a change in the number of coastal HMWB, as in the framework of the current revision of the RBMP after reviewing, the WB Ormos Volou was designated as Natural from Heavily Modified (1st Update), so there is coastal WB designated as Heavily Modified.

All surface water bodies are presented in the following tables.

Table 4.1-2: List and characteristics of river WB, according to European Decision 2018/229/EU and MED GIG, water bodies per RB of the RBD of Thessalia (EL08)

No	Name of WB	WB code	Category (1)	Length (km)	Immediate catchment area (km²)	Upstream catchment area (km²)	Average Annual Flow (hm³)	Type of WB
PINEIOS RIVER BASIN (EL0816)								
1	1T	EL0816R000000062A	AWB	37,9	275,2	275,20	48,31	R-M2
2	7T	EL0816R000000064A	AWB	36,2	187,54	187,54	16,41	R-M2
3	AMYROS P.	EL0816R000000163N	NAT	9,5	121,61	121,61	21,88	R-M2
4	ZILIANA P.	EL0816R000101001N	NAT	14,8	170,01	170,13	41,18	R-M2
5	PINEIOS P. 2	EL0816R000200003N	NAT	8	26,42	9.331,38	2521,30	R-M3
6	PINEIOS P. 3	EL0816R000200004N	NAT	11,8	120,95	9.304,96	2387,05	R-M3
7	PINEIOS P. 4	EL0816R000200005N	NAT	10,2	63,57	9.184,00	2365,68	R-M3
8	PINEIOS P. 5*	EL0816R000200015H	HMWB	27,5	177,05	7.227,56	1942,17	R-M3
9	PINEIOS P. 7	EL0816R000200016A	AWB	2,3	0,17	0,18	0,03	R-M1
10	PINEIOS P. 6	EL0816R000200017H	HMWB	6,6	7,12	7.050,50	1924,66	R-M3
11	PINEIOS P. 8	EL0816R000200020N	NAT	20,6	125,05	6.450,82	1825,21	R-M3
12	PINEIOS P. 9	EL0816R000200021N	NAT	4,2	8,34	6.325,76	1813,29	R-M3
13	PINEIOS P. 10	EL0816R000200022N	NAT	29,8	320,28	6.317,42	1853,96	R-M3
14	PINEIOS P. 11	EL0816R000200039N	NAT	42,2	32,13	2.786,27	1133,36	R-M3
15	PINEIOS P. 12	EL0816R000200053N	NAT	36	187,54	1.434,47	767,01	R-M3
16	ION P. 1	EL0816R000200056N	NAT	37	216,69	944,37	496,84	R-M2
17	ION P. 2	EL0816R000200060N	NAT	11,9	104,37	104,38	42,35	R-M2
18	PINEIOS P. 1	EL0816R000201002N	NAT	13,9	130,6	9.461,99	2549,00	R-M3
19	TITARISIOS P. 1	EL0816R000202006N	NAT	23	254,68	1.892,87	323,62	R-M3
20	TITARISIOS P. 2	EL0816R000202007N	NAT	36,5	547,33	1.638,19	311,07	R-M3
21	TITARISIOS P. 3	EL0816R000202013N	NAT	17,6	89,24	281,27	51,13	R-M2
22	TITARISIOS P. 4	EL0816R000202014N	NAT	33,4	192,02	192,02	16,56	R-M2
23	SMOLIOTIKO R.	EL0816R000202108N	NAT	12,5	87,35	87,36	17,22	R-M1
24	KARKATSELI R.	EL0816R000202209N	NAT	10,3	48,18	48,19	7,83	R-M1
25	ELASSONITIKOS P.	EL0816R000202310N	NAT	43,9	353,99	354,00	62,64	R-M2
26	XERIAS R.	EL0816R000202411N	NAT	26,1	146,88	146,88	37,29	R-M2
27	TITARISIOS P. - PARAPOTAMOS LIANOPOTAMOS	EL0816R000202512N	NAT	18,2	173,15	173,15	28,86	R-M2
28	KOUSMPASANIOTIKO R. 1	EL0816R000204018H	HMWB	16,7	384,08	592,38	99,08	R-M2
29	KOUSMPASANIOTIKO R. 2	EL0816R000204019N	NAT	16,9	208,29	208,30	23,13	R-M2
30	ENIPEUS P. 1*	EL0816R000206023H	HMWB	11,5	99,49	3.210,86	632,47	R-M3
31	ENIPEUS P. 2	EL0816R000206036N	NAT	25	221,99	1.138,95	231,45	R-M3
32	ENIPEUS P. 3	EL0816R000206037N	NAT	29,3	349,87	916,95	170,45	R-M2
33	ENIPEUS P. 4	EL0816R000206038N	NAT	66,5	567,08	567,08	139,56	R-M2
34	KALENTZIS P. 1*	EL0816R000206124H	HMWB	25,5	147,63	605,65	167,66	R-M2
35	KALENTZIS P. 2	EL0816R000206125N	NAT	63,3	457,93	458,01	61,37	R-M2
36	SOFADITIS P. 1	EL0816R000206226N	NAT	25,8	137,68	1.366,76	272,29	R-M3
37	FARSALIOTIS P. 1*	EL0816R000206227H	HMWB	17,7	35,81	719,89	109,73	R-M2

No	Name of WB	WB code	Category (1)	Length (km)	Immediate catchment area (km²)	Upstream catchment area (km²)	Average Annual Flow (hm³)	Type of WB
38	MAKRYREMMA	EL0816R000206228N	NAT	25	166,43	166,44	27,09	R-M2
39	FARSALIOTIS P. 2*	EL0816R000206229H	HMWB	20,3	517,62	684,07	104,38	R-M2
40	SOFADITIS P. 2	EL0816R000206230N	NAT	19,3	26,92	509,19	139,66	R-M2
41	SOFADITIS P. 3	EL0816R000206231H	HMWB	10,6	33,03	482,27	142,67	R-M2
42	SMOKOVITIKO R.	EL0816R000206232N	NAT	8,8	80,22	80,24	33,48	R-M1
43	TSATSORREMA	EL0816R000206233N	NAT	5	88	88,01	38,40	R-M1
44	PAPOUSA R.	EL0816R000206234N	NAT	2,3	38,56	38,57	9,94	R-M1
45	TAFROS XYNIADAS	EL0816R000206235A	AWB	12,2	167,95	167,95	28,59	R-M2
46	MEGA REMA 1	EL0816R000208040N	NAT	32,5	159,44	237,57	75,36	R-M2
47	MEGA REMA 2	EL0816R000208041N	NAT	11,4	78,1	78,13	22,71	R-M1
48	LITHAIOS P. 1	EL0816R000210042N	NAT	30,2	160,47	740,62	163,39	R-M2
49	LITHAIOS P. 2	EL0816R000210045H	HMWB	3,9	5,2	265,54	66,13	R-M2
50	LITHAIOS P. 3	EL0816R000210046N	NAT	3,1	51	260,33	65,61	R-M2
51	LITHAIOS P. 4	EL0816R000210047N	NAT	25,6	209,32	209,33	104,69	R-M2
52	NEOCHORITIS P.	EL0816R000210143N	NAT	27,3	209,58	314,61	73,72	R-M2
53	NEOCHORITIS P. - PARAPOTAMOS	EL0816R000210144N	NAT	12,3	105,02	105,03	17,89	R-M5
54	PAMISOS P. 1	EL0816R000212048N	NAT	19,6	93,05	248,06	131,87	R-M2
55	PAMISOS P. 2	EL0816R000212049N	NAT	5,5	154,91	155,00	112,57	R-M2
56	DYTIKI KOITI TRIKALON	EL0816R000214050N	NAT	9	93,41	93,41	17,43	R-M1
57	PORTAIKOS P. 1	EL0816R000216051N	NAT	16,1	164,97	302,56	208,49	R-M2
58	PORTAIKOS P. 2	EL0816R000216052N	NAT	8,4	137,54	137,58	134,48	R-M2
59	MALAKASIOTIKO R.	EL0816R000218054N	NAT	43,8	343,83	509,83	341,12	R-M2
60	KLEINOVITIKOS P.	EL0816R000218155N	NAT	20,3	165,89	165,96	175,90	R-M5
61	TRANO POTAMI	EL0816R000220057N	NAT	4,8	48,4	48,40	23,93	R-M1
62	GKREMOS R.	EL0816R000222058N	NAT	7,3	40,56	40,56	13,89	R-M1
63	XIROPOTAMOS	EL0816R000224059N	NAT	3,3	24,5	24,50	7,05	R-M1
64	DERMPINAS R.	EL0816R000301061N	NAT	3,7	29,17	28,97	6,41	R-M1
ALMYROU-PILIOU RIVER BASIN (EL0817)								
65	XIROLAKKAS R.	EL0817R000101065N	NAT	4,3	25,97	25,98	5,86	R-M1
66	POURI R.	EL0817R000301066N	NAT	11,8	87,21	87,21	15,42	R-M1
67	RAKOPOTAMO	EL0817R000501067N	NAT	6,1	33,8	33,80	6,89	R-M1
68	LACHANORREMA	EL0817R000701068N	NAT	12,5	131,96	131,97	17,01	R-M5
69	CHOLOREMMA	EL0817R000901069N	NAT	18,2	118,6	118,60	15,62	R-M5
70	XERIAS ALMYROU R.	EL0817R001101070N	NAT	24,3	160,09	160,10	37,77	R-M2
71	PLATANOREMMA R.	EL0817R001301071N	NAT	22,3	94,8	94,62	22,24	R-M5
72	XIROREMMA R.	EL0817R001501072N	NAT	16,4	150,37	150,38	24,22	R-M2

(1) NAT: Natural Water Body, HMWB: Heavily Modified Water Body, AWB: Artificial Water Body

** Differences in the coding of river water bodies compared to the 1st Update of the RBMP, due to the change of the assessment of water bodies from Natural to HMWB and vice versa*

Table 4.1-3: Lake water bodies with new typology per RB of the RBD of Thessalia (EL08)

No	Name of WB	WB code	Category (1)	Area (km²)	Type of WB
PENEIO RIVER BASIN (EL0816)					
1	TECHNITI LIMNI ARGYROPOULIOU	EL0816L000000001H	HMWB	0,49	GR-SNL
2	TECHNITI LIMNI KARLAS	EL0816L000000002H	HMWB	34,92	GR-SR

(1) *NAT: Natural Water Body, HMWB: Heavily Modified Water Body, AWB: Artificial Water Body*

Table 4.1-4: Reservoir WB with new typology per RB of the RBD of Thessalia (EL08)

No	Name of WB	WB code	Category (1)	Area (km²)	Perimeter (km)	Immediate catchment area (km²)	Upstream catchment area (km²)	Average Annual Flow (hm³)	Type of WB
PENEIO RIVER BASIN (EL0816)									

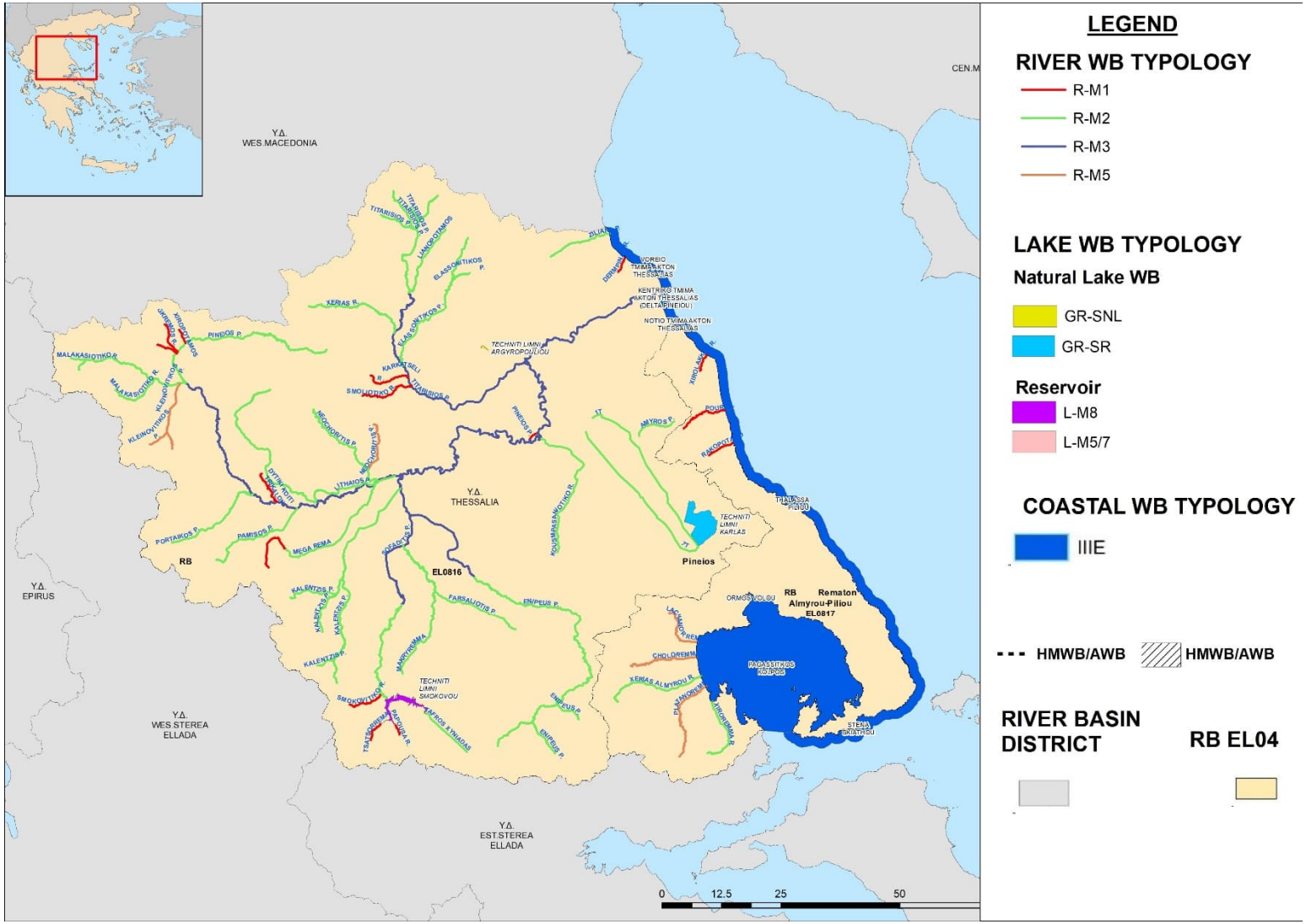
1	TECHNITI LIMNI SMOKOVOU	EL0816RL00206201H	HMWB	9,92	18,3	74,46	369,01	96,04	L-M8

(1) NAT: Natural Water Body, HMWB: Heavily Modified Water Body, AWB: Artificial Water Body

Table 4.1-5: List and characteristics of coastal water bodies per RB of the RBD of Thessalia (EL08)

No	Name of WB	WB code	Category(1)	Area (km²)	Perimeter (km)	Type of WB
PENEIO RIVER BASIN (EL0816)						
1	VOREIO TMIMA AKTON THESSALIAS	EL0816C0001N	NAT	28,2	37,36	IIIE
2	KENTRIKO TMIMA AKTON THESSALIAS (DELTA PINEIOU)	EL0816C0002N	NAT	19,88	25,09	IIIE
SALT - CLAY STREAM LAMP (EL0817)						
3	NOTIO TMIMA AKTON THESSALIAS	EL0817C0003N	NAT	46,28	59,02	IIIE
4	THALASSA PILIOU	EL0817C0004N	NAT	104,56	155,35	IIIE
5	STENA SKIATHOU	EL0817C0005N	NAT	117,15	172,47	IIIE
6	PAGASSITIKOS KOLPOS	EL0817C0006N	NAT	623,96	248,40	IIIE
7	ORMOS VOLOU*	EL0817C0007H	NAT	3,35	18,06	IIIE

(1) NAT: Natural Water Body, HMWB: Heavily Modified Water Body, AWB: Artificial Water Body
** Differences in the coding of river water bodies compared to the 1st Update of the RBMP, due to the change of the assessment of water bodies from Natural to HMWB and vice versa*



Map 4.1-1:Map of surface WB of the RBD of Thessalia (EL08)

4.2 Groundwater bodies

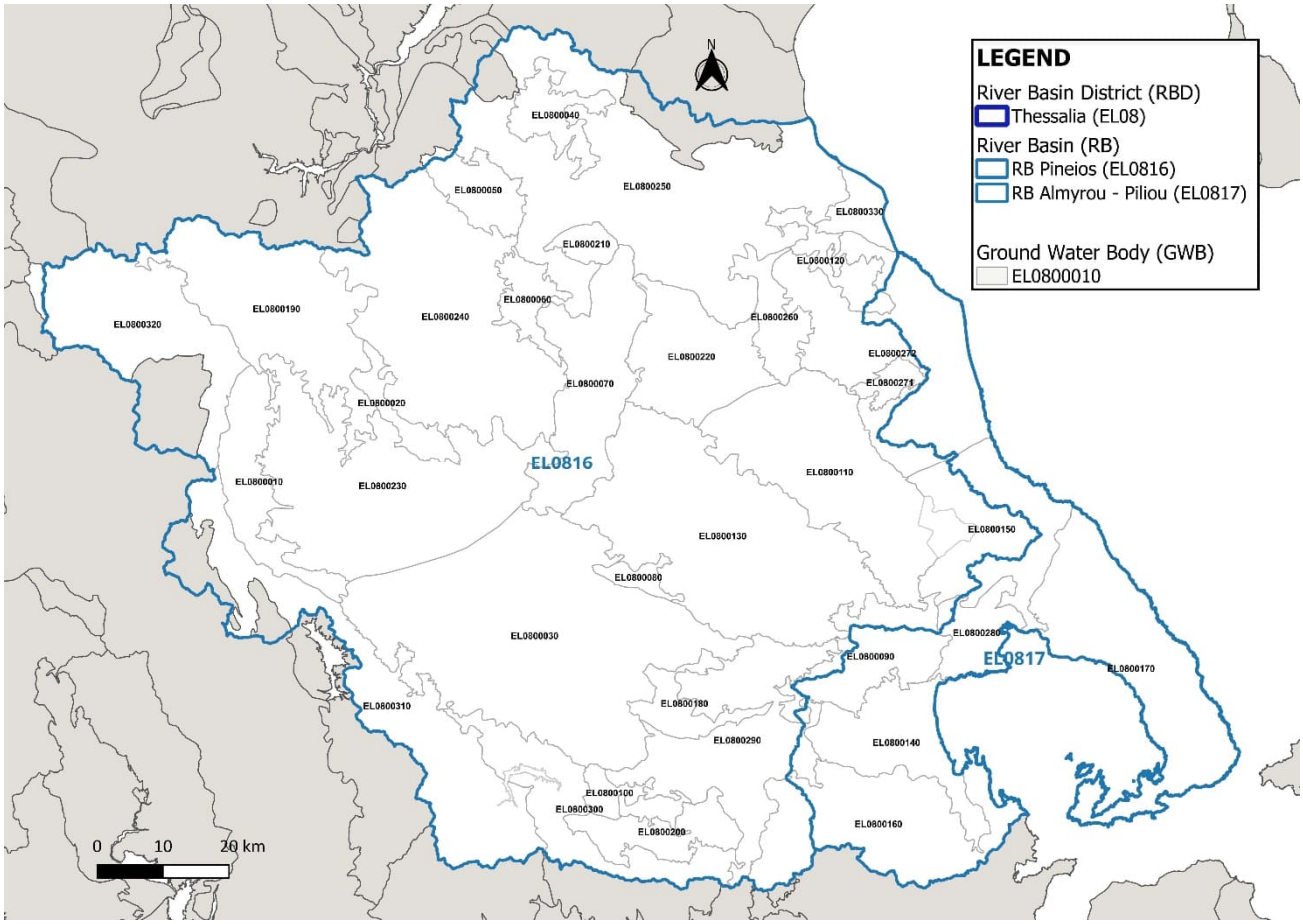
In the framework of the 2nd Update of the RBMP of the River Basin District of Thessalia (EL08), the originally defined GWB were reviewed, and taking into account all subsystems, the number of delineated GWB, in relation to the 1st Update, is modified from 33 to a total of 34.

The table and the map below present the GWB of the River Basin District of Thessalia (EL08) during the 2nd Update of the RBMP.

Table 4.2-1: Groundwater bodies in the RBD of Thessalia (EL08)

No	Name of the GWB	GWB code	Area (x10^6 m)^2
	PINEIOS RB (EL0816)		
1	SYSTIMA KOZIAKA	EL0800010	219,34
2	SYSTIMA PALIOSAMARINAS-VOULAS	EL0800020	75,61
3	SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS	EL0800030	1.261,70
4	SYSTIMA SARANTAPOROU	EL0800040	116,91
5	SYSTIMA KRANIAS-ELASSONOS	EL0800050	124,88
6	SYSTIMA POTAMIAS	EL0800060	86,70
7	SYSTIMA DAMASIOU-TITANOU	EL0800070	382,87
8	SYSTIMA FYLLIIOU-ORFANON	EL0800080	37,12
9	SYSTIMA EKKARAS-VELESIOTON	EL0800100	42,38
10	SYSTIMA LARISSAS-KARLAS	EL0800110	578,44
11	SYSTIMA KATO OLYMPOU-OSSAS	EL0800120	94,86
12	SYSTIMA TAOUSANIS-KALOU NEROU	EL0800130	922,28
13	SYSTIMA NARTHAKIOU-VRYSION	EL0800180	98,06
14	SYSTIMA CHASION-ANTICHASION	EL0800190	532,58
15	SYSTIMA XYNIADOS	EL0800200	146,05
16	SYSTIMA ELASSONAS-TSARITSANIS	EL0800210	45,19
17	SYSTIMA KONOU TITARISIOU	EL0800220	309,76
18	SYSTIMA KONOU PINEIOU-PORTAIKOU-PAMISOU	EL0800230	819,83
19	SYSTIMA YDROFORION CHASION-FARKADONAS	EL0800240	854,14
20	SYSTIMA YDROFORION KATO OLYMPOU-SARANTAPOROU	EL0800250	1.150,08
21	SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU	EL0800260	113,71
22	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (A)	EL0800271	40,38
23	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (B)	EL0800272	608,15
24	SYSTIMA YDROFORION ANO ROU ENIPEA	EL0800290	494,07
25	SYSTIMA YDROFORION XYNIADAS-KEDROU	EL0800300	314,98
26	SYSTIMA YDROFORION ELATIS-RENTINAS	EL0800310	600,07

No	Name of the GWB	GWB code	Area (x10^6 m)^2
27	SYSTIMA YDROFORION MALAKASIOTIKOU REMATOS	EL0800320	439,26
28	SYSTIMA EKBOLON PINEIOU	EL0800330	74,39
	ALMYROU-PILIOU RB (EL0817)		
29	LOFODES SYSTIMA ALMYROU-VELESTINOU	EL0800090	251,80
30	SYSTIMA ALMYROU	EL0800140	268,55
31	SYSTIMA MAVROVOUNIOU-KARLAS	EL0800150	375,80
32	SYSTIMA ORTHRYOS	EL0800160	505,86
33	SYSTIMATA PILIOU	EL0800170	589,56
34	SYSTIMA YDROFORION N. ANCHIALOU-N. IONIAS	EL0800280	127,90



Map 4.2-1: Location and boundaries of groundwater bodies in Thessalia (EL08)

4.3 Heavily Modified Water Bodies (HMWB) and Artificial Water Bodies (AWB)

In the River Basin District of Thessalia (EL08) 12 HMWB and 4 AWB were identified out of a total of 82 water bodies.

Table 4.3-1: Overview of the number and coverage of heavily modified and artificial water bodies in the River Basin District of Thessalia (EL08)

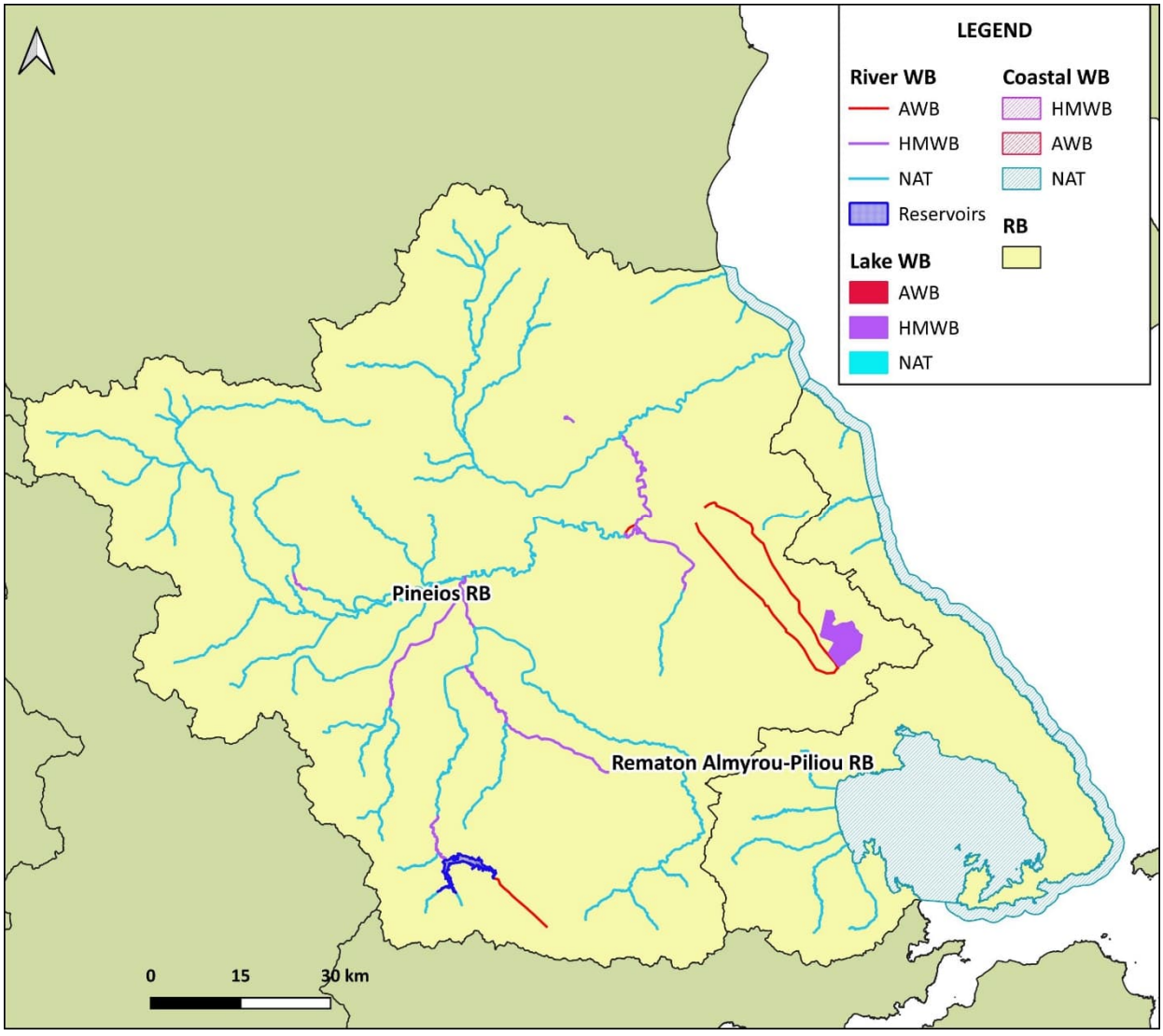
	Heavily modified Water Bodies		Artificial Water Bodies	
	Number of Water Bodies	Coverage (%)	Number of Water Bodies	Coverage (%)
Lake Water Bodies	2	100	0	0
Rivers Water Bodies (length along rivers - streams)	9	10,1	4	6,4
Reservoirs WB	1	100	0	0
Coastal Water Bodies	0	0	0	0

The table and map below present the surface water bodies that have been designated as heavily modified and artificial in the River Basin District of Thessalia (EL08). The table presents their main characteristics, as well as the 'determined water use' (activity) of Article 4(3)(a) of the WFD to which each water body is designated.

Table 4.3-2: Designated heavily modified water bodies per RB in the River Basin District of Thessalia (EL08).

NAME	CODE	TYPE OF WB	SURFACE - LENGTH	" DETERMINED WATER USE " IN ACCORDANCE WITH ARTICLE 4(3)(a) of the WFD	CHARACTERISTICS
PINEIOS RB (EL0816)					
TECHNITI LIMNI KARLAS	EL0816L000000002H	RL	34.93 km²	Water storage: irrigation, flood protection	HMWB
TECHNITI LIMNI SMOKOVOU	EL0816RL00206201H	RL	9.92 km²	Water storage: irrigation, hydropower generation, water supply	HMWB
SOFADITIS P. 3	EL0816R000206231H	R	10.63 km	Recreation	HMWB
TECHNITI LIMNI ARGYROPOULIOU	EL0816L000000001H	L	0,49 km²	Water storage: irrigation, recreation	HMWB
LITHAIOS P. 2	EL0816R000210045H	R	3.87 km	Flood protection	HMWB
PINEIOS P. 5	EL0816R000200015H	R	27.54 km	Flood protection	HMWB
PINEIOS P. 6	EL0816R000200017H	R	6.62 km	Water storage: irrigation, water regulation, flood protection	HMWB
KOUSMPASANIOTIKOS R. 1	EL0816R000204018H	R	16.74 km	Flood protection	HMWB

NAME	CODE	TYPE OF WB	SURFACE - LENGTH	" DETERMINED WATER USE " IN ACCORDANCE WITH ARTICLE 4(3)(a) of the WFD	CHARACTERISTICS
ENIPEUS P. 1	EL0816R000206023H	R	11.53 km	Irrigation, water regulation, flood protection	HMWB
KALENTZIS P. 1	EL0816R000206124H	R	25.53 km	Flood protection	HMWB
FARSALIOTIS P. 1	EL0816R000206227H	R	17.74 km	Flood protection	HMWB
FARSALIOTIS P. 2	EL0816R000206229H	R	20.27 km	Flood protection	HMWB
7T	EL0816R000000064A	R	36.16 km	Flood protection	AWB
1T	EL0816R000000062A	R	37.89 km	Flood protection	AWB
PINEIOS P. 7	EL0816R000200016A	R	2.33 km	Flood protection	AWB
TAFROS XYNIADAS	EL0816R000206235A	R	12.16 km	Flood protection	AWB
**HMWB: Specially modified water body, AWB: Artificial water body*					



Map 4.3-1: Overview of heavily modified water bodies in the River Basin District of Thessalia (EL08)

4.4 Protected Areas

In accordance with Article 6 of Directive 2000/60/EC, Member States shall ensure the establishment of a Registry of all areas lying within each river basin district which have been designated as requiring special protection under specific provisions of EU legislation for the protection of their surface water and groundwater or the conservation of habitats and species directly depending on water.

This registry is called the Registry of Protected Areas (RPAs) and according to Annex V of Presidential Decree 51/2007, it includes all the following types of areas:

- **Areas designated for the abstraction of water intended for human consumption**, in accordance with Article 7 of PD 51/2007 (Article 7 of Directive 2000/60/EC). In relation to the 1st Update, the T. L. Smokovou has been added in the areas designated for the abstraction of water intended for human consumption:

The table below shows the groundwater bodies used for abstracting water intended for human consumption.

Table 4.4-1: Groundwater Bodies included in the registry of protected areas of the River Basin District of Thessalia (EL08)

No	Name of the GWB	GWB code	Register of protected areas Article A7 code	Type of aquifer
PENEIO RIVER BASIN (EL0816)				
1	SYSTIMA KOZIAKA	EL0800010	EL0800010A7	Karstic / Cracked
2	SYSTIMA PALIOSAMARINAS-VOULAS	EL0800020	EL0800020A7	Karstic
3	SYSTIMA KRANIAS-ELASSONOS	EL0800050	EL0800050A7	Karstic
4	SYSTIMA DAMASIOU-TITANOU	EL0800070	EL0800070A7	Karstic
5	SYSTIMA EKKARAS-VELESIOTON	EL0800100	EL0800100A7	Karstic
6	SYSTIMA KATO OLYMPOU-OSSAS	EL0800120	EL0800120A7	Karstic
7	SYSTIMA NARTHAKIOU-VRYSION	EL0800180	EL0800180A7	Karstic

In the River Basin District of Thessaly, the only surface water system used for water supply and therefore included in the protected drinking water areas is the Techniti Limni Smokovou. It should be noted that the Techniti Limni Smokovou, which belongs to the neighbouring River Basin District of Western Sterea Ellada (EL04), contributes to the water supply of Karditsa and the surrounding municipalities of the River Basin District of Thessalia.

- Water bodies designated as **recreational waters**, including areas designated as **bathing waters**:

In the River Basin District of Thessalia (EL08) 69 areas have been designated and are included in the Registry of Bathing Water Areas of Greece, according to the list of bathing waters areas, which was posted on the EU website (https://cdr.eionet.europa.eu/gr/eu/bwd/bwd_788/envzhda6w/) in May

2023. Compared to the 1st Update, 4 new bathing water areas have been added (Neos Panteleimonas - ELBW089046068, Rakopotamos - ELBW089097069, Kritharia - ELBW089105066 and Mamidaki - ELBW089105067).

Furthermore, as far as recreational waters are concerned, there are regulated recreational activities in the RBD of Thessalia (EL08). The most important of these activities are considered to be rafting and kayaking on the rivers of the region, canyoning and lake-based nautical activities. In total one protected inland water recreation area has been designated. Compared to the 1st Update, no changes have been recorded.

- **Areas sensitive to the presence of nutrients**, including areas designated as **vulnerable zones** (Nitrates Directive), and areas designated as **sensitive** (Urban Wastewater Treatment Directive):

Vulnerable zones

Regarding the zones vulnerable to nitrate pollution of agricultural origin in the RBD of Thessalia (EL08), the designated area 'Pinios - Thessaliko Pedio' (EL0816NI01), according to MD 19661/1982/1999 (Government Gazette B' 1575/05-08-1999) and amended by JMD 147070/02 (Government Gazette B' 3224) with the addition of the area 'Almyros Magnesias', falls within the RBD. Compared to the 1st Update, there has been no differentiation.

Table 4.4-2: Groundwater bodies falling within the area of the Pinios - Thessaliko Pedio

WB code	Name of WB
River Water Bodies	
EL0816R000200022N	PINEIOS P. 10
EL0817R000301066N	POURI R.
EL0817R000701068N	LACHANORREMA
EL0817R000901069N	CHOLOREMMA
EL0817R001101070N	XERIAS ALMYROU R.
EL0817R001301071N	PLATANOREMMA R.
EL0816R000000064A	7T
EL0816R000000062A	1T
EL0816R000000163N	AMYROS P.
EL0816R000202007N	TITARISIOS P. 2
EL0816R000200016A	PINEIOS P. 7
EL0816R000204019N	KOUSMPASANIOTIKO R. 2
EL0816R000202108N	SMOLIOTIKO R.
EL0816R000202209N	KARKATSELI R.
EL0816R000202411N	XERIAS R.
EL0816R000202310N	ELASSONITIKOS P.
EL0816R000202512N	TITARISIOS P. - PARAPOTAMOS LIANOPOTAMOS
EL0816R000206235A	TAFROS XYNIADAS
EL0816R000206234N	PAPOUSA R.
EL0816R000206233N	TSATSORREMA

WB code	Name of WB
EL0816R000206232N	SMOKOVITIKO R.
EL0816R000206227H	FARSALIOTIS P. 1
EL0816R000206228N	MAKRYREMMA
EL0816R000210042N	LITHAIOS P. 1
EL0816R000214050N	DYTIKI KOITI TRIKALON
EL0816R000210143N	NEOCHORITIS P.
EL0816R000210144N	NEOCHORITIS P. - PARAPOTAMOS
EL0816R000208040N	MEGA REMA
EL0816R000212048N	PAMISOS P. 1
EL0816R000218054N	MALAKASIOTIKO R.
EL0816R000220057N	TRANO POTAMI
EL0816R000222058N	GKREMOS R.
EL0816R000218155N	KLEINOVITIKOS P.
EL0816R000206226N	SOFADITIS P. 1
EL0816R000206231H	SOFADITIS P. 3
EL0816R000206229H	FARSALIOTIS P. 2
EL0816R000212049N	PAMISOS P. 2
EL0816R000224059N	XIROPOTAMOS
EL0816R000200056N	ION P. 1
EL0816R000210047N	LITHAIOS P. 4
EL0816R000200060N	ION P. 2
EL0816R000206036N	ENIPEUS P. 2
EL0816R000208041N	MEGA REMA 2
EL0816R000202013N	TITARISIOS P. 3
EL0816R000200053N	PINEIOS P. 12
EL0816R000206125N	KALENTZIS P. 2
EL0816R000206124H	KALENTZIS P. 1
EL0816R000210045H	LITHAIOS P. 2
EL0816R000216051N	PORTAIKOS P. 1
EL0816R000216052N	PORTAIKOS P. 2
EL0816R000200017H	PINEIOS P. 6
EL0816R000200015H	PINEIOS P. 5
EL0816R000200004N	PINEIOS P. 3
EL0816R000201002N	PINEIOS P. 1
EL0816R000206038N	ENIPEUS P. 4
EL0816R000206037N	ENIPEUS P. 3
EL0816R000206230N	SOFADITIS P 2.
EL0816R000206023H	ENIPEUS P. 1
EL0816R000210046N	LITHAIOS P. 3

WB code	Name of WB
EL0816R000200039N	PINEIOS P. 11
EL0816R000200021N	PINEIOS P. 9
EL0816R000200020N	PINEIOS P. 8
EL0816R000204018H	KOUSMPASANIOTIKO R. 1
EL0816R000200005N	PINEIOS P. 4
EL0816R000200003N	PINEIOS P. 2
EL0816R000202014N	TITARISIOS P. 4
EL0816R000202006N	TITARISIOS P. 1
EL0817R001501072N	XIROREMMA R.
Lake Water bodies	
EL0816L000000002H	TECHNITI LIMNI KARLAS
EL0816RL00206201H	TECHNITI LIMNI SMOKOVOU
EL0816L000000001H	TECHNITI LIMNI ARGYROPOULIOU
Groundwater Bodies	
EL0800010	SYSTIMA KOZIAKA
EL0800020	SYSTIMA PALIOSAMARINAS-VOULAS
EL0800030	SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS
EL0800040	SYSTIMA SARANTAPOROU
EL0800050	SYSTIMA KRANIAS-ELASSONOS
EL0800060	SYSTIMA POTAMIAS
EL0800070	SYSTIMA DAMASIOU-TITANOU
EL0800080	SYSTIMA FYLLIIOU-ORFANON
EL0800100	SYSTIMA EKKARAS-VELESIOTON
EL0800110	SYSTIMA LARISSAS-KARLAS
EL0800120	SYSTIMA OLYMPOU-OSSAS
EL0800130	SYSTIMA TAOUSANIS-KALOU NEROU
EL0800180	SYSTIMA NARTHAKIOU-VRYSION
EL0800190	SYSTIMA CHASION-ANTICHASION
EL0800200	SYSTIMA XYNIADOS
EL0800210	SYSTIMA ELASSONAS-TSARITSANIS
EL0800220	SYSTIMA KONOU TITARISIOU
EL0800230	SYSTIMA KONOU PINEIOU-PORTAIKOU-PAMISOU
EL0800240	SYSTIMA YDROFORION CHASION-FARKADONAS
EL0800250	SYSTIMA YDROFORION KATO OLYMPOU-SARANTAPOROU
EL0800260	SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU
EL0800271	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (A)
EL0800272	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (B)
EL0800290	SYSTIMA YDROFORION ANO ROU ENIPEA
EL0800300	SYSTIMA YDROFORION XYNIADAS-KEDROU

WB code	Name of WB
EL0800310	SYSTIMA YDROFORION ELATIS-RENTINAS
EL0800320	SYSTIMA YDROFORION MALAKASIOTIKOU REMATOS
EL0800330	SYSTIMA EKBOLON PINEIOU
EL0800090	LOFODES SYSTIMA ALMYROU-VELESTINOU
EL0800140	SYSTIMA ALMYROU
EL0800150	SYSTIMA MAVROVOUNIOU-KARLAS
EL0800160	SYSTIMA ORTHRYOS
EL0800170	SYSTIMATA PILIOU
EL0800280	SYSTIMA YDROFORION N. ANCHIALOU-N. IONIAS

Sensitive Areas

Regarding the sensitive areas in the River Basin District of Thessalia (EL08), on the basis of the M.D. 19661/1982/1999 (Government Gazette 1811B'/29.09.1999), as amended by the Ministry of Environment and Natural Resources J.M.D. 136843/22 (Government Gazette B' 7215/31-12-22), no sensitive receptors are identified with regard to urban wastewater.

- Areas designated for the **protection of habitats or species** where the conservation or improvement of water status is important for their protection, including relevant NATURA 2000 sites.

The selection and designation of protected natural areas is adapted to the national circumstances of each Member State. Due to the diversity of conditions within the European Union, Member States can apply the guidelines of the Guidance Documents in a flexible way since the characteristics as well as the problems faced by each RB vary from region to region. These areas are presented below:

In total, 27 Natura 2000 sites are found in the River Basin District of Thessalia (EL08), of which 11 have been designated as SAC, 14 have been designated as SPA, while 2 sites have been designated as both SAC and SPA. The following table presents the Natura sites located on the boundaries of the River Basin District of Thessalia. In relation to the 1st Update, there has been no differentiation .

Table 4.4-3: Natura 2000 network sites in the River Basin District of Thessalia (EL08)

No	Code Natura	Name of area	Category
1	GR1250001	OROS OLYMPOS	SAC & SPA
2	GR1250003	OROS TITAROS	SAC
3	GR1420001	KATO OLYMPOS - KALLIPEFKI	SAC
4	GR1420003	AISTHITIKO DASOS OSSAS	SAC
5	GR1420004	KARLA – MAVROVOUNI – KEFALOVRYSO VELESTINOU – NEOCHORI	SAC
6	GR1420005	AISTHITIKO DASOS KOILADAS TEMPON	SAC & SPA
7	GR1420006	OROS MAVROVOUNI	SPA
8	GR1420007	OROS OSSA	SPA

No	Code Natura	Name of area	Category
9	GR1420008	KATO OLYMPOS, OROS GODAMANI KAI KOILADA RODIAS	SPA
10	GR1420009	STENA KALAMAKIOU KAI ORI ZARKOU	SPA
11	GR1420010	STENA KALAMAKIOU	SAC
12	GR1420011	PERIOCHI THESSALIKOU KAMPOU	SPA
13	GR1420012	PERIOCHI FARSALON	SPA
14	GR1420013	PERIOCHI TYRNAVOU	SPA
15	GR1420014	PERIOCHI ELASSONAS	SPA
16	GR1420015	DELTA PINEIOU	SPA
17	GR1430001	OROS PILIO KAI PARAKTIA THALASSIA ZONI- SPILAIA MALAKI KAI SKEPONI	SAC
18	GR1430002	KOURI ALMYROU - AGIOS SERAFEIM	SAC
19	GR1430006	OROS OTHRYS, VOUNA GKOURAS KAI FARANGI PALAIOKERASIAS	SPA
20	GR1430007	PERIOCHI TAMIEFTIRON PROIN LIMNIS KARLAS	SPA
21	GR1430008	OROS PILIO	SPA
22	GR1440001	ASPROPOTAMOS	SAC
23	GR1440002	KERKETIO OROS (KOZIAKAS)	SAC
24	GR1440003	ANTICHASIA ORI KAI METEORA - SPILAIO MELISSOTRYPA	SAC
25	GR1440005	ANTICHASIA ORI - METEORA	SPA
26	GR1440006	KORYFES OROUS KOZIAKA	SPA
27	GR2130006	PERIOCHI METSOVOU (ANILIO - KATARA)	SAC

The table below presents areas protected by national legislation, in particular National Parks, Ecodevelopment Areas and nature conservation areas located within the boundaries of the River Basin District of Thessalia (EL08). Compared to the 1st Update, there has been a differentiation, which concerns the designation of the National Forest of Olympus as a National Park under the Presidential Decree of 16/08/2021 (Government Gazette D' 610/17-09-2021).

Table 4.4-4: Other areas of natural environment protection in the River Basin District of Thessalia (EL08)

No	Name of area
1	PERIOCHI PROSTASIAS OIKOTOPON KAI EIDON KARLAS – MAVROVOUNIOU – KEFALOBRYSOU - VELESTINOU
2	ETHNIKO PARKO OLYMPOU (NATIONAL PARK)

- Areas designated for the **protection of aquatic species of economic importance**:

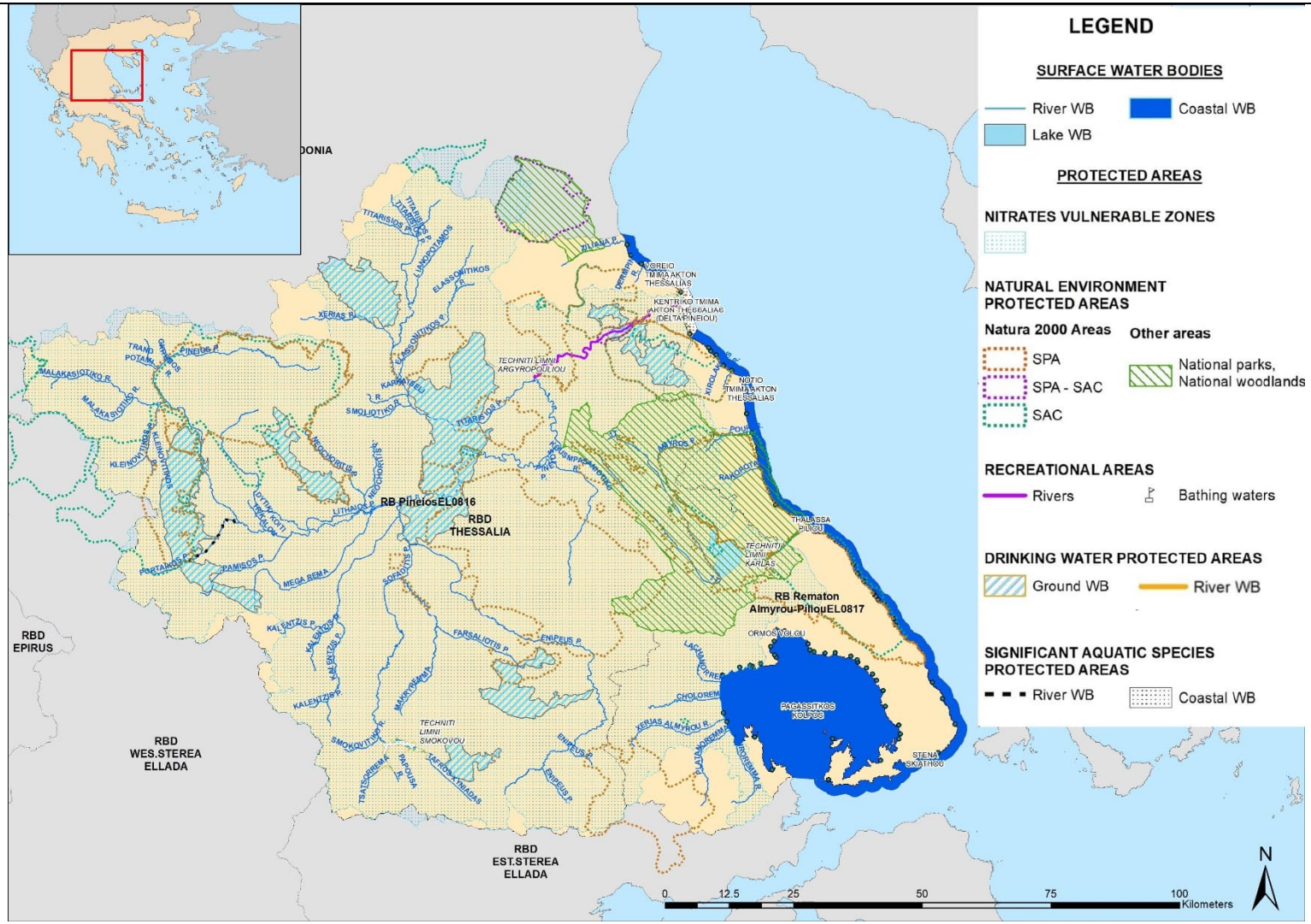
Taking into account the size and type of existing aquaculture facilities, the list of Protected Areas of Aquatic Species of Economic Importance in the RBD of Thessalia (EL08) was established. Compared to the 1st Update, there has been no differentiation. The table below shows these areas and the water bodies to which they belong to.

Table 4.4-5: Designated protected areas of aquatic species of economic importance in the River Basin District of Thessalia and their respective WB

No	Area of economic importance for aquatic species	Description of the Area	Corresponding WB code	Name of the corresponding WB
1	Portaikos River	Part of the Portaikos River, approximately 16 km long, ending at its confluence with the Pineios River (Pineios River Basin)	EL0816R000216051N	PORTAIKOS P. 1
2	Central part of the Thessaly coast (Pinios Delta)	Part of the Thessaly coast in the wider area of the Pineios estuary	EL0816C0002N	KENTRIKO TMIMA AKTON THESSALIAS (DELTA PINEIOU)

The protected areas for aquatic species of economic importance are related to Directive 2006/44/EC on the "quality of fresh waters needing protection or improvement in order to support fish life" and Directive 2006/113/EC on the "water quality required for shellfish".

The map below shows graphically all the protected areas of the River Basin District of Thessalia (EL08), as mentioned above.



Map 4.4-1: Protected areas in the River Basin District of Thessalia (EL08)

5 PRESSURES AND IMPACTS

Anthropogenic pressures on water bodies are defined as all human activities that affect or may affect the water bodies of the area in which they are developed. These pressures are identified as significant if they are a cause for the water bodies to be at risk of not achieving the environmental objectives in accordance to the methodology described in EU Guidance Document No 03.

The following are the results of the anthropogenic pressures analysis carried out for the purposes of the 2nd Update of the RBMP.

5.1 Point sources of pollution

This section includes all point sources of pollution that produce conventional pollutants (BOD_5, N, P) and have been considered in the Document: 'Analysis of anthropogenic pressures and their effects on surface and groundwater bodies, as 'pressures'. The list of categories of such pressures includes:

-Wastewater Treatment Plants (WWTP)

-Discharges of sewerage networks to a natural recipient

-Large hotel units

-Industrial sites

-Livestock farms

-Fisheries - Aquaculture

-Runoff from landfills and landfill sites

The total annual amounts of pollutant loads of BOD_5, N and P, potentially discharged to surface and groundwater bodies in the study area are presented per RB and point pressure category in the following Figure.

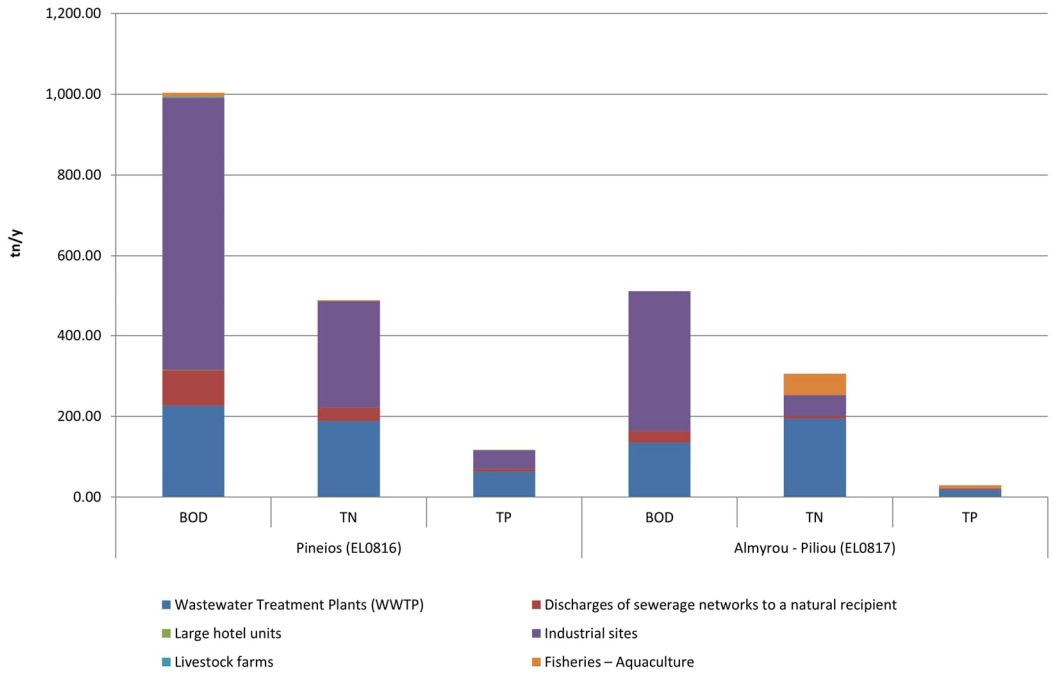


Figure 5.1-1:Total annual loads of BOD_5, N and P produced in river basins (EL0816) and (EL0817), from point sources of pollution

The tables below present the total annual loads estimated to affect surface systems, resulting from the sum of the individual point pressures, per RB for the River Basin District of Thessalia (EL08).

Table 5.1-1: Total annual loads of BOD_5, N and P produced by point sources of pollution in the Pineios RB (EL0816)

POINT SOURCES OF POLLUTION	Annual BOD (tn/y)	Annual N (tn/y)	Annual P (tn/y)
Wastewater Treatment Plants (WWTP)	226,42	188,29	62,33
Discharges of sewerage networks to a natural recipient (not connected to WWTP)	87,20	33,10	6,89
Large hotel units	0,72	0,35	0,21
Industrial units	676,26	265,44	46,35
Livestock farms	2,56	0,49	0,81
Aquaculture - Fish farms	10,39	2,09	0,35
TOTAL	**1.003,52**	**489,74**	**116,93**

The loads of BOD_5, N and P from livestock farms are calculated based on the updated methodology for the analysis of anthropogenic pressures and their impact on water bodies, where pollution from livestock farms on surface water bodies is only calculated in cases of proven surface runoff into them. The annual loads from livestock farms potentially affecting groundwater bodies in the Pineios RB are estimated as follows 327.1 tn/y BOD_5, 143.5 tn/y N and 53.2 tn/y P.

Table 5.1-2: Total annual loads of BOD_5, N and P produced by point sources of pollution in the Rematon Almyrou - Piliou RB (EL0817)

POINT SOURCES OF POLLUTION	Annual BOD (tn/y)	Annual N (tn/y)	Annual P (tn/y)
Wastewater Treatment Plants (WWTP)	134,74	193,84	17,54
Discharges of sewerage networks to a natural recipient (not connected to WWTP)	28,73	6,19	1,29
Industrial units	348,45	52,13	3,02
Aquaculture - Fish farms	0,00	53,55	7,29
TOTAL	**511,92**	**305,71**	**29,13**

The loads of BOD_5, N and P from livestock farms are calculated based on the updated methodology for the analysis of anthropogenic pressures and their impact on water bodies, where pollution from livestock farms on surface water bodies is only calculated in cases of proven surface runoff into them. The annual loads from livestock farms potentially affecting groundwater bodies in the Rematon Almyrou - Piliou RB are estimated as follows 21.0 tn/y BOD_5, 11.8 tn/y N and 3.8 tn/y P.

5.2 Diffuse sources of pollution

All diffuse sources of pollution associated with conventional pollutants (BOD_5, N, P) are included. The list of categories of these pressures includes:

-Agricultural activities

-Wastewater that does not end up in a WWTP

-Livestock farming (pastoral)

-Contamination of water from other sources

The total annual quantities of pollutant loads of BOD_5, N and P generated by diffuse sources of pollution in the study area, are presented per RB and diffuse pressure category in the following Figure.

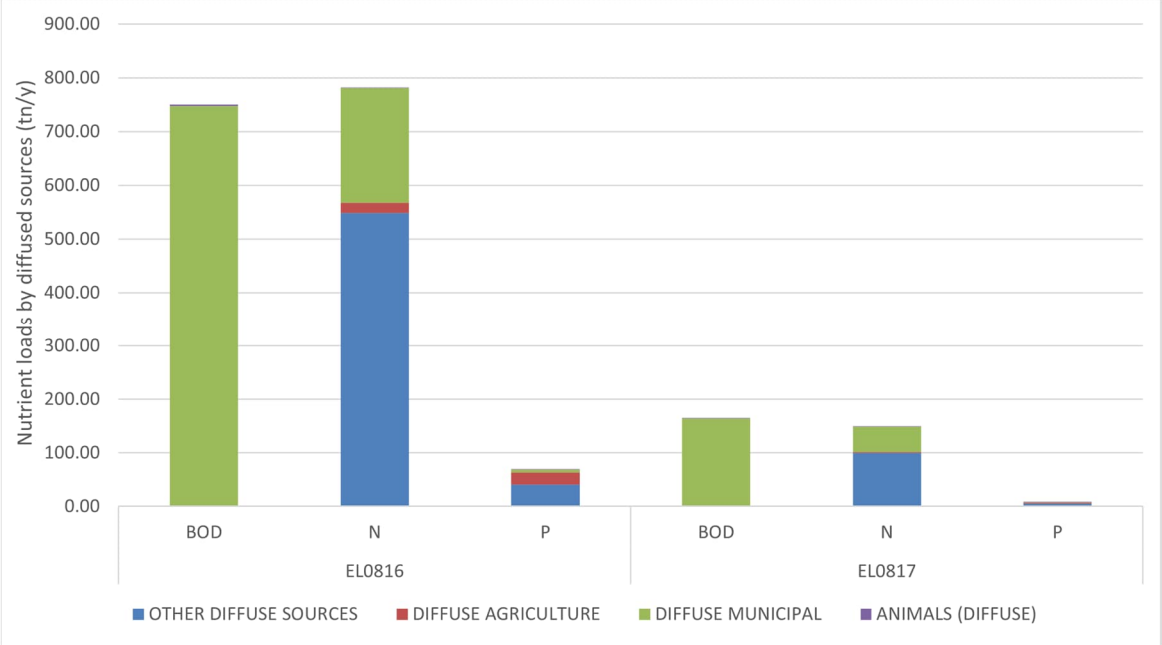


Figure 5.2-1:Total annual surface loads of BOD_5, N and P in river basins (EL0816) and (EL0817) from diffuse sources of pollution

The tables below present the total annual loads potentially discharged to surface water bodies resulting from individual diffuse pressures, per RB for the River Basin District of Thessalia (EL 08).

Table 5.2-1: Total annual loads of BOD_5, N and P potentially discharged from diffuse sources of pollution in the surface water bodies of the Pineio RB (EL0816)

LAND USE	Annual BOD (tn/y)	Annual N (tn/y)	Annual P (tn/y)
URBAN	747,80	213,66	5,90
AGRICULTURE	0,00	19,10	22,13
LIVESTOCK	2,58	1,32	0,33
OTHER SOURCES	0,00	548,50	40,79
TOTAL	**750,39**	**782,58**	**69,15**

Table 5.2-2: Total annual loads of BOD_5, N and P potentially discharged from diffuse sources of pollution in the surface water bodies of the Rematon Almyrou - Piliou RB (EL0817)

LAND USE	Annual BOD (tn/y)	Annual N (tn/y)	Annual P (tn/y)
URBAN	164,54	47,01	1,17
AGRICULTURE	0,00	1,38	1,55
LIVESTOCK	0,02	0,02	0,01
OTHER SOURCES	0,00	100,02	5,56
TOTAL	**164,56**	**148,43**	**8,29**

5.3 Hydromorphological pressures

Hydromorphological pressures caused by engineering works or other anthropogenic interventions on surface water bodies are classified as Negligible, Low, Moderate, Intense, and Significant, depending on the magnitude of the pressure they are subjected to. It is noted that WB with Intense and Significant hydromorphological alteration were further considered for designation as a Heavily Modified WB.

The assessment of hydromorphological alterations in surface water bodies in the River Basin District of Thessalia (EL08) is presented in the following tables per RB. It should be clarified that the hydromorphological interventions in artificial water bodies essentially are related to interventions resulting from the objectives these bodies serve and are not included in these tables.

Table 5.3-1: Assessment of hydromorphological pressures/alterations of the river, lake and transitional water bodies in the Pineios RB of the RBD of Thessalia (EL08)

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
EL0816L000000001H	TECHNITI LIMNI ARGYROPOULIOU	0,49	Abstractions, Intensive uses	Intense
EL0816L000000002H	TECHNITI LIMNI KARLAS	34,93	Abstractions, Intensive uses, Embankments	Intense
EL0816R000000062A	1T	37,899	Artificial WB	Intense
EL0816R000000064A	7T	36,171	Artificial WB	Intense
EL0816R000000163N	AMYROS P.	9,545	Channel straightening-Transversal structure	Moderate
EL0816R000101001N	ZILIANA P.	14,808	Abstractions, Channel straightening-Transversal structure	Low
EL0816R000200003N	PINEIOS P. 2	8,022	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000200004N	PINEIOS P. 3	11,798	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000200005N	PINEIOS P. 4	10,151	Abstractions, Channel	Moderate

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
			straightening-Transversal structure	
EL0816R000200015H	PINEIOS P. 5	27,542	Girtoni dam, Abstractions, Channel straightening-Transversal structure	Intense
EL0816R000200016A	PINEIOS P. 7	2,329	Artificial WB	Intense
EL0816R000200017H	PINEIOS P. 6	6,624	Channel straightening-Transversal structure	Intense
EL0816R000200020N	PINEIOS P. 8	20,629	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000200021N	PINEIOS P. 9	4,198	Abstractions, Transversal structure	Moderate
EL0816R000200022N	PINEIOS P. 10	29,829	Abstractions, Transversal structure	Moderate
EL0816R000200039N	PINEIOS P. 11	42,206	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000200053N	PINEIOS P. 12	36,003	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000200056N	ION P. 1	36,948	Abstractions, Channel straightening-Transversal structure	Low
EL0816R000200060N	ION P. 2	11,882	Abstractions, Channel	Moderate

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
			straightening-Transversal structure	
EL0816R000201002N	PINEIOS P. 1	13,911	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000202006N	TITARISIOS P. 1	23,033	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000202007N	TITARISIOS P. 2	36,469	Abstractions, Channel straightening-Transversal structure	Low
EL0816R000202013N	TITARISIOS P. 3	17,566	Transversal structure	Low
EL0816R000202014N	TITARISIOS P. 4	33,433	Transversal structure	Low
EL0816R000202108N	SMOLIOTIKO R.	12,457	Channel straightening-Transversal structure	Moderate
EL0816R000202209N	KARKATSELI R.	10,289	Transversal structure	Low
EL0816R000202310N	ELASSONITIKOS P.	43,905	Channel straightening-Transversal structure	Low
EL0816R000202411N	XERIAS R.	26,052	Transversal structure	Low
EL0816R000202512N	TITARISIOS P. - PARAPOTAMOS	18,237	Transversal structure	Low
EL0816R000204018H	KOUSMPASANIOTIKO R. 1	16,747	Abstractions, Channel straightening-Transversal structure	Intense

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
EL0816R000204019N	KOUSMPASANIOTIKO R. 2	16,949	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000206023H	ENIPEUS P. 1	11,536	Abstractions, Channel straightening-Transversal structure	Intense
EL0816R000206036N	ENIPEUS P. 2	24,961	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000206037N	ENIPEUS P. 3	29,296	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000206038N	ENIPEUS P. 4	66,485	Abstractions, Transversal structure	Low
EL0816R000206124H	KALENTZIS P. 1	25,534	Abstractions, Channel straightening-Transversal structure	Intense
EL0816R000206125N	KALENTZIS P. 2	63,334	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000206226N	SOFADITIS P. 1	25,825	Abstractions, Smokovo dam, Channel straightening-Transversal structure	Moderate
EL0816R000206227H	FARSALIOTIS P. 1	17,744	Abstractions, Channel straightening-	Intense

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
			Transversal structure	
EL0816R000206228N	MAKRYREMMA	24,958	Abstractions, Channel straightening- Transversal structure	Moderate
EL0816R000206229H	FARSALIOTIS P. 2	20,27	Abstractions, Channel straightening- Transversal structure	Intense
EL0816R000206230N	SOFADITIS P. 2	19,29	Abstractions, Smokovo dam, Transversal structure	Moderate
EL0816R000206231H	SOFADITIS P. 3	10,63	Downstream Smokovo dam	Intense
EL0816R000206232N	SMOKOVITIKO R.	8,809	Transversal structure	Low
EL0816R000206233N	TSATSORREMA	5,026	Transversal structure	Low
EL0816R000206234N	PAPOUSA R.	2,34	No intervation	Negligible
EL0816R000206235A	TAFROS XYNIADAS	12,164	Artificial WB	Intense
EL0816R000208040N	MEGA REMA 1	32,519	Abstractions, Channel straightening- Transversal structure	Moderate
EL0816R000208041N	MEGA REMA 2	11,361	Abstractions, Channel straightening- Transversal structure	Moderate
EL0816R000210042N	LITHAIOS P. 1	30,161	Abstractions, Transversal structure	Low
EL0816R000210045H	LITHAIOS P. 2	3,87	Abstractions, Channel straightening- Transversal structure	Intense

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
EL0816R000210046N	LITHAIOS P. 3	3,067	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000210047N	LITHAIOS P. 4	25,598	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000210143N	NEOCHORITIS P.	27,26	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000210144N	NEOCHORITIS P. - PARAPOTAMOS	12,347	Channel straightening-Transversal structure	Moderate
EL0816R000212048N	PAMISOS P. 1	19,625	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000212049N	PAMISOS P. 2	5,487	Transversal structure	Low
EL0816R000214050N	DYTIKI KOITI TRIKALON	8,977	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000216051N	PORTAIKOS P. 1	16,108	Abstractions, Channel straightening-Transversal structure	Moderate
EL0816R000216052N	PORTAIKOS P. 2	8,39	Transversal structure	Low
EL0816R000218054N	MALAKASIOTIKO R.	43,776	Abstractions, Channel straightening-	Low

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
			Transversal structure	
EL0816R000218155N	KLEINOVITIKOS P.	20,281	Abstractions, Transversal structure	Low
EL0816R000220057N	TRANO POTAMI	4,768	Channel straightening-Transversal structure	Low
EL0816R000222058N	GKREMOS R.	7,326	Transversal structure	Low
EL0816R000224059N	XIROPOTAMOS	3,265	Transversal structure	Low
EL0816R000301061N	DERMPINAS R.	3,684	Channel straightening-Transversal structure	Moderate
EL0816RL00206201H	TECHNITI LIMNI SMOKOVOU	9,92	Reservoir	Intense

Table 5.3-2: Assessment of hydromorphological pressures/alterations of the river, lake and transitional water bodies in the Almiro-Pelius LFA of the RBD of Thessalia (EL08)

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
EL0817R000101065N	XIROLAKKAS R.	4,295	Channel straightening-Transversal structure	Low
EL0817R000301066N	POURI R.	11,756	Channel straightening-Transversal structure	Low
EL0817R000501067N	RAKOPOTAMO	6,11	Transversal structure	Low
EL0817R000701068N	LACHANORREMA	12,495	Channel straightening-Transversal structure	Moderate
EL0817R000901069N	CHOLOREMMA	18,154	Abstractions, Channel straightening-	Moderate

WB code	Name of WB	Length (km) or Area (km²)	Type of Intervention	Pressure Assessment
			Transversal structure	
EL0817R001101070N	XERIAS ALMYROU R.	24,331	Channel straightening-Transversal structure	Low
EL0817R001301071N	PLATANOREMMA R.	22,318	Abstractions, Transversal structure	Moderate
EL0817R001501072N	XIROREMMA R.	16,413	Abstractions, Channel straightening-Transversal structure	Moderate

Table 5.3-3: Assessment of hydromorphological pressures/alterations of the coastal water bodies of the RBD of Thessalia (EL08)

WB code	Name of WB	Exposure (km²)	Type of Intervention	Pressure Assessment
EL0817C0006N	PAGASSITIKOS KOLPOS	624,35	Ports, marinas, Piers, jetties, Walls, berths, Artificial reefs, Fish farms	Low
EL0816C0001N	VOREIO TMIMA AKTON THESSALIAS	28,22	Small port, Piers, jetties, breakwaters	Low
EL0817C0003N	NOTIO TMIMA AKTON THESSALIAS	46,30	Port, pier	Low
EL0816C0002N	KENTRIKO TMIMA AKTON THESSALIAS (DELTA PINEIOU)	19,89	No interventions	Negligible
EL0817C0004N	THALASSA PILIOU	104,62	Ports, piers, breakwaters	Negligible
EL0817C0005N	STENA SKIATHOU	117,23	Ports, Piers, jetties, Walls, berths	Negligible
EL0817C0007N	ORMOS VOLOU	3,35	Port of Volos, ports, Piers, jetties Walls, berths	Significant

Finally, the above 5-scale for the overall assessment of the intensity of hydromorphological alterations is converted to a 3-scale for the overall assessment of the intensity of pressures for the overall assessment of pressures of all categories per SWB, as follows:

Low (L)	Medium (M)	High (H)
(1) Negligible	(3) Moderate	(4) Intense
(2) Low		(5) SIgnificant

The table below gives an overview of the number and coverage (length for rivers and surface area for the rest of the SWB) of surface water bodies by hydromorphological alteration pressure intensity category, in the whole of the River Basin District of Thessalia (EL08).

Table 5.3-4: Overview of the number and coverage of surface water bodies by hydromorphological alteration pressure intensity category in the River Basin District of Thessalia (EL08)

Pressure intensity	Number of River WB (Rivers-Streams)	Coverage (%)	Number of Reservoirs	Coverage (%)	Number of Lake WB	Coverage (%)	Number of Coastal WB	Coverage (%)
Low	26	36,9	0	0,0	0	0,0	6	99,6
Medium	33	46,5	0	0,0	0	0,0	0	0,0
High	13	16,5	1	100,0	2	100,0	1	0,4

5.4 Water abstractions

This section includes data on total annual water abstractions for all activities and uses. The list with the categories of activities and uses considered includes:

- Water supply
- Irrigation
- Livestock
- Industrial water

From each of the above categories, the estimated total water abstraction that is carried out in the River Basin District of Thessalia to cover the water needs of the River Basin District, is approximately 1.271,1 hm^3 per year. Of these, the largest part is intended for irrigation (1170,2 hm^3), a significant part for water supply with (83,6 hm^3), while the estimated abstractions for livestock and industry are much smaller (5,5 hm^3 and 11,8 hm^3 respectively).

The distribution of the various uses of the abstractions implemented for the needs of the River Basin District of Thessalia (EL08) is shown in the figure below.

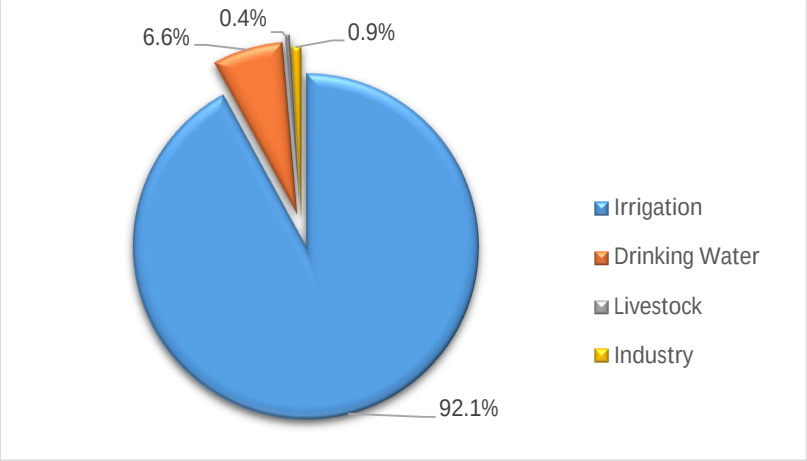


Figure 5.4-1: Distribution of annual water abstractions in the River Basin District of Thessalia (EL08)

Of these, it is estimated that about 357.5 hm^3 are abstractions from surface water bodies and about 913.6 hm^3 from groundwater. It should be noted that the abstractions from surface water bodies do not include the abstraction of about 128.5 hm^3 from the Techniti Limni Tavropou (EL04) to cover the water supply and irrigation needs of EL08 (23.0 and 105.5 hm^3 respectively).

The total annual water abstractions for all activities and uses, per RB of the River Basin District of Thessalia (EL08) are presented below.

River Basin of Pineios (EL0816)

In the Acheloos River Basin the total estimated abstraction is 624,7 hm³, of which 496.2 hm³ are for covering the needs within the RB of Acheloos, while approximately 128.5 hm³ are abstracted annually from the Techniti Limni Tavropou to meet the irrigation and water supply needs of EL08. In terms of meeting needs within the RB of Acheloos, the largest part is intended for irrigation (469,6 hm³), a significant part for water supply (21,7 hm³), while the estimated abstraction for livestock (3,1 hm³) and industry (1,7 hm³) is much lower.

Table 5.4-1: Total abstractions per use in the Pineios river basin (EL0816)

Use	Abstraction from SWB (hm³)	Abstraction from GWB (hm³)	Total (hm³)
Abstraction for Irrigation for the areas irrigated in 2020	349,2	750,2	1099,4
Abstraction for water supply	4,0	53,0	57,1
Abstraction for Livestock	-	5,0	5,0
Abstraction for Industry	-	7,5	7,5

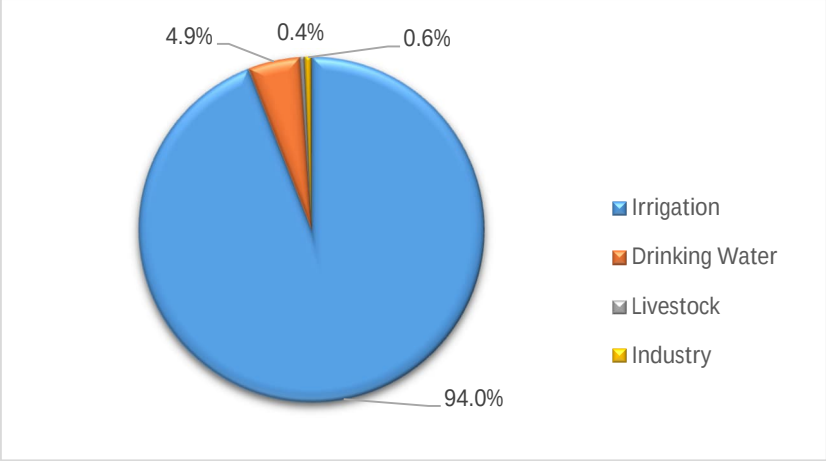


Figure 5.4-2: Distribution of annual water abstractions in the RB of Pineios (EL0816)

River Basin of Rematon Almyrou - Piliou (EL0817)

In the Rematon Almyrou - Piliou River Basin the total estimated abstraction is 102,1 hm³, of which the largest part is used for irrigation ((70,9 hm³), a significant part for water supply (26,5 hm³), while the estimated abstractions for livestock (0,5 hm³) and industry (4,3 hm³) are much lower.

Table 5.4-2: Total abstractions per use in the Rematon Almyrou - Piliou river basin (EL0817)

Use	Abstraction from SWB (hm³)	Abstraction from GWB (hm³)	Total (hm³)
Abstraction for Irrigation for the areas irrigated in 2020	3,2	67,7	70,9
Abstraction for water supply	1,1	25,4	26,5(*)
Abstraction for Livestock	-	0,5	0,5

Use	Abstraction from SWB (hm³)	Abstraction from GWB (hm³)	Total (hm³)
Abstraction for Industry	-	4,3	4,3

(*) Part of the water supply needs (ΔΕΥΑ Greater Volos Area) is provided from the River Basin of Pineios (Systima Karlas).

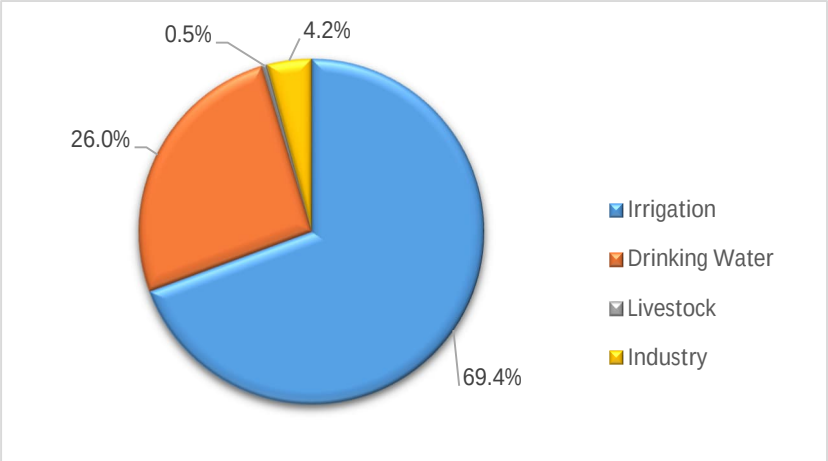


Figure 5.4-3: Distribution of annual water abstractions in the Rematon Almyrou - Piliou RB (EL0817)

5.5 Other pressures

Other pressures include briefly:

- **Run-off from extractive activities (mines, mining)**
  In the area of the River Basin District of Thessalia (EL08), nine (9) mining activities (quarries of industrial materials) and five (5) mines are recorded. These mining activity sites are shown to be associated with surface water bodies of Enipeus river, the Farsaliotis river, Kalentzis river, Titarisios river, Pineios river etc.
- **Desalination units**
  Three (3) desalination plants are located in the River Basin District of Thessalia (EL08), all in the Rematon Almyrou - Piliou RB (EL0817).
- **Ports - Marinas - Navigation**
  In the area of the River Basin District of Thessalia (EL08), there is one (1) port of International Interest, the port of Volos.
- **Artificial groundwater recharge**

  In the area of the RBD of Thessalia, no artificial enrichment has been implemented despite the fact that in several areas hydrogeological studies have been prepared that suggest its application. An indicative list is shown below of some of the areas where the possibility of applying artificial enrichment has been investigated or proposed for investigation:

• SYSTIMA FYLLIIOU-ORFANON (EL0800080). A study has been carried out by the Ministry of Agriculture and Forestry for the implementation of an artificial enrichment program from the waters of the river Enipeus.
• SYSTIMA KONOU TITARISIOU (EL0800220) and in the SYSTIMA DAMASIOU-TITANOU (EL0800070) The first phase of the study has been prepared by the former Prefecture of Larissa for the implementation of an artificial enrichment program with waters of the river Titarisios. There is a plan to conduct the second phase of the study.
• SYSTIMA NARTHAKIOU-VRYSION (EL0800180). A study has been carried out by the former Prefecture of Larissa for the implementation of an artificial enrichment program.
• SYSTIMA LARISSAS-KARLAS (EL0800110) A research project has been carried out by the former Prefecture of Larissa for the implementation of an artificial enrichment program in the area of Chalki of Platykampos and the karstic unit Myron - Kalou Nerou of the SYSTIMA TAOUSANIS-KALOU NEROU. It has been proposed to use waters of the KOUSMPASANIOTIKO R. and other smaller ones in the area.
• SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS (EL0800030). In the Sofaditis cone, the enhancement of the groundwater potential through artificial enrichment has been proposed by a study of the Ministry of Infrastructure, transport and Networks, following the preparation of a relevant study due to the intense quantitative degradation of the groundwater supply in the wider area of the Sofaditis cone.

- **Groundwater alteration of water level or groundwater quantity due to underground operations or the construction of large underground works.**
  There are no changes in groundwater levels and water quantity in the River Basin District of Thessalia due to underground exploitation or the construction of large underground works.

5.6 Pressure aggregates

From the individual pollution sources of point, diffuse and other types of anthropogenic pressures, the total final annual amounts of BOD_5, N and P pollutant loads generated in the study area are derived, as shown in the figure below.

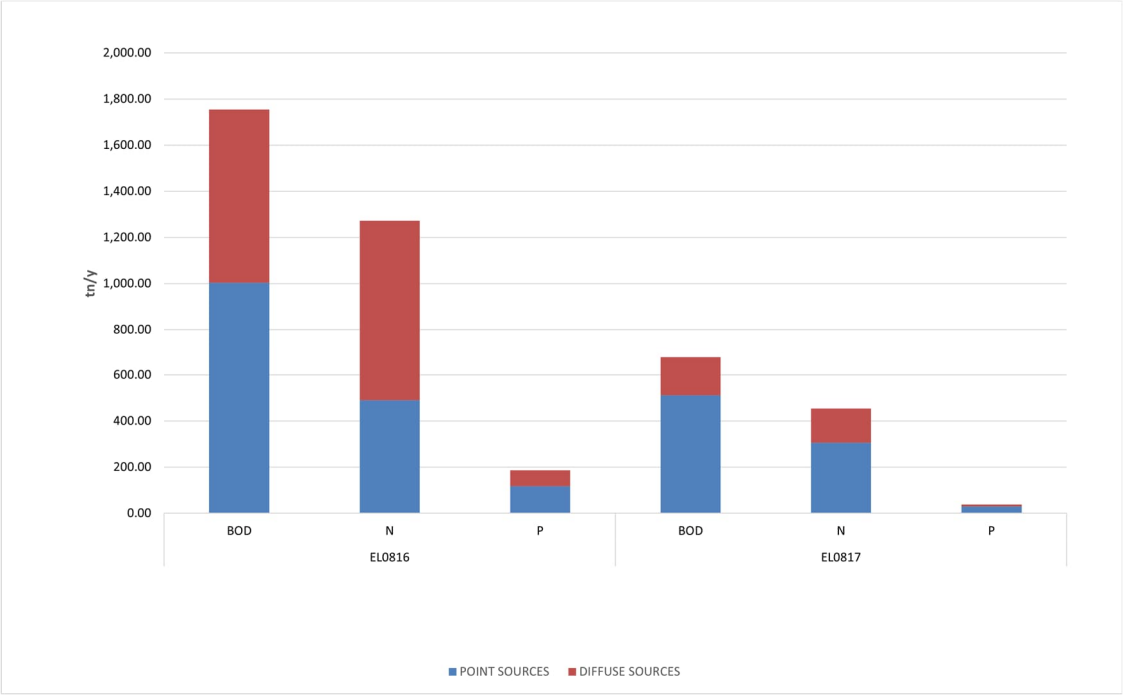


Figure 5.6-1: Total annual surface loads of BOD_5, N and P in river basins (EL0816) and (EL0817) from all sources of pollution

The total annual surface loads resulting from the sum of the individual diffuse, point and other anthropogenic pressures are presented below, per RB of the RBD of Thessalia (EL08).

Table 5.6-1: Total annual surface loads of BOD_5, N and P produced by all pollution sources in the Pineios RB (EL0816)

SOURCE OF POLLUTION	BOD_5 (tonnes/year)	N (tonnes/year)	P (tonnes/year)
DIFFUSE	750,39	782,58	69,15
POINT	1.003,54	489,75	116,95
TOTAL	**1.753,93**	**1.272,33**	**186,10**

Table 5.6-2: Total annual surface loads of BOD_5, N and P produced by all pollution sources in the Rematon Almyrou - Piliou RB (EL0817)

SOURCE OF POLLUTION	BOD_5 (tonnes/year)	N (tonnes/year)	P (tonnes/year)
DIFFUSE	164,56	148,43	8,74
POINT	511,93	305,71	29,13
TOTAL	**676,49**	**454,13**	**37,87**

5.7 Impact assessment

5.7.1 Assessment of the likelihood of achieving the environmental objectives of the Directive in surface water bodies

During the assessment of the impacts and the designation of the water bodies based on the likelihood of achieving the environmental objectives of the WFD, the following are assessed for each water body:

- Intensity of pressure from pollution sources and discharges: high (H), medium (M), low (L)
- The available data and the results of the monitoring program
- Expert judgement, when no data are available.

From the set of criteria, the water bodies of the River Basin District of Thessalia (EL08) were ranked according to whether or not they are likely to achieve the environmental objectives of Directive 2000/60/EC.

The diagram and tables below summarise the assessment of the achievement or non-achievement of the objectives of Directive 2000/60/EC per water body category and per RB.

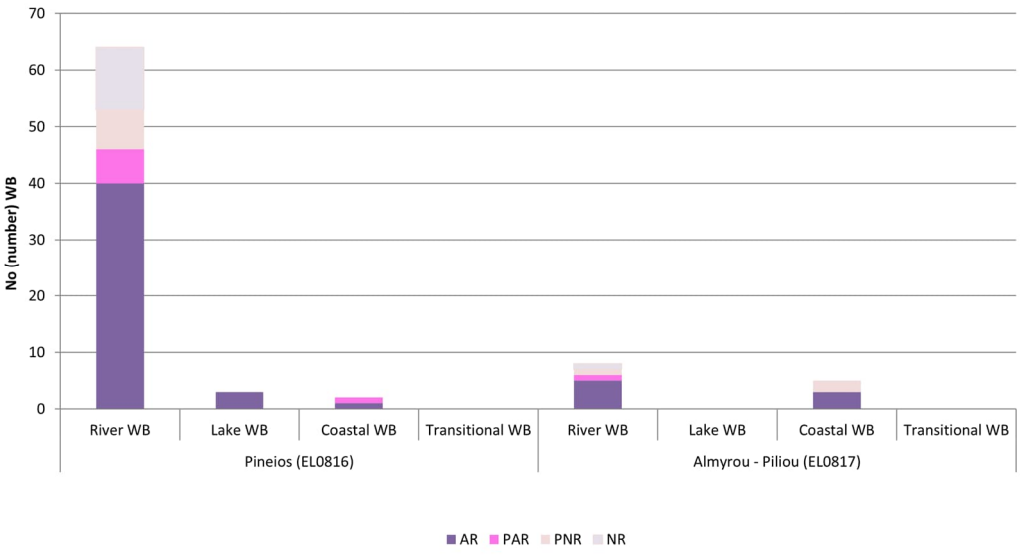


Figure 5.7-1: Assessment of the risk of not achieving the objectives of surface water bodies in River Basins (EL0816) and (EL0817).

Table 5.7-1: Overview of risk assessment of surface water bodies failing to achieve the objectives in the Pineios RB (EL0816) - Number of WB

Risk assessment categories*									
	NR		PNR		PAR		AR		Total
Type of WB	Number of WB	Percentage of number of WB (%)	Number of WB	Percentage of number of WB (%)	Number of WB	Percentage of number of WB (%)	Number of WB	Percentage of number of WB (%)	Number of WB
Rivers WB	11	17.2%	7	10.9%	6	9.4%	40	62.5%	64
Lakes WB	0	0.0%	0	0.0%	0	0.0%	3	100.0%	3
Coastal WB	0	0.0%	0	0.0%	1	50.0%	1	50.0%	2
Transitional WB	0		0		0		0		0
Total	**11**	**15.9%**	**7**	**10.1%**	**7**	**10.1%**	**44**	**63.8%**	**69**
**As regards the assessment of the risk of not achieving the objectives of WFD, the following categories can be distinguished: at risk (AR), probably at risk (PAR), probably not at risk (PNR), not at risk (NR)*									

Table 5.7-2: Overview of risk assessment of surface water bodies failing to achieve the objectives in the Rematon Almyrou - Piliou RB (EL0817) - Number of WB

Risk assessment categories*									
	NR		PNR		PAR		AR		Total
Type of WB	Number of WB	Percentage of number of WB (%)	Number of WB	Percentage of number of WB (%)	Number of WB	Percentage of number of WB (%)	Number of WB	Percentage of number of WB (%)	Number of WB
Rivers WB	1	12,5%	1	12,5%	1	12,5%	5	62,5%	8
Lakes WB	0		0		0		0		0
Coastal WB	0	0,0%	2	40,0%	0	0,0%	3	60,0%	5
Transitional WB	0		0		0		0		0
Total	**1**	**7,7%**	**3**	**23,1%**	**1**	**7,7%**	**8**	**61,5%**	**13**
**As regards the assessment of the risk of not achieving the objectives of WFD, the following categories can be distinguished: at risk (AR), probably at risk (PAR), probably not at risk (PNR), not at risk (NR)*									

5.7.2 Assessment of impacts on groundwater bodies

River Basin of Pineios (EL0816)

In the River Basin of Pineios, 28 groundwater bodies have been delineated, the status of which is given in the following table.

Of the groundwater bodies in the Pineios RB, 19 are in good quantitative status and 9 in bad quantitative status, 26 are in good qualitative status and 2 in bad qualitative status .

Table 5.7-3: Table of qualitative (chemical) and quantitative status of groundwater bodies in the Pineios RB (EL0816)

A/N	Code	Name	Quantitative status	Trend of water decline levels	Qualitative (chemical) status	Qualitative problems	Trend of pollutants
1	EL0800010	SYSTIMA KOZIAKA	Good	No	Good	Local exceedances of the limits for Fe	No
2	EL0800020	SYSTIMA PALIOSAMARINAS-VOULAS	Good	No	Good	Local exceedances of the limits for Fe, Mn	No
3	EL0800030	SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS	Bad	Yes	Bad	Locally high measurements of NO4.Cl and SO_4 Local exceedances of the limits for Fe, Mn	No
4	EL0800040	SYSTIMA SARANTAPOROU	Good	No	Good	No	No
5	EL0800050	SYSTIMA KRANIAS-ELASSONOS	Good	No	Good	No	No
6	EL0800060	SYSTIMA POTAMIAS	Good	No	Good	No	No
7	EL0800070	SYSTIMA DAMASIOU-TITANOU	Good	No	Good	Local exceedances of the limits for Fe, Mn	No
8	EL0800080	SYSTIMA FYLLIIOU-ORFANON	Bad	Yes	Good	Local exceedances of the limits for Fe, Mn, Cu	No
9	EL0800100	SYSTIMA EKKARAS-VELESIOTON	Bad	Yes	Good	No	No
10	EL0800110	SYSTIMA LARISSAS-KARLAS	Bad	Yes	Good	Local exceedances of the limits for Cl, conductivity and SO_4 due to natural background. Locally high measurements of NO_3. Local exceedances of the limits for Fe, Mn, As, Cr, Al	No
11	EL0800120	SYSTIMA OLYMPOU-OSSAS	Good	No	Good	No	No

A/N	Code	Name	Quantitative status	Trend of water decline levels	Qualitative (chemical) status	Qualitative problems	Trend of pollutants
12	EL0800130	SYSTIMA TAOUSANIS-KALOU NEROU	Bad	Yes	Bad	Locally high measurements of NO_3. Local exceedances of the limits for Fe	-
14	EL0800180	SYSTIMA NARTHAKIOU-VRYSION	Bad	Yes	Good	Local exceedances of the limits for Fe, Mn	No
14	EL0800190	SYSTIMA CHASION-ANTICHASION	Good	No	Good	No	No
15	EL0800200	SYSTIMA XYNIADOS	Bad	Yes	Good	Locally high measurements of NO_3. Local exceedances of the limits for Fe, Mn, Ni	No
16	EL0800210	SYSTIMA ELASSONAS-TSARITSANIS	Good	No	Good	No	No
17	EL0800220	SYSTIMA KONOU TITARISIOU	Bad	Yes	Good	Locally high measurements of NO_3. Local exceedances of the limits for Fe	No
18	EL0800230	SYSTIMA KONOU PINEIOU-PORTAIKOU-PAMISOU	Good	No	Good	Local exceedances of the limits for Fe, Mn	No
19	EL0800240	SYSTIMA YDROFORION CHASION-FARKADONAS	Good	No	Good	Local exceedances of the limits for Fe	No
20	EL0800250	SYSTIMA YDROFORION KATO OLYMPOU-SARANTAPOROU	Good	No	Good	Local exceedances of the limits for Fe, Cr	No
21	EL0800260	SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU	Bad	Yes	Good	No	No
22	EL0800271	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (A)	Good	No	Good	Locally elevated NO_3 values	No
23	EL0800272	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (B)	Good	No	Good	No	No

A/N	Code	Name	Quantitative status	Trend of water decline levels	Qualitative (chemical) status	Qualitative problems	Trend of pollutants
24	EL0800290	SYSTIMA YDROFORION ANO ROU ENIPEA	Good	No	Good	Locally high measurements of NO_3. Local exceedances of the limits for Fe	No
25	EL0800300	SYSTIMA YDROFORION XYNIADAS-KEDROU	Good	No	Good	Local exceedances of the limits for Fe, Mn	No
26	EL0800310	SYSTIMA YDROFORION ELATIS-RENTINAS	Good	No	Good	Local exceedances of the limits for Cu	No
27	EL0800320	SYSTIMA YDROFORION MALAKASIOTIKOU REMATOS	Good	No	Good	No	No
28	EL0800330	SYSTIMA EKBOLON PINEIOU	Good	No	Good	Local exceedances of the limits for NH_4, Cl and conductivity due to natural background. Local exceedances of the limits for Ni, Cr.	No

River Basin of Rematon Almyrou - Piliou (EL0817)

In the River Basin of Rematon Almyrou - Piliou, 6 groundwater bodies have been delineated, the status of which is given in the following table.

The groundwater bodies of the Rematon Almyrou – Piliou RB are in good qualitative and quantitative status except for the SYSTIMA ALMYROU (EL0800140) which is in bad qualitative and quantitative status

Table 5.7-4: Table of qualitative (chemical) and quantitative status of groundwater bodies in the Rematon Almyrou - Piliou RB (EL0817)

No	Code	Name	Quantitative status	Trend of water decline levels	Qualitative (chemical) status	Qualitative problems	Trend of pollutants
1	EL0800090	LOFODES SYSTIMA ALMYROU-VELESTINOU	Good	No	Good	No	No
2	EL0800140	SYSTIMA ALMYROU	Bad	No	Bad	Locally high measurements of NO_3 and Cl. Local exceedances of the limits for Fe, Mn	Local
3	EL0800150	SYSTIMA MAVROVOUNIOU-KARLAS	Good	No	Good	Locally high measurements of Cl due to natural background. Local exceedances of the limits for Fe, Mn.	No
4	EL0800160	SYSTIMA ORTHRYOS	Good	No	Good	Locally high measurements of Cl and conductivity due to natural background.	No
5	EL0800170	SYSTIMATA PILIOU	Good	No	Good	No	No
6	EL0800280	SYSTIMA YDROFORION N ANCHIALOU-N IONIAS	Good	No	Good	No	No

6 STATUS OF WATER BODIES

6.1 Classification of the status of surface water bodies

The Tables and Maps below present the results of the classification of the ecological and chemical status of the surface water bodies of the River Basin District of Thessalia (EL08) per RB, as assessed during the 2nd Update of the RBMP. In addition, the tables present the differentiations in the ecological and chemical status of the SWB compared to the previous RBMPs, as well as the classification method.

Table 6.1-1: Status assessment of river water bodies per RB in the River Basin District of Thessalia (EL08) in comparison to previous RBMPs

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
RIVER BASIN OF PINEIOS (EL0816)															
1	EL0816R000000062A	1T	UNKNOWN	FAILING TO ACHIEVE GOOD	UNKNOWN	POOR	MP	UNKNOWN	-	UNKNOWN	POOR	MP	GOOD	GR	POOR
2	EL0816R000000064A	7T	UNKNOWN	UNKNOWN	UNKNOWN	POOR	MP	GOOD	MP	POOR	POOR	MP	GOOD	MP	POOR
3	EL0816R000000163N	AMYROS P.	POOR	UNKNOWN	POOR	GOOD	GR	GOOD	GR	GOOD	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
4	EL0816R000101001N	ZILIANA P.	MODERATE	GOOD	MODERATE	GOOD	MP	FAILING TO ACHIEVE GOOD	MP	MODERATE	GOOD	MP	GOOD	MP	GOOD
5	EL0816R000200003N	PINEIOS P. 2	MODERATE	UNKNOWN	MODERATE	GOOD	MP	GOOD	MP	GOOD	MODERATE	GR	GOOD	GR	MODERATE
6	EL0816R000200004N	PINEIOS P. 3	POOR	UNKNOWN	POOR	POOR	MP	GOOD	MP	POOR	BAD	MP	GOOD	MP	BAD
7	EL0816R000200005N	PINEIOS P. 4	POOR	GOOD	POOR	POOR	MP	GOOD	GR	POOR	POOR	MP	GOOD	MP	POOR

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
8	EL0816R000200015H	PINEIOS P. 5*	POOR	GOOD	POOR	POOR	MP	UNKNOWN	-	UNKNOWN	LOWER THAN GOOD	MM	GOOD	MP	LOWER THAN GOOD
9	EL0816R000200016A	PINEIOS P. 7	GOOD	UNKNOWN	UNKNOWN	POOR	MP	GOOD	MP	POOR	POOR	EJ	GOOD	EJ	POOR
10	EL0816R000200017H	PINEIOS P. 6	POOR	UNKNOWN	POOR	UNKNOWN	-	GOOD	GR	UNKNOWN	LOWER THAN GOOD	MM	GOOD	GR	LOWER THAN GOOD
11	EL0816R000200020N	PINEIOS P. 8	MODERATE	UNKNOWN	MODERATE	MODERATE	MP	GOOD	GR	MODERATE	POOR	MP	GOOD	MP	POOR
12	EL0816R000200021N	PINEIOS P. 9	POOR	GOOD	POOR	GOOD	GR	GOOD	GR	GOOD	MODERATE	GR	GOOD	GR	MODERATE
13	EL0816R000200022N	PINEIOS P. 10	MODERATE	GOOD	MODERATE	MODERATE	MP	GOOD	MP	MODERATE	POOR	MP	GOOD	MP	POOR
14	EL0816R000200039N	PINEIOS P. 11	POOR	FAILING TO ACHIEVE GOOD	POOR	POOR	MP	GOOD	GR	POOR	POOR	MP	FAILING TO ACHIEVE GOOD	MP	POOR
15	EL0816R000200053N	PINEIOS P. 12	MODERATE	GOOD	MODERATE	MODERATE	MP	FAILING TO ACHIEVE GOOD	MP	MODERATE	GOOD	MP	FAILING TO ACHIEVE GOOD	MP	MODERATE

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
16	EL0816R000200056N	ION P. 1	MODERATE	UNKNOWN	MODERATE	GOOD	GR	GOOD	GR	GOOD	MODERATE	GR	GOOD	GR	MODERATE
17	EL0816R000200060N	ION P. 2	UNKNOWN	GOOD	UNKNOWN	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
18	EL0816R000201002N	PINEIOS P. 1	POOR	FAILING TO ACHIEVE GOOD	POOR	GOOD	MP	GOOD	MP	GOOD	BAD	MP	GOOD	MP	BAD
19	EL0816R000202006N	TITARISIOS P. 1	POOR	GOOD	POOR	POOR	MP	GOOD	MP	POOR	POOR	MP	GOOD	MP	POOR
20	EL0816R000202007N	TITARISIOS P. 2	POOR	UNKNOWN	POOR	MODERATE	MP	GOOD	MP	MODERATE	MODERATE	MP	GOOD	MP	MODERATE
21	EL0816R000202013N	TITARISIOS P. 3	POOR	UNKNOWN	POOR	GOOD	GR	UNKNOWN	-	UNKNOWN	MODERATE	GR	GOOD	GR	MODERATE
22	EL0816R000202014N	TITARISIOS P. 4	GOOD	UNKNOWN	UNKNOWN	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
23	EL0816R000202108N	SMOLIOTIKO R.	GOOD	GOOD	GOOD	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
24	EL0816R000202209N	KARKATSELI R.	GOOD	UNKNOWN	UNKNOWN	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
25	EL0816R000202310N	ELASSONITIKOS P.	MODERATE	GOOD	MODERATE	BAD	MP	UNKNOWN	-	UNKNOWN	BAD	MP	GOOD	MP	BAD
26	EL0816R000202411N	XERIAS R.	GOOD	UNKNOWN	UNKNOWN	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
27	EL0816R000202512N	TITARISIOS P. - PARAPOTAMOS LIANOPOTAMOS	POOR	UNKNOWN	POOR	GOOD	GR	GOOD	GR	GOOD	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
28	EL0816R000204018H	KOUSMPASANIOTIKO R. 1	UNKNOWN	UNKNOWN	UNKNOWN	MODERATE	MP	UNKNOWN	-	UNKNOWN	LOWER THAN GOOD	MM	FAILING TO ACHIEVE GOOD	EJ	LOWER THAN GOOD
29	EL0816R000204019N	KOUSMPASANIOTIKO R. 2	POOR	UNKNOWN	POOR	GOOD	MP	GOOD	GR	GOOD	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
30	EL0816R000206023H	ENIPEUS P. 1*	POOR	GOOD	POOR	MODERATE	MP	GOOD	MP	MODERATE	LOWER THAN GOOD	MM	GOOD	MP	LOWER THAN GOOD
31	EL0816R000206036N	ENIPEUS P. 2	POOR	UNKNOWN	POOR	GOOD	GR	GOOD	GR	GOOD	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
32	EL0816R000206037N	ENIPEUS P. 3	POOR	UNKNOWN	POOR	POOR	MP	UNKNOWN	-	UNKNOWN	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
33	EL0816R000206038N	ENIPEUS P. 4	MODERATE	UNKNOWN	MODERATE	MODERATE	MP	GOOD	MP	MODERATE	GOOD	MP	GOOD	MP	GOOD
34	EL0816R000206124H	KALENTZIS P. 1*	POOR	GOOD	POOR	BAD	MP	UNKNOWN	-	UNKNOWN	LOWER THAN GOOD	MM	FAILING TO ACHIEVE GOOD	EJ	LOWER THAN GOOD
35	EL0816R000206125N	KALENTZIS P. 2	POOR	FAILING TO ACHIEVE GOOD	POOR	MODERATE	MP	UNKNOWN	-	UNKNOWN	MODERATE	MP	GOOD	MP	MODERATE
36	EL0816R00020206226N	SOFADITIS P. 1	POOR	UNKNOWN	POOR	POOR	MP	GOOD	MP	POOR	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
37	EL0816R000206227H	FARSALIOTIS P. 1*	POOR	UNKNOWN	POOR	GOOD	GR	GOOD	GR	GOOD	LOWER THAN GOOD	MM	GOOD	GR	LOWER THAN GOOD
38	EL0816R000206228N	MAKRYREMMA	POOR	UNKNOWN	POOR	POOR	MP	GOOD	MP	POOR	POOR	MP	FAILING TO ACHIEVE GOOD	MP	POOR
39	EL0816R000206229H	FARSALIOTIS P. 2*	POOR	UNKNOWN	POOR	BAD	MP	GOOD	GR	BAD	LOWER THAN GOOD	MM	FAILING TO ACHIEVE GOOD	MP	LOWER THAN GOOD

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
40	EL0816R000206230N	SOFADITIS P. 2	UNKNOWN	UNKNOWN	UNKNOWN	MODERATE	GR	GOOD	GR	MODERATE	MODERATE	GR	GOOD	GR	MODERATE
41	EL0816R000206231H	SOFADITIS P. 3	POOR	GOOD	POOR	UNKNOWN	-	UNKNOWN	-	UNKNOWN	LOWER THAN GOOD	MM	FAILING TO ACHIEVE GOOD	EJ	LOWER THAN GOOD
42	EL0816R000206232N	SMOKOVITIKO R.	MODERATE	GOOD	MODERATE	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
43	EL0816R000206233N	TSATSORREMA	MODERATE	GOOD	MODERATE	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
44	EL0816R000206234N	PAPOUSA R.	MODERATE	GOOD	MODERATE	MODERATE	GR	GOOD	GR	MODERATE	GOOD	GR	GOOD	GR	GOOD
45	EL0816R000206235A	TAFROS XYNIADAS	GOOD	UNKNOWN	UNKNOWN	MODERATE	MP	FAILING TO ACHIEVE GOOD	MP	MODERATE	MODERATE	MP	FAILING TO ACHIEVE GOOD	MP	MODERATE
46	EL0816R000208040N	MEGA REMA 1	POOR	UNKNOWN	POOR	POOR	MP	GOOD	GR	POOR	POOR	MP	GOOD	MP	POOR
47	EL0816R000208041N	MEGA REMA 2	POOR	UNKNOWN	POOR	MODERATE	GR	GOOD	GR	MODERATE	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
48	EL0816R000210042N	LITHAIOS P. 1	MODERATE	UNKNOWN	MODERATE	POOR	MP	FAILING TO ACHIEVE GOOD	MP	POOR	BAD	MP	FAILING TO ACHIEVE GOOD	MP	BAD
49	EL0816R000210045H	LITHAIOS P. 2	POOR	GOOD	POOR	POOR	MP	UNKNOWN	-	UNKNOWN	LOWER THAN GOOD	MM	FAILING TO ACHIEVE GOOD	EJ	LOWER THAN GOOD
50	EL0816R000210046N	LITHAIOS P. 3	POOR	UNKNOWN	POOR	BAD	MP	GOOD	GR	BAD	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
51	EL0816R000210047N	LITHAIOS P. 4	MODERATE	FAILING TO ACHIEVE GOOD	MODERATE	GOOD	MP	GOOD	GR	GOOD	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
52	EL0816R000210143N	NEOCHORITIS P.	POOR	UNKNOWN	POOR	POOR	MP	GOOD	MP	POOR	POOR	MP	GOOD	MP	POOR
53	EL0816R000210144N	NEOCHORITIS P. - PARAPOTAMOS	GOOD	GOOD	GOOD	MODERATE	MP	GOOD	GR	MODERATE	MODERATE	MP	GOOD	GR	MODERATE
54	EL0816R000212048N	PAMISOS P. 1	POOR	UNKNOWN	POOR	POOR	MP	GOOD	MP	POOR	POOR	MP	GOOD	MP	POOR
55	EL0816R000212049N	PAMISOS P. 2	GOOD	UNKNOWN	UNKNOWN	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
56	EL0816R000214050N	DYTIKI KOITI TRIKALON	POOR	GOOD	POOR	POOR	MP	GOOD	MP	POOR	POOR	MP	FAILING TO ACHIEVE GOOD	MP	POOR
57	EL0816R000216051N	PORTAIKOS P. 1	POOR	UNKNOWN	POOR	POOR	MP	GOOD	MP	POOR	MODERATE	MP	FAILING TO ACHIEVE GOOD	MP	MODERATE
58	EL0816R000216052N	PORTAIKOS P. 2	GOOD	UNKNOWN	UNKNOWN	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
59	EL0816R000218054N	MALAKASIOTIKO R.	GOOD	GOOD	GOOD	GOOD	MP	GOOD	MP	GOOD	MODERATE	GR	GOOD	GR	MODERATE
60	EL0816R000218155N	KLEINOVITIKOS P.	GOOD	GOOD	GOOD	MODERATE	MP	GOOD	GR	MODERATE	MODERATE	GR	GOOD	GR	MODERATE
61	EL0816R000220057N	TRANO POTAMI	MODERATE	GOOD	MODERATE	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	EJ	GOOD
62	EL0816R000222058N	GKREMOS R.	GOOD	UNKNOWN	UNKNOWN	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
63	EL0816R000224059N	XIROPOTAMOS	GOOD	GOOD	GOOD	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
64	EL0816R000301061N	DERMPINAS R.	MODERATE	GOOD	MODERATE	GOOD	GR	GOOD	GR	GOOD	MODERATE	GR	GOOD	GR	MODERATE
RIVER BASIN OF REMATON ALMYROU-PILIOU (EL0817)															
65	EL0817R000101065N	XIROLAKKAS R.	MODERATE	GOOD	MODERATE	GOOD	GR	GOOD	GR	GOOD	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
66	EL0817R000301066N	POURI R.	MODERATE	GOOD	MODERATE	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
67	EL0817R000501067N	RAKOPOTAMO	MODERATE	GOOD	MODERATE	GOOD	GR	GOOD	GR	GOOD	GOOD	GR	GOOD	GR	GOOD
68	EL0817R000701068N	LACHANORREMA	UNKNOWN	UNKNOWN	UNKNOWN	GOOD	MP	GOOD	GR	GOOD	MODERATE	GR	GOOD	GR	MODERATE
69	EL0817R000901069N	CHOLOREMMA	UNKNOWN	UNKNOWN	UNKNOWN	POOR	MP	GOOD	GR	POOR	POOR	MP	GOOD	MP	POOR
70	EL0817R001101070N	XERIAS ALMYROU R.	UNKNOWN	UNKNOWN	UNKNOWN	MODERATE	MP	UNKNOWN	-	UNKNOWN	POOR	MP	FAILING TO ACHIEVE GOOD	MP	POOR
71	EL0817R001301071N	PLATANOREMMA R.	UNKNOWN	UNKNOWN	UNKNOWN	POOR	MP	GOOD	GR	POOR	MODERATE	EJ	GOOD	MP	MODERATE

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLOGICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
72	EL0817R001501072N	XIROREMMA R.	UNKNOWN	UNKNOWN	UNKNOWN	MODERATE	GR	UNKNOWN	-	UNKNOWN	MODERATE	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE

** Differences in the coding of river water bodies compared to the 1st Update of the RBMP, due to the change in the classification of water bodies from Natural to ITYS and vice versa*

(MP): Classification based on monitoring program

(GR): Classification based on grouping

(EJ): Classification based on expert judgement

(MM): Classification based on mitigation measures methodology (Prague approach).

Table 6.1-2: Status assessment of lake water bodies per RB in the River Basin District of Thessalia (EL08) in comparison to previous RBMPs

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLO-GICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLO-GICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
RIVER BASIN OF PINEIOS (EL0816)															
1	EL0816L000000001H	TECHNITI LIMNI ARGYROPOULIOU	METRIA	GOOD	MODERATE	UNKNOWN	-	UNKNOWN	-	UNKNOWN	LOWER THAN GOOD	MM	GOOD	EJ	LOWER THAN GOOD
2	EL0816L000000002H	TECHNITI LIMNI KARLAS	UNKNOWN	UNKNOWN	UNKNOWN	BAD	MP	UNKNOWN	-	UNKNOWN	LOWER THAN GOOD	MM	GOOD	MP	LOWER THAN GOOD

(MP): Classification based on monitoring program

(GR): Classification based on grouping

(EJ): Classification based on expert judgement

(MM): Classification based on mitigation measures methodology (Prague approach).

Table 6.1-3: Status assessment of reservoirs per RB in the River Basin District of Thesalia (EL08) in comparison to previous RBMPs

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLO-GICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLO-GICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
RIVER BASIN OF PINEIOS (EL0816)															
1	EL0816RL00206201H	TECHNITI LIMNI SMOKOVOU	UNKNOWN	UNKNOWN	UNKNOWN	GOOD	MP	GOOD	MP	GOOD	GOOD AND SUPERIOR	MP	FAILING TO ACHIEVE GOOD	MP	LOWER THAN GOOD

(MP): Classification based on monitoring program

(GR): Classification based on grouping

(EJ): Classification based on expert judgement

(MM): Classification based on mitigation measures methodology (Prague approach).

Table 6.1-4: Status assessment of coastal water bodies per RB in the River Basin District of Thessalia (EL08) in comparison to previous RBMPs

No	WB CODE - 2nd UPDATE OF RBMP	NAME OF WB	1st RBMP			1st UPDATE OF RBMP					2nd UPDATE OF RBMP				
			ECOLO-GICAL STATUS/ POTENTIAL	CHEMI-CAL STATUS	TOTAL STATUS	ECOLO-GICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS	ECOLO-GICAL STATUS/ POTENTIAL	CLASSI-FICATION METHOD	CHEMI-CAL STATUS	CLASSI-FICATION METHOD	TOTAL STATUS
RIVER BASIN OF PINEIOS (EL0816)															
1	EL0816C0001N	VOREIO TMIMA AKTON THESSALIAS	HIGH	UNKNOWN	UNKNOWN	HIGH	GR	UNKNOWN	-	UNKNOWN	GOOD	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
2	EL0816C0002N	KENTRIKO TMIMA AKTON THESSALIAS (DELTA PINEIOU)	HIGH	UNKNOWN	UNKNOWN	HIGH	GR	UNKNOWN	-	UNKNOWN	GOOD	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
RIVER BASIN OF REMATON ALMYROU-PILIOU (EL0817)															
3	EL0817C0003N	NOTIO TMIMA AKTON THESSALIAS	HIGH	UNKNOWN	UNKNOWN	HIGH	GR	UNKNOWN	-	UNKNOWN	GOOD	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
4	EL0817C0004N	THALASSA PILIOU	HIGH	UNKNOWN	UNKNOWN	HIGH	GR	UNKNOWN	-	UNKNOWN	GOOD	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
5	EL0817C0005N	STENA SKIATHOU	HIGH	UNKNOWN	UNKNOWN	HIGH	GR	UNKNOWN	-	UNKNOWN	GOOD	GR	FAILING TO ACHIEVE GOOD	EJ	MODERATE
6	EL0817C0006N	PAGASSITKOS KOLPOS	MODERATE	FAILING TO ACHIEVE GOOD	MODERATE	GOOD	MP	GOOD	MP	GOOD	GOOD	MP	GOOD	MP	GOOD
7	EL0817C0007N	ORMOS VOLOU*	MODERATE	FAILING TO ACHIEVE GOOD	MODERATE	GOOD	MP	GOOD	MP	GOOD	GOOD	MP	GOOD	MP	GOOD

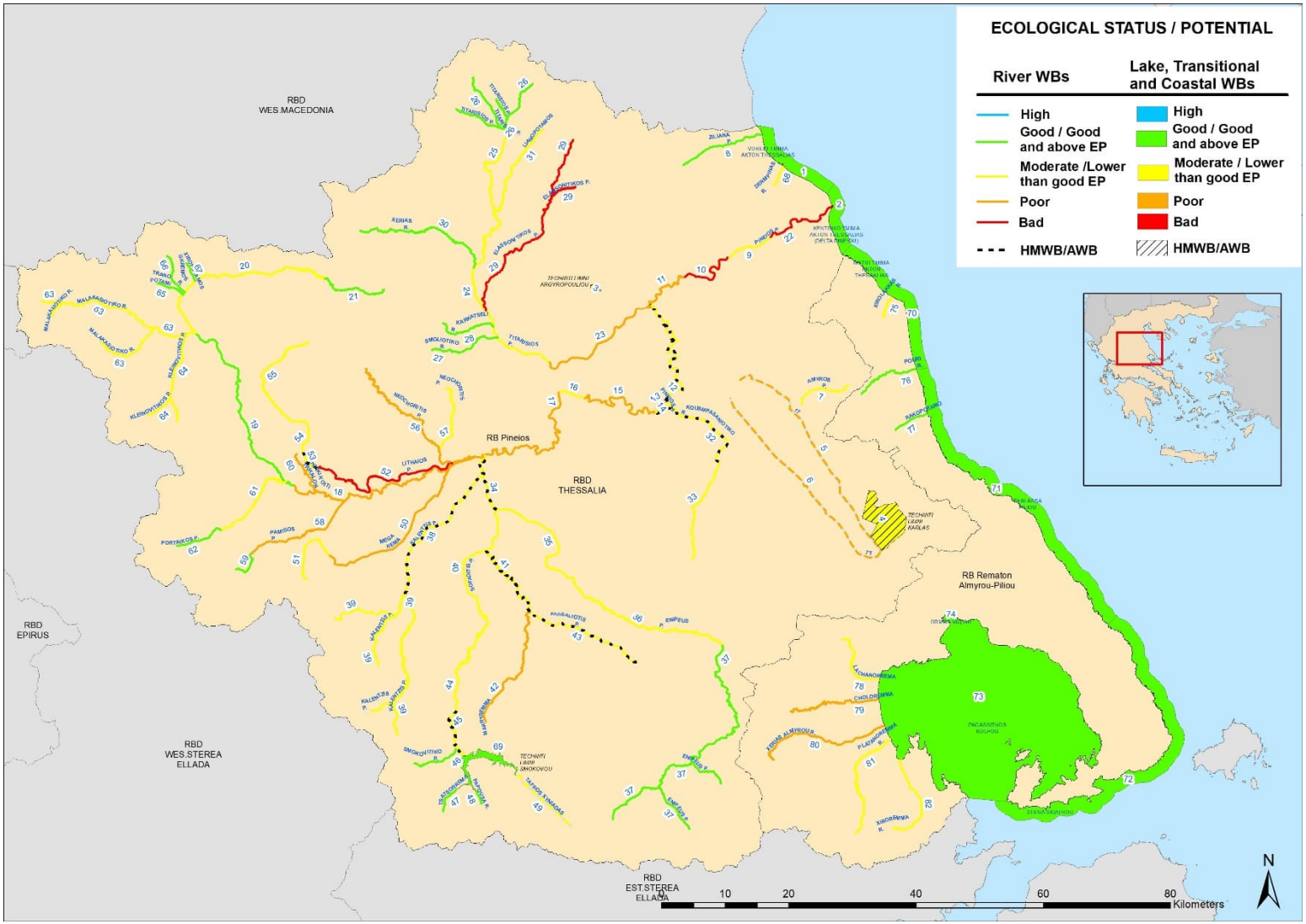
** Differences in the coding of river water bodies compared to the 1st revision of the SDLAP, due to the change in the classification of water bodies from Natural to ITYS and vice versa*

(MP): Classification based on monitoring program

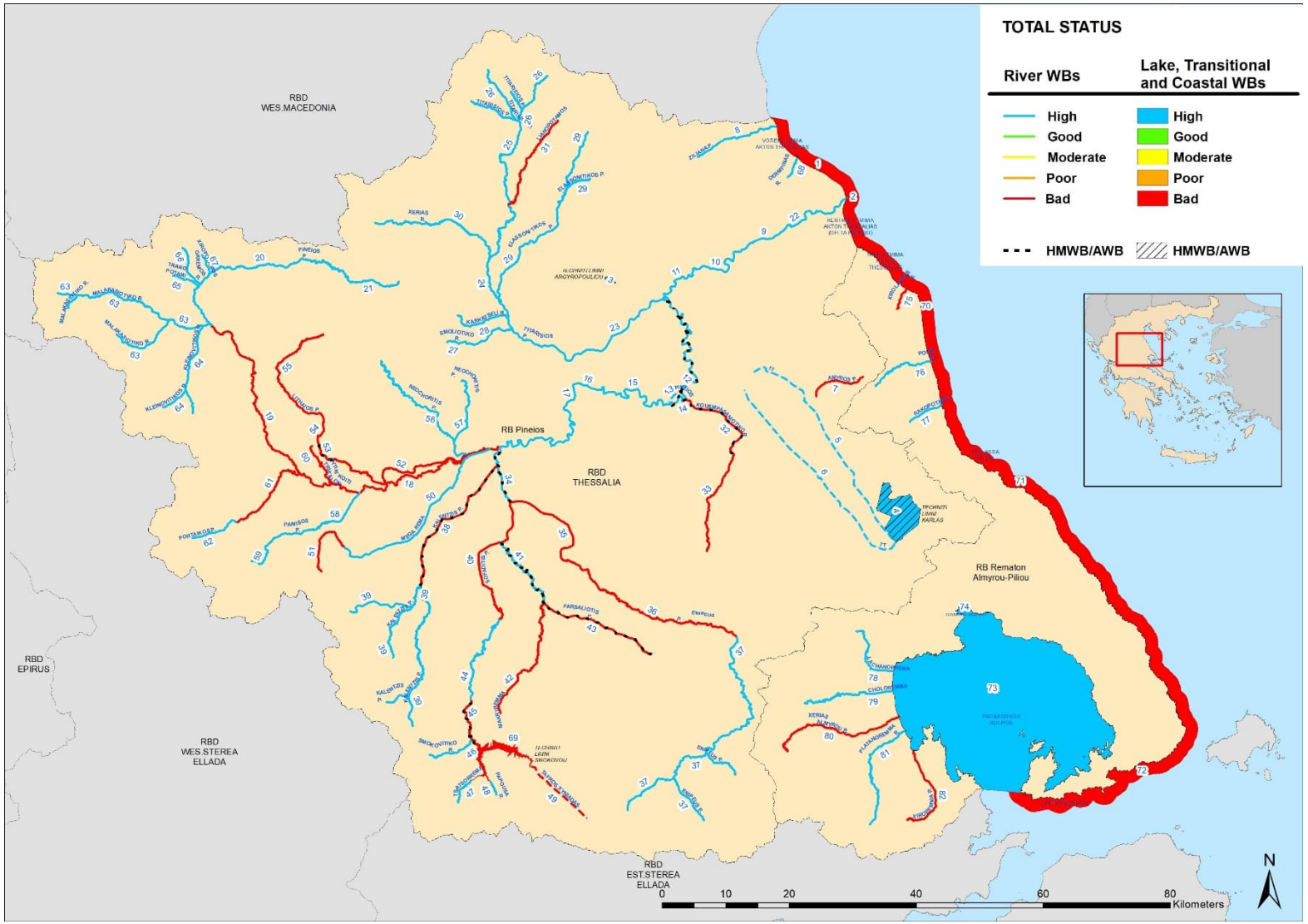
(GR): Classification based on grouping

(EJ): Classification based on expert judgement

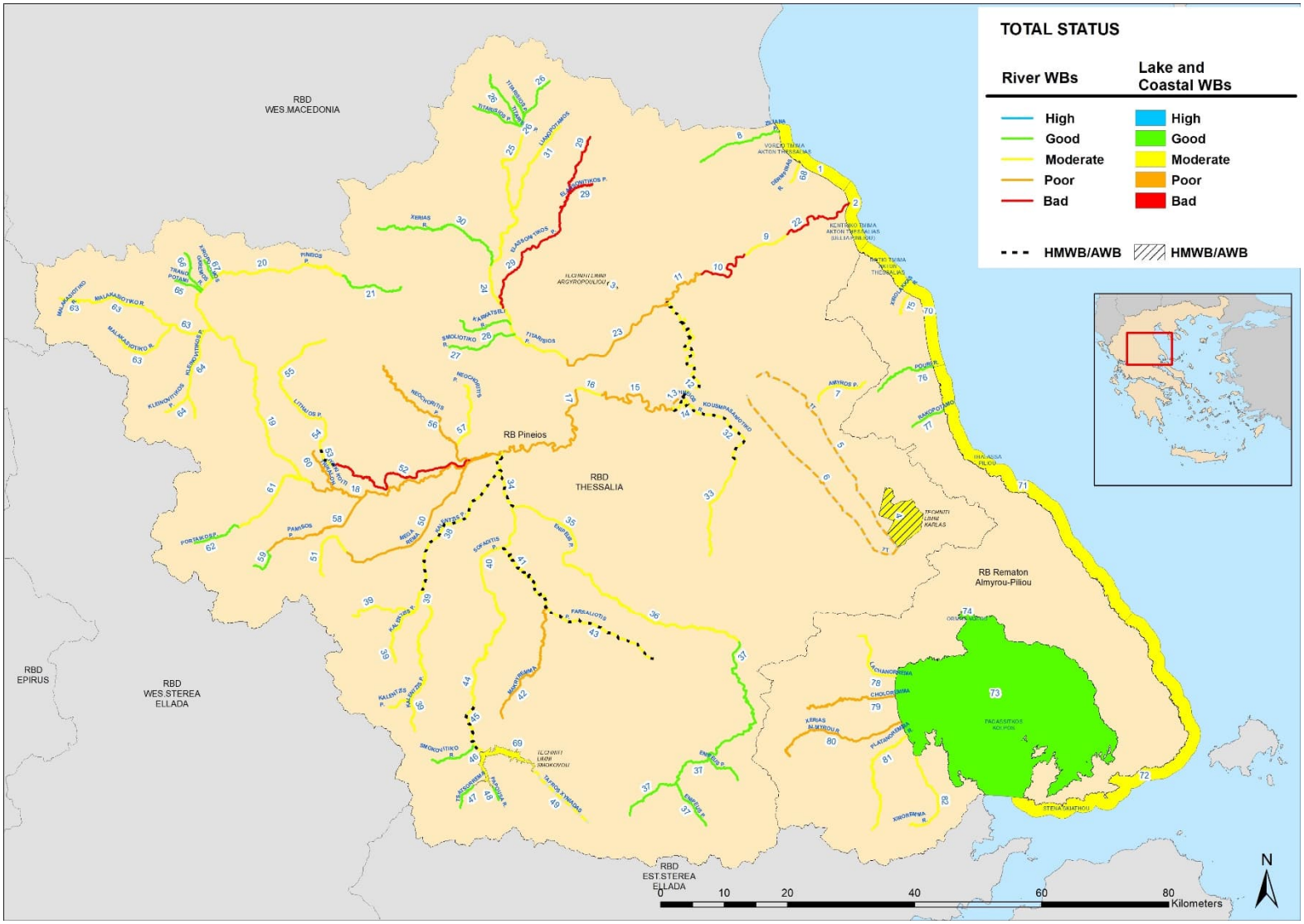
(MM): Classification based on mitigation measures methodology (Prague approach



Map 6.1-1: Ecological status of surface water bodies in the River Basin District of Thessalia (EL08)



Map 6.1-2: Chemical status of surface water bodies in the River Basin District of Thessalia (EL08)



Map 6.1-3: Total status of surface water bodies in the River Basin District of Thessalia (EL08)

Map Legend: 6.1-1/2/3:

WB Index	WB CODE.	NAME OF WB	WB Index	WB CODE.	NAME OF WB	WB Index	WB CODE.	NAME OF WB	WB Index	WB CODE.	NAME OF WB
1	EL0816C0001N	VOREIO TMIMA AKTON THESSALIAS	22	EL0816R000201002N	PINEIOS P. 1	43	EL0816R000206229H	FARSALIOTIS P. 2	64	EL0816R000218155N	KLEINOVITIKOS P.
2	EL0816C0002N	KENTRIKO TMIMA AKTON THESSALIAS (DELTA PINEIOU)	23	EL0816R000202006N	TITARISIOS P. 1	44	EL0816R000206230N	SOFADITIS P. 2	65	EL0816R000220057N	TRANO POTAMI
3	EL0816L000000001H	TECHNITI LIMNI ARGYROPOULIOU	24	EL0816R000202007N	TITARISIOS P. 2	45	EL0816R000206231H	SOFADITIS P. 3	66	EL0816R000222058N	GKREMOS R.
4	EL0816L000000002H	TECHNITI LIMNI KARLAS	25	EL0816R000202013N	TITARISIOS P. 3	46	EL0816R000206232N	SMOKOVITIKO R.	67	EL0816R000224059N	XIROPOTAMOS
5	EL0816R000000062A	1T	26	EL0816R000202014N	TITARISIOS P. 4	47	EL0816R000206233N	TSATSORREMA	68	EL0816R000301061N	DERMPINAS R.
6	EL0816R000000064A	7T	27	EL0816R000202108N	SMOLIOTIKO R.	48	EL0816R000206234N	PAPOUSA R.	69	EL0816RL00206201H	TECHNITI LIMNI SMOKOVOU
7	EL0816R000000163N	AMYROS P.	28	EL0816R000202209N	KARKATSELI R.	49	EL0816R000206235A	TAFROS XYNIADAS	70	EL0817C0003N	NOTIO TMIMA AKTON THESSALIAS
8	EL0816R000101001N	ZILIANA P.	29	EL0816R000202310N	ELASSONITIKOS P.	50	EL0816R000208040N	MEGA REMA 1	71	EL0817C0004N	THALASSA PILIOU
9	EL0816R000200003N	PINEIOS P. 2	30	EL0816R000202411N	XERIAS R.	51	EL0816R000208041N	MEGA REMA 2	72	EL0817C0005N	STENA SKIATHOU

10	EL0816R000200004N	PINEIOS P. 3	31	EL0816R000202512N	TITARISIOS P. - PARAPOTAMOS LIANOPOTAMOS	52	EL0816R000210042N	LITHAIOS P. 1	73	EL0817C0006N	PAGASSITKOS KOLPOS
11	EL0816R000200005N	PINEIOS P. 4	32	EL0816R000204018H	KOUSMPASANIO TIKO R. 1	53	EL0816R000210045H	LITHAIOS P. 2	74	EL0817C0007N	ORMOS VOLOU
12	EL0816R000200015H	PINEIOS P. 5	33	EL0816R000204019N	KOUSMPASANIO TIKO R. 2	54	EL0816R000210046N	LITHAIOS P. 3	75	EL0817R000101065N	XIROLAKKAS R.
13	EL0816R000200016A	PINEIOS P. 7	34	EL0816R000206023H	ENIPEUS P. 1	55	EL0816R000210047N	LITHAIOS P. 4	76	EL0817R000301066N	POURI R.
14	EL0816R000200017H	PINEIOS P. 6	35	EL0816R000206036N	ENIPEUS P. 2	56	EL0816R000210143N	NEOCHORITIS P.	77	EL0817R000501067N	RAKOPOTAMO
15	EL0816R000200020N	PINEIOS P. 8	36	EL0816R000206037N	ENIPEUS P. 3	57	EL0816R000210144N	NEOCHORITIS P. - PARAPOTAMOS	78	EL0817R000701068N	LACHANORREMA
16	EL0816R000200021N	PINEIOS P. 9	37	EL0816R000206038N	ENIPEUS P. 4	58	EL0816R000212048N	PAMISOS P. 1	79	EL0817R000901069N	CHOLOREMMA
17	EL0816R000200022N	PINEIOS P. 10	38	EL0816R000206124H	KALENTZIS P. 1	59	EL0816R000212049N	PAMISOS P. 2	80	EL0817R001101070N	XERIAS ALMYROU R.
18	EL0816R000200039N	PINEIOS P. 11	39	EL0816R000206125N	KALENTZIS P. 2	60	EL0816R000214050N	DYTIKI KOITI TRIKALON	81	EL0817R001301071N	PLATANOREMMA R.
19	EL0816R000200053N	PINEIOS P. 12	40	EL0816R000206226N	SOFADITIS P. 1	61	EL0816R000216051N	PORTAIKOS P. 1	82	EL0817R001501072N	XIROREMMA R.
20	EL0816R000200056N	ION P. 1	41	EL0816R000206227H	FARSALIOTIS P. 1	62	EL0816R000216052N	PORTAIKOS P. 2			
21	EL0816R000200060N	ION P. 2	42	EL0816R000206228N	MAKRYREMMA	63	EL0816R000218054N	MALAKASIOTIKO R.			

6.2 Classification of the status of groundwater bodies

The Table and the following maps present the qualitative and quantitative status of the groundwater bodies of the River Basin District of Thessalia (EL08) as they emerged during the 2nd Update of the RBMP per RB. In addition, the table shows the differentiations in the quantitative and qualitative (chemical) status of the GWB compared to the previous RBMPs.

Table 6.2-1: Results of the assessment of the status of groundwater bodies per RB in the River Basin District of Thessalia (EL08) in comparison to previous RBMPs

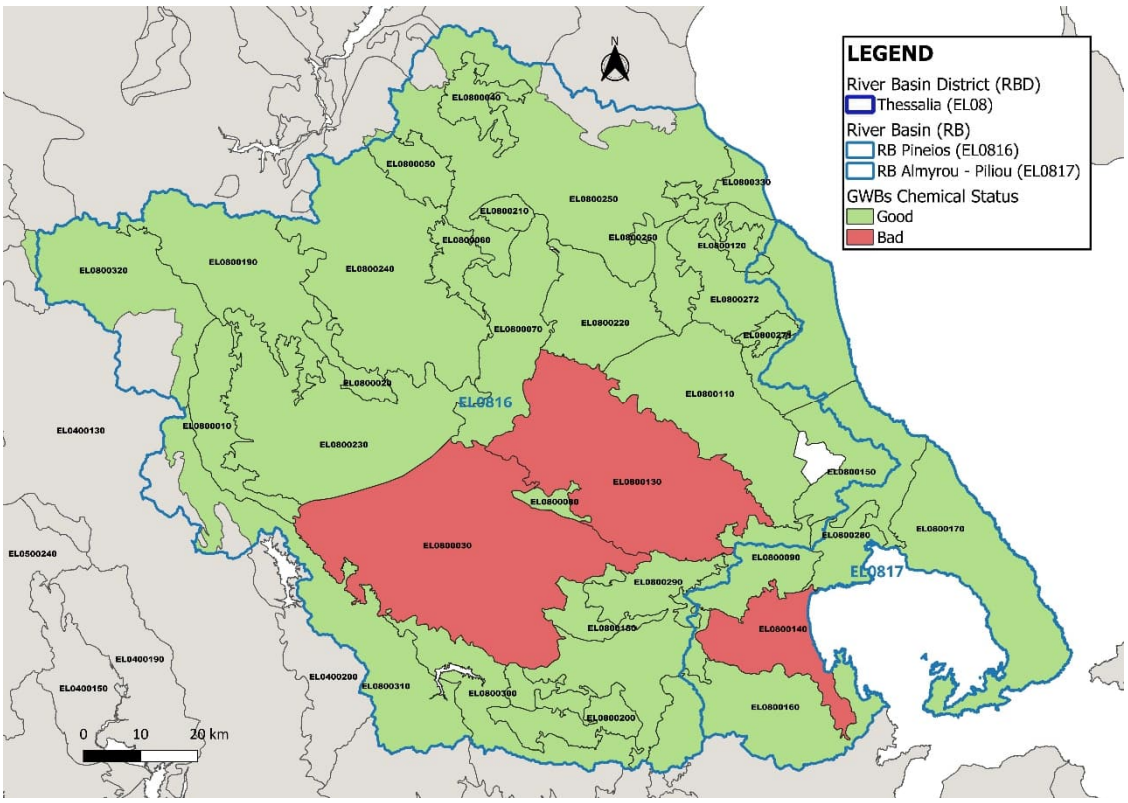
GWB code	Name of the GWB	1st RBMP		1st UPDATE OF RBMP		2nd UPDATE OF RBMP	
		Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status
RIVER BASIN OF PINEIOS (EL0816)							
EL0800010	SYSTIMA KOZIAKA	Good	Good	Good	Good	Good	Good
EL0800020	SYSTIMA PALIOSAMARINAS -VOULAS	Good	Good	Good	Good	Good	Good
EL0800030	SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS	Bad	Bad	Bad	Bad	Bad	Bad
EL0800040	SYSTIMA SARANTAPOROU	Good	Good	Good	Good	Good	Good
EL0800050	SYSTIMA KRANIAS-ELASSONOS	Good	Good	Good	Good	Good	Good
EL0800060	SYSTIMA POTAMIAS	Good	Good	Good	Good	Good	Good
EL0800070	SYSTIMA DAMASIOU-TITANOU	Good	Good	Good	Good	Good	Good
EL0800080	SYSTIMA FYLLIIOU-ORFANON	Good	Bad	Good	Bad	Good	Bad

GWB code	Name of the GWB	1st RBMP		1st UPDATE OF RBMP		2nd UPDATE OF RBMP	
		Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status
EL0800100	SYSTIMA EKKARAS-VELESIOTON	Good	Bad	Good	Bad	Good	Bad
EL0800110	SYSTIMA LARISSAS-KARLAS	Good	Bad	Good	Bad	Good	Bad
EL0800120	SYSTIMA OLYMPOU-OSSAS	Good	Good	Good	Good	Good	Good
EL0800130	SYSTIMA TAOUSANIS-KALOU NEROU	Bad	Bad	Bad	Bad	Bad	Bad
EL0800180	SYSTIMA NARTHAKIOU-VRYSION	Good	Bad	Good	Bad	Good	Bad
EL0800190	SYSTIMA CHASION-ANTICHASION	Good	Good	Good	Good	Good	Good
EL0800200	SYSTIMA XYNIADOS	Good	Bad	Good	Bad	Good	Bad
EL0800210	SYSTIMA ELASSONAS-TSARITSANIS	Good	Good	Good	Good	Good	Good
EL0800220	SYSTIMA KONOU TITARISIOU	Good	Bad	Good	Bad	Good	Bad
EL0800230	SYSTIMA KONOU PINEIOU-	Good	Good	Good	Good	Good	Good

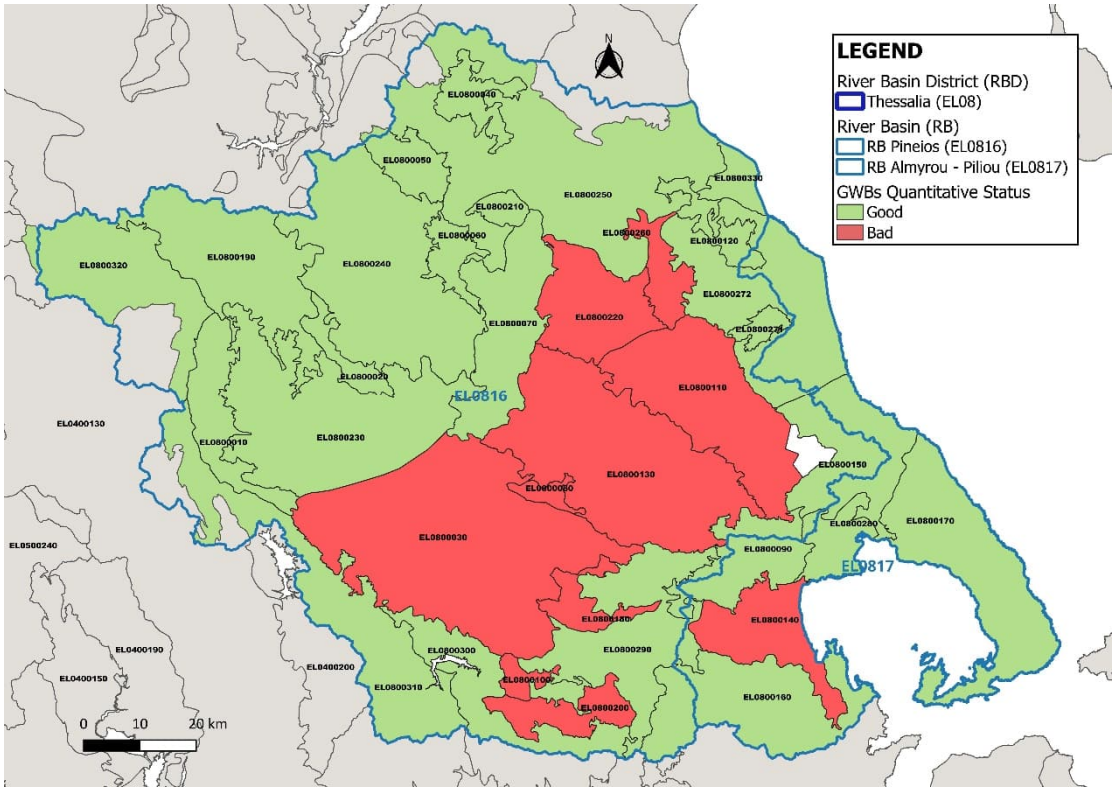
GWB code	Name of the GWB	1st RBMP		1st UPDATE OF RBMP		2nd UPDATE OF RBMP	
		Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status
	PORTAIKOU-PAMISOU						
EL0800240	SYSTIMA YDROFORION CHASION-FARKADONAS	Good	Good	Good	Good	Good	Good
EL0800250	SYSTIMA YDROFORION KATO OLYMPOU-SARANTAPOROU	Good	Good	Good	Good	Good	Good
EL0800260	SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU	Good	Bad	Good	Bad	Good	Bad
EL0800271	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (A)	Good	Good	Good	Good	Good	Good
EL0800272	SYSTIMA YDROFORION MAVROVOUNIOU-OSSAS (B)					Good	Good
EL0800290	SYSTIMA YDROFORION ANO ROU ENIPEA	Bad	Good	Bad	Good	Good	Good
EL0800300	SYSTIMA YDROFORION	Good	Good	Good	Good	Good	Good

GWB code	Name of the GWB	1st RBMP		1st UPDATE OF RBMP		2nd UPDATE OF RBMP	
		Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status
	XYNIADAS-KEDROU						
EL0800310	SYSTIMA YDROFORION ELATIS-RENTINAS	Good	Good	Good	Good	Good	Good
EL0800320	SYSTIMA YDROFORION MALAKASIOTIKOU REMATOS	Good	Good	Good	Good	Good	Good
EL0800330	SYSTIMA EKBOLON PINEIOU	Good	Good	Good	Good	Good	Good
RIVER BASIN OF REMATON ALMYROU-PILIOU (EL0817)							
EL0800090	LOFODES SYSTIMA ALMYROU-VELESTINOU	Good	Good	Good	Good	Good	Good
EL0800140	SYSTIMA ALMYROU	Bad	Bad	Bad	Bad	Bad	Bad
EL0800150	SYSTIMA MAVROVOUNIOU-KARLAS	Good	Good	Good	Good	Good	Good
EL0800160	SYSTIMA ORTHRYOS	Good	Good	Good	Good	Good	Good
EL0800170	SYSTIMATA PILIOU	Good	Good	Good	Good	Good	Good
EL0800280	SYSTIMA YDROFORION N	Good	Good	Good	Good	Good	Good

GWB code	Name of the GWB	1st RBMP		1st UPDATE OF RBMP		2nd UPDATE OF RBMP	
		Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status	Qualitative (chemical) status	Quantitative status
	ANCHIALOU-NIONIAS						



Map 6.2-1: Chemical status of the GWB in the River Basin District of Thessalia (EL08)



Map 6.2-2: Quantitative status of the GWB in the River Basin District of Thessalia (EL08)

6.3 Water status monitoring network

Monitoring Network of SWB

A total of 63 stations for monitoring of surface water bodies operate in the RBD of Thessalia (EL08), of which 27 are surveillance and 36 are operational stations. The following table summarises the number of stations per category of water body, type of monitoring and group of monitored parameters.

Table 6.3-1: Distribution of monitoring stations for SWB in the RBD of Thessalia (EL08)

Station category	Ecological and chemical monitoring		Ecological monitoring only	
	Surveillance	Operational	Surveillance	Operational
Rivers	10	31	10	3
Lakes	2	1	0	0
Coastal	5	1	0	0
Total	**17**	**33**	**10**	**3**

Monitoring network of GWB

The following table summarises the number of stations by type of monitoring and group of monitored parameters.

Table 6.3-2: Distribution of monitoring stations for GWB in the River Basin District of Thessalia (EL08)

Station category	Qualitative (chemical) and quantitative monitoring	
	Surveillance	Operational
Groundwater body level	67	23
Springs flow	10	-

Important data collected and used in the framework of the 2nd RBMP Update come from:

- Project REXUS: MANAGING RESILIENT NEXUS SYSTEMS THROUGH PARTICIPATORY SYSTEMS DYNAMICS MODELLING. European Union's Horizon 2020 research and innovation program, grant agreement No 101003632. Implementation period: 2021-2024. https://www.lenses-prima.eu/
- Project LENSES: LEarning and action alliances for Nexus EnvironmentS. PRIMA program supported by the European Union, grant agreement No 2041. Implementation period: 2021-2024. https://rexusproject.squarespace.com/
- WATER RESOURCES MANAGEMENT IN AGRICULTURAL COASTAL ENVIRONMENTS - ADAPTATION TO THE EFFECTS OF CLIMATE CHANGE (AGROCLIMA)'. 'PARTNERSHIP 2011', Partnerships of Production and Research Organisations in Focused Research and Technology Sectors, General Secretariat for Research and Technology. Implementation period: 2013-2015.

7 ECONOMIC ANALYSIS OF WATER USE

7.1 Estimation of Water Services Costs - Financial Costs

7.1.1 Drinking water supply, sewerage collection and wastewater treatment services

The total financial cost of the drinking water supply, the sewerage collection and wastewater treatment service (where applicable) in the RBD of Thessalia (EL08) is estimated at € 69,5 million.

The recovery of the total financial cost of the drinking water supply, the sewerage collection and wastewater treatment service (where applicable) for the RBD is estimated at 95,2%. for all providers/collective operators (not including private boreholes) and 95.9% including private boreholes that are supplied from the water supply network.

Water consumption from private boreholes in the River Basin District of Thessalia (EL08), which are supplied from the water supply network, is for industrial use. The financial costs of private boreholes are assumed to be fully recovered (100%) from their owners

The unit total financial cost of drinking water supply, the sewerage collection and wastewater treatment service (where applicable) in the RBD EL08 is 1, 146 €/m³ of authorized users consumption and the unit total financial revenue per cubic meter of authorized users' consumption is 1,091 €/m³.

The table below presents the total and unit financial cost and financial revenue figures as well as the recovery of the total financial cost of drinking water supply, the sewerage collection and wastewater treatment service (where applicable), per RB of the River Basin District of Thessalia (EL08), based on the available data of the service providers per RB.

Table 7.1-1: Financial cost recovery for drinking water supply, the sewerage collection and wastewater treatment service (where applicable), in the RBs of the RBD of Thessalia (EL08), 2020

RB	Authorised use consumption (m³)	Total Financial Cost (€)	Average Unit Financial Cost (€/m³)	Total Revenue (€) (charges) (Not including environmental cost)	Average unit revenue (€/m³) (Not including environmental cost)	Total Financial Cost Recovery (%)
PROVIDERS WITH AVAILABLE COST AND REVENUE DATA PER RB[1]	**52.428.285**	**60.513.936**	**1,154**	**57.182.565**	**1,091**	**94,5%**
RB OF PINEIOS (EL0816)	33.496.765	38.515.295	1,150	39.440.109	1,177	102,4%
RB OF REMATON ALMYROU-PILIOU (EL0817)	14.761.636	16.464.936	1,115	13.454.997	0,911	81,7%
PROVIDERS WITH INCOMPLETE OR UNAVAILABLE COST AND/OR REVENUE DATA - TOTAL RBD	**8.215.590**	**8.959.348**	**1,091**	**8.960.593**	**1,091**	**100,0%**
TOTAL PROVIDERS	**60.643.875**	**69.473.284**	**1,146**	**66.143.158**	**1,091**	**95,2%**
PRIVATE BOREHOLES (only drinking water supply)[2]	**9.833.416**					**100,0%**
TOTAL RIVER BASIN DISTRICT	**70.477.291**					**95,9%**

[1] The distribution of providers per RB was based on the abstraction of providers. The MEWSS Karditsa is supplied with water from the RB of Acheloos, which is part of the River Basin District of Western Sterea Ellada (EL04), therefore the total number of providers with available cost and revenue data does not match the sum of the RBs.

[2] This refers to water supplied from the drinking water supply network for industrial use

Source: Ministry of Environment / GDNEW / Water Services Monitoring Mechanism and Study Team's Estimates where no data is provided by the provider.

7.1.2 Water supply service for agricultural use

The total financial cost of the water supply service for agricultural use in the River Basin District of Thessalia (EL08) was estimated at 18,6 million €.

The recovery of the total financial cost of the water supply service for agricultural use in the RBD of Thessalia (EL08) is estimated at 78,8% taking into account only the water supply associations for agricultural use and at 90,9 % including the private boreholes that supply water from the irrigation network.

Water consumption from private boreholes in the River Basin District of Thessalia (EL08), which are supplied by the irrigation network, is for agricultural and livestock use. Private boreholes owners are considered to fully recover their financial costs.

The unit total financial cost of the water supply service for agricultural use in the RBD of EL08 is 0,043 €/m³ of authorised use consumption and the unit total financial revenue per cubic meter of authorised use consumption is 0.034 €/m³.

The table below presents the total and unit financial cost and revenue figures as well as the recovery of the total financial cost of water supply service for agricultural use per RB of the River Basin District of Thessalia (EL08) based on the available data of the providers per RB.

Table 7.1-2: Recovery of Financial Costs of water supply service for agricultural use in the RBs of the RBD of Thessalia (EL08)

LAP	Authorised use consumption (m³)	Total Financial Cost (€)	Average Unit Financial Cost (€/m³)	Total Revenue (€) (charges) (Not including environmental cost)	Average unit revenue (€/m³) (Not including environmental cost)	Total Financial Cost Recovery (%)
PROVIDERS WITH AVAILABLE COST AND REVENUE DATA PER RB[1]	**99.479.688**	**4.254.204**	**0,0428**	**3.385.651**	**0,034**	**79,6%**
RB OF PINEIOS (EL0816)	52.963.580	3.242.046	0,061	3.060.949	0,058	94,4%
RB OF REMATON ALMYROU-PILIOU (EL0817)	205.800	18.029	0,088	19.860	0,096	110,2%
PROVIDERS WITH INCOMPLETE OR UNAVAILABLE COST AND/OR REVENUE DATA - TOTAL RBD	**332.132.038**	**14.397.561**	**0,0433**	**11.303.646**	**0,034**	**78,5%**
TOTAL PROVIDERS	**431.611.726**	**18.651.765**	**0,0432**	**14.689.298**	**0,034**	**78,8%**
PRIVATE GROUNDING (only for agricultural water supply) [2]	**708.678.600**					**100%**
TOTAL RIVER BASIN DISTRICT	**1.140.290.326**					**92,0%**

[1] The distribution of providers per RB was based on the abstraction of providers. The Local Irrigation Network Association of Tavropos Karditsa and the Municipality of Pyli also abstract water from the RB of Acheloos, which belongs to the River Basin District of Western Sterea Ellada (EL04) and which corresponds to a consumption of about 37 million m³. For this reason there is a difference in the sum of consumption per RB with the sum of the providers with available cost and revenue data.
[2] Includes quantities for agricultural and livestock use for abstractions from private boreholes and private water abstractions from surface water bodies.

Source: Ministry of Environment / GDNEW / Water Services Monitoring Mechanism and Study Team's Estimates where no data is provided by the provider.

7.2 Environmental and resource cost

7.2.1 Environmental Cost Assessment

The total environmental cost of the RBD for the current management period amounts to €470.000 . Of this, 80,85% of the environmental cost is attributed to the RB of Pineios (EL0816) and 19,15% in the RB of Rematon Almyrou-Piliou (EL0817). The unit environmental cost at RBD level is estimated at 0,0008 €/m³.

Table 7.2-1: Environmental Costs in the RBs of the RBD of Thessalia (EL08) for the period 2024-2027

RB	Total Environmental Cost (€)	Unit Environmental Cost (€/m³)
Pineios (EL0816)	380.000,00	0,00007
Rematon Almyrou-Piliou (EL0817)	90.000,00	0,00022
Total	**470.000,00**	**0,00008**

The distribution of environmental cost by use in the RBs of the RBD of Thessalia (EL08) is presented in the table below.

Table 7.2-2: Distribution of Environmental Cost per Water Use in the RBD of Thessalia (EL08)

Environmental Cost	Households	Agricultural		Industry
		Irrigation	Livestock	
PINEIOS RB (EL0816)				
Total cost for all years of PoM implementation (€)	6.183,11 €	372.854,39 €	385,00 €	577,50 €
Annual Cost per use (€)	1.545,78 €	93.213,60 €	96,25 €	144,38 €
Share of use (%) in total annual cost	1,63%	98,12%	0,10%	0,15%
Annual Unit Cost (€/m³)	**0,00002 €/m³**	**0,00008 €/m³**	**0,00002 €/m³**	**0,00002 €/m³**
REMATON ALMYROU-PILIOU RB (EL0817)				
Total cost for all years of PoM implementation (€)	23.336,59 €	62.436,40 €	440,31 €	3.786,69 €
Annual Cost per use (€)	5.834,15 €	15.609,10 €	110,08 €	946,67 €
Share of use (%) in total annual cost	25,93%	69,37%	0,49%	4,21%
Annual Unit Cost (€/m³)	**0,00022 €/m³**	**0,00022 €/m³**	**0,00022 €/m³**	**0,00022 €/m³**

In the Pineios RB 98,12% of the total environmental cost is related to irrigation use and 1,63% to household use. In the RB of Rematon Almyrou-Piliou 69,37% of the total environmental costs is related to agricultural and 25,93% is related to household use.

7.2.2 Resource Cost Estimate

The total resource cost of the RBD amounts to 96,572 million € for all years of implementation of the measures. Of this, 98,08% of the resource cost is attributed to the RB of Pineios (EL0816) and 1,92% in the RB of Rematon Almyrou-Piliou (EL0817). The unit resource cost at RBD level is estimated at 0,01723 €/m³.

Table 7.2-3: Resource Cost in the RBs of the RBD of Thessalia (EL08) for the period 2024-2027

RB	Total Environmental Cost (€)	Unit Environmental Cost (€/m³)
Pineios (EL0816)	94.719.088,00 €	0,01823
Rematon Almyrou-Piliou (EL0817)	1.852.816,00 €	0,00453
Total	**96.571.904,00 €**	**0,01723**

The distribution of resource cost by use in the RBs of the RBD of Thessalia (EL08) is presented in the table below.

Table 7.2-4: Distribution of Resource Cost per Water Use in the RBD of Thessalia (EL08)

Resource Cost	Households	Agricultural		Industry
		Irrigation	Livestock	
PINEIOS RB (EL0816)				
Total cost for all years of PoM implementation (€)	2.752.357,01 €	91.965.108,79 €	648,88 €	973,32 €
Annual Cost per use (€)	688.089,25 €	22.991.277,20 €	162,22 €	243,33 €
Share of use (%) in total annual cost	2,91%	97,09%	0,00%	0,00%
Annual Unit Cost (€/m³)	**0,00857 €/m³**	**0,01907 €/m³**	**0,00003 €/m³**	**0,00003 €/m³**
REMATON ALMYROU-PILIOU RB (EL0817)				
Total cost for all years of PoM implementation (€)	378,57 €	1.852.368,86 €	7,14 €	61,43 €
Annual Cost per use (€)	94,64 €	463.092,21 €	1,79 €	15,36 €
Share of use (%) in total annual cost	0,02%	99,98%	0,00%	0,00%
Annual Unit Cost (€/m³)	**0,0000036 €/m³**	**0,00653 €/m³**	**0,000 €/m³**	**0,000 €/m³**

In the Pineios RB 97,09% of the total resource cost is related to irrigation use and 2,91% to household use. In the RB of Rematon Almyrou-Piliou 99,98% of the total resource costs is related to irrigation use while 0,02% is related to household, which includes the drinking water supply and sewerage collection services.

7.2.3 Environmental fees

According to the rules of water cost and price, water service providers will, determine their costs, taking into account the environmental and resource costs calculated as presented in the above paragraphs. In terms of pricing, the relevant charges will have to be determined.

The following decisions have been issued for the River Basin District of Thessalia (EL08), concerning the Environmental Cost and the Resource Cost:

1. **RB: EL0816/0817 - No. Prot: 213/10921 / 07-02-2019 (Year of use 2019)**

Environmental costs (€) per cubic metre of water and per water use				
Environmental costs	Domestic use*	Agriculture **	Livestock***	Industry
PINEIOS RB (EL0816)				
Annual Unit Cost (€/m³)	-	0,0001	0,0026	0,0026
REMATON ALMYROU-PILIOU (EL0817)				
Annual Unit Cost (€/m³)	-	0,0002	0,0011	0,0013

Resource costs (€) per cubic metre of water and per water use				
Environmental costs	Domestic use*	Agriculture **	Livestock***	Industry
PINEIOS RB (EL0816)				
Annual Unit Cost (€/m³)	0,002	0,024	0,002	0,002
REMATON ALMYROU-PILIOU (EL0817)				
Annual Unit Cost (€/m³)	0,00001	0,00001	0,00001	0,00001

Environmental Fee (€) per cubic metre of water and per water use				
Environmental costs	Domestic use*	Agriculture **	Livestock***	Industry
PINEIOS RB (EL0816)				
Annual Unit Cost (€/m³)	0,002	0,0241	0,0046	0,0046
REMATON ALMYROU-PILIOU (EL0817)				
Annual Unit Cost (€/m³)	0,00001	0,00021	0,00111	0,00131

2. RB: EL0816/0817 - No. Prot: 211012 / 12-11-2020 (Year of use 2021)

Environmental costs (€) per cubic metre of water and per water use				
Environmental costs	Domestic use*	Agriculture **	Livestock***	Industry
PINEIOS RB (EL0816)				
Annual Unit Cost (€/m³)	-	0,0001	0,0026	0,0026
REMATON ALMYROU-PILIOU (EL0817)				
Annual Unit Cost (€/m³)	-	0,0002	0,0011	0,0013

Resource costs (€) per cubic metre of water and per water use				
Environmental costs	Domestic use*	Agriculture **	Livestock***	Industry
PINEIOS RB (EL0816)				
Annual Unit Cost (€/m³)	0,002	0,024	0,002	0,002
REMATON ALMYROU-PILIOU (EL0817)				
Annual Unit Cost (€/m³)	0,00001	0,00001	0,00001	0,00001

**Household use includes drinking water supply and sewerage*

*** Agriculture includes the subcategories "2.1 Irrigation" "2.4 Antifrozen protection" "2.3 Aquaculture" "2.5 Other water uses serving agricultural activities" of the basic category "2. Agricultural use" of Annex I of the J.M.D. 146896/14.*

****Livestock farming includes poultry farming*

8 ENVIRONMENTAL OBJECTIVES - EXEMPTIONS

The following Table summarises the objectives set for 2027 for the 82 SWB of the RBD of Thessalia. More specifically:

Table 8-1: Ecological status/ecological potential and chemical status targets for surface water bodies by 2027

OBJECTIVE	NUMBER OF SURFACE WB
Maintain of good / high ecological status	26
Maintain of good chemical status	52
Achieve good ecological status/potential	56
Achieve good chemical status	30
Exemption in accordance with Article 4.4	63
Exemption in accordance with Article 4.5	0
Exemption in accordance with Article 4.6	0

According to the above, it appears that for a total of 63 SWB, exemption of Article 4.4 for an extension of the deadline is implemented.

The Table below summarises the objectives set for the 34 GWB of the RBD of Thessalia:

Table 8-2: Quantitative and chemical status objectives for GWB after 2027

OBJECTIVE	NUMBER OF SYSTEMS
Maintain of good quantitative status	24
Maintain of good chemical status	31
Achieve good quantitative status	10
Achieve good chemical status	3
Exemption in accordance with Article 4.4	10
Exemption in accordance with Article 4.5	0
Exemption in accordance with Article 4.6	0

According to the above:

- For 24 GWB the objective is to maintain good quantitative status
- For 10 GWB the objective is to achieve good quantitative status whenever Natural Hydrogeological Conditions allow it after 2027.
- For 31 GWB the objective is to maintain good chemical status
- For 3 GWB the objective is to achieve good chemical status whenever Natural Hydrogeological Conditions allow it after 2027.

9 PROGRAM OF MEASURES

9.1 Main management issues in the RBD of Thessalia (EL08)

The most important management issues for the River Basin District of Thessalia, as highlighted by the assessment of anthropogenic pressures and their impacts on each surface and groundwater body, are the following.

Pollution of surface water and groundwater bodies

The most important pressures identified in the River Basin District of Thessalia are mainly related to agricultural, livestock farming, and secondarily, the establishment and operation of primary sector product utilisation units (inside and outside the Industrial Areas).

Water abstractions from rivers and lakes:

Based on the assessment of the abstraction pressures on surface water systems and the examination of supply and demand balances, the following conclusions can be drawn:

Many surface water bodies are overexploited. It is notable that 9 water bodies are subject to high abstraction pressure and another 14 to medium abstraction pressure on an annual basis.

- This overexploitation relates to abstractions during the irrigation season, which largely coincides with the period of low river flows.
- As a result of the above, extremely low to almost zero flows are observed in several river WB during the summer period, making it impossible to maintain healthy ecosystems and general environmental requirements.
- It is worth noting that the over-exploitation of groundwater (over-abstraction from permanent groundwater reserves) contributes to these low flows, since summer flows in the river WB of the Pineios basin are supplied by discharges from groundwater bodies.
- Irrigation consumption is less than demand. This is due to high costs in areas where abstraction has to be done from great depths due to the reduction in groundwater reserves. The result is the no irrigation or partial irrigation of agricultural productive land.

In general, in Thessaly it is estimated that, under the current conditions of resource availability, it is not possible to provide the necessary quantities of water to meet irrigation demand without surface and groundwater abstraction rates, which lead to the deterioration of the status of water bodies and the non-achievement of the objectives of the Directive.

Hydromorphological alterations:

The hydromorphological alterations of surface water bodies in the River Basin District of Thessalia consist of interventions mainly concerning dams for water abstraction, adjustment of rivers, regulation of water balance of lakes and interventions on coasts.

Restrictions - Commitments

Some interventions, such as the modernisation of old irrigation networks and others, require the allocation of financial resources.

Quantitative groundwater management

In terms of groundwater bodies, the River Basin District of Thessalia is rich in groundwater resources. The geological structure has contributed to the creation of extensive groundwater

aquifers both in the two main lowland areas (alluvial fields) and in the mountainous carbonate blocks (limestones, marbles) that develop along the perimeter of the lowland area and in the most mountainous areas.

Smaller groundwater aquifers are also developed in regional lowland areas as well as in mountainous or hilly areas where low potential groundwater aquifers cover local water supply and irrigation needs.

In the River Basin District of Thessalia, the following 10 groundwater bodies are in a state of overexploitation and therefore in a poor quantitative status:

- EL0800030 SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS
- EL0800080 SYSTIMA FYLLIIOU-ORFANON
- EL0800100 SYSTIMA EKKARAS-VELESIOTON
- EL0800110 SYSTIMA LARISSAS-KARLAS
- EL0800130 SYSTIMA TAOUSANIS-KALOU NEROU
- EL0800140 SYSTIMA ALMYROU
- EL0800180 SYSTIMA NARTHAKIOU-VRYSION
- EL0800200 SYSTIMA XYNIADOS
- EL0800220 SYSTIMA KONOU TITARISIOU
- EL0800260 SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU

Also the systems: SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS, SYSTIMA TAOUSANIS-KALOU NEROU, SYSTIMA ALMYROU and SYSTIMA YDROFORION ANO ROU ENIPEA are in bad chemical condition. In the case of the SYSTIMA ALMYROU aquifer, overexploitation is accompanied by severe waterlogging due to sea intrusion.

From the above systems that are overexploited, approximately 120-150x10^6 m^3 of the permanent geological reserves are abstracted annually. Based on the available, long-term groundwater level

monitoring data, it is estimated that about 3 x10^9 m^3 (three billion) of the permanent reserves of the main granular aquifers of the Pineios basin have been abstracted.

Sufficiency and good quality of drinking water

Regarding problems of drinking water sufficiency and quality in the River Basin District of Thessalia, the main problems are technical, organizational and financial problems, problems of sufficient water resources, as well as quality problems due to chemical pollution of groundwater aquifers.

9.2 Program of Basic and Complementary Measures

According to paragraph 3 of Article 11 of the Directive, the Basic Measures are the minimum requirements that must be met in order to achieve the Environmental Objectives of Article 4 and comprise two sub-groups of measures.

The groups of basic measures on the basis of which the program of basic measures of the 2nd Update of the RBMP of Thessalia has been designed, are described In the following sections.

9.2.1 Actions in implementation of EU Directives (Group I Basic Measures)

The table below lists the provisions transposing the EU Directives of Annex VI of Directive 2000/60/EC (as amended and in force) into national law .

DIRECTIONS	INCORPORATION INTO NATIONAL LAW
Bathing waters (Directive 2006/7/EC)	**JMD 8600/416/E103/23.02.2009 (Government Gazette 356/B/2009) on the** "Quality and management measures of bathing water, in compliance with the provisions of Directive 2006/7/EC "on the management of bathing water quality and the repeal of Directive 76/160/EEC" as amended and in force.
Protection of wild birds (Directive 2009/147/EC) and habitats (Directive 92/43/EEC)	**JMD ΗΠ 37338/1807/E103/1.9.2010** (Government Gazette 1495/B/2010) "Determination of measures and procedures for the conservation of wild birds and their habitats, in compliance with the provisions of Directive 79/409/EEC "On the Conservation of Wild Birds" of the European Council of 2 April 1979, as codified by Directive 2009/147/EC" and its amending **JMD HH 8353/276/E103/2012 (Government Gazette 415/B/2012).** **JMD 33318/3028/11.12.1998 (Government Gazette 1289/B/1998)** "definition of measures and procedures for the conservation of natural habitats and wild fauna and flora" and its amendment **JMD HH 14849/853/E103/2008** (Government Gazette 645/B/2008) in compliance with the provisions of Directive 92/43/EEC "on the conservation of natural habitats and wild fauna and flora". **Law 3937/2011 (Government Gazette 60/A/2011)** "Conservation of Biodiversity and other provisions" **JMD 50743/2017 (Government Gazette 4432/B/2017)** "Update of the national list of sites of the European Ecological Network Natura 2000" **Law 4685/2020 (Government Gazette 92/A/2020)** "Modernization of environmental legislation, incorporation into Greek legislation of Directives 2018/844 and 2019/692 of the European Parliament and of the Council and other provisions".

DIRECTIONS	INCORPORATION INTO NATIONAL LAW
Drinking Water (Directive 2020/2184/EU)	**JMD No. Δ1 (δ)/ΓΠ οικ. 27829/15-5-2023 (Government Gazette 3525/B/25-5-2023)** "Quality of water intended for human consumption in compliance with the provisions of Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 (L435/1, 23.12.2020)"
Environmental Impact of Projects/ Activities (Directives 85/337/EEC, 2011/92/EU, 2014/52/EU)	**Law 4014/2011 (Government Gazette 209/A/2011)** "Environmental licensing of projects and activities, regulation of arbitrary acts in connection with the creation of environmental balance and other provisions under the competence of the Ministry of Environment" as amended and in force. **MD οικ.5688/2018 (Government Gazette 988/B` 21.3.2018)** "Modification of the annexes of the law. 4014/2011 (A' 209), in accordance with Article 36A of this Law, in compliance with Directive 2014/52/EU "amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment" of the European Parliament and of the Council of 16 April 2014". **Law 4936/2022 (Government Gazette 105/A` 27.5.2022)** "National Climate Law - Transition to climate neutrality and adaptation to climate change, urgent provisions to address the energy crisis and environmental protection".
Industrial Emissions Directive IED (Directives 96/61/EC, 2008/1/EC, 2010/75/EU)	**MD 36060/1155/E.103/2013 (Government Gazette 1450/B/2013)** "Establishing a framework of rules, measures and procedures for the integrated prevention and control of environmental pollution from industrial activities, in compliance with the provisions of Directive 2010/75/EU "on industrial emissions (integrated pollution prevention and control)" of the European Parliament and of the Council of 24 November 2010"
Protection from Nitrate Pollution (Directive 91/676/EEC)	**JMD 16190/1335/19.05.1997 (Government Gazette 519/B/1997)** "Measures and conditions for the protection of waters from nitrate pollution of agricultural origin" **MD οικ. 19652/1906/1999 (Government Gazette 1575/B/1999)** "Identification of waters subject to nitrate pollution of agricultural origin - List of vulnerable zones, in accordance with paragraphs 1 and 2 respectively of Article 4 of Joint Ministerial Decision No. 16190/1335/1997 "Measures and conditions for the protection of waters from nitrate pollution of agricultural origin" (B 519). Amendment of Articles 3, 4, 5 and 8 of this Decision" as amended by the **Ministry of Public Provisions 20419/2522/2001 (Government Gazette 1212/B/2001), the Ministry of Public Provisions 24838/1400/E103/2008 (Government Gazette 1132/B/2008), the Ministry of Public Provisions 106253/2010 (Government Gazette 1843/B/2010), the Ministry of Public Provisions 190126/2013 (Government Gazette 983/B/2013), the Ministry of Public Provisions 147070/2014 (Government Gazette 3224/B/2014)** and in force. **JMD YPEN/38552/265/2019 (Government Gazette 1496/B/3-5-2019)** Action Program for areas identified as vulnerable zones from nitrate pollution of agricultural origin according to Article 2 of the relevant Decree No. 19652/1906/1999 Joint Ministerial Decision (V'1575), as in force, in compliance with Directive 91/676/EEC "for the protection of waters against nitrate pollution of agricultural origin" of the Council of the European Communities of 12 December 1991, as amended and in force. **MD 1848/278812/2021 (Government Gazette 4855/B` 20.10.2021)** "Code of Good Agricultural Practice for the Protection of Waters from Nitrate Pollution of Agricultural Origin (Article 10§1)

DIRECTIONS	INCORPORATION INTO NATIONAL LAW
Plant protection products (Directive 2009/128/EC, as amended by 2019/782/EU, Regulation (EC) No 1107/2009, Regulation (EU) No 652/2014)	**Law 4036/27.01.2012 (Government Gazette 8/A/2012)** "Placing of agricultural products on the market, rational use of agricultural products and related provisions" as amended and in force. **Law 4625/2019 (Government Gazette A 139 - 31.08.2019)** "Regulations of the Ministry of Infrastructure and Transport and other urgent provisions" [Article 19 includes the amendment of Annex E of Law 4036/2012 (Government Gazette 8/A/2012), in compliance with Directive (EU) 2019/782 (Articles 1 and 2 of Directive 2019/782/EU)].
Addressing major accident (Seveso) (Directive 2012/18/EU)	**JMD 172058/2016 (Government Gazette 354/B/2016)** "Determination of rules, measures and conditions for addressing the risks of major accidents in installations or units, due to the presence of hazardous substances, in compliance with the provisions of Directive 2012/18/EU "on the control of major accident hazards involving dangerous substances and on the amendment and subsequent repeal of Council Directive 96/82/EC" of the European Parliament and of the Council of 4 July 2012. Replacement of Decree No 12044/613/2007 (376/B/2007), as corrected (Government Gazette 2259/B/2007)'.
Use of Sewage Sludge (Directives 86/278/EEC, 2018/853/EU, Regulation 2019/1010/EU)	**JMD 80568/4225/05.07.1991 (Government Gazette 641/B/1991)** "Methods, conditions and restrictions for the use in agriculture of sludge from domestic and urban wastewater treatment" **JMD No. ΥΠΕΝ/ΔΔΑ/41828/630 (FEK 2692/Β/21.04.2023)** "Measures, conditions and procedures for the use of treated sludge in agriculture and soil remediation - Compliance with the provisions of Council Directive 86/278/EEC of 12 June 1986 "on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture", as amended by Regulation (EU) 2019/1010 of the European Parliament and of the Council of 5 June 2019 and replacing Regulation (EU) No. 80568/4225/1991 (B' 641) Joint Ministerial Decision."
Urban Wastewater Treatment (Directives 91/271/EEC, 98/15/EC)	**KYA 5673/400/05.03.1997 (Government Gazette 192/B/1997)** "Measures and conditions for the treatment of urban wastewater" and its amending decisions **YA 19661/1982/2.8.1999 (Government Gazette 1811/B/1999)** and **YA 48392/939/28.3.2002 (Government Gazette 405/B/2002)**

The planned actions for the implementation of EU and national legislation on water protection are presented in the following table.

Table 9.2-1: : Actions in implementation of EU Directives

DIRECTIONS	PLANNED ACTIONS
Bathing waters (Directive 2006/7/EC)	• **BO11:** Continue monitoring bathing water quality in accordance with Directive 2006/7/EC.
	• **BO12:** Update of the Registry of Swimming Beaches
Protection of wild birds (Directive 2009/147/EC) and habitats (Directive 92/43/EEC)	• **BO21:** Preparation/institution of Management Plans for protected areas of the Natura 2000 network that are directly dependent on water, with special reference to water management issues.
	• **BO22:** Monitor/assess the conservation status of water-dependent habitats and species in Natura 2000 sites.
Drinking Water (2020/2184/ΕΕ)	• **BO31:** Monitoring the implementation of the Directive

DIRECTIONS	PLANNED ACTIONS
Industrial Emissions Directive IED (Directive 2010/75/EU)	• **BO51:** Keeping a record-Registry of establishments covered by the provisions of the Directive
Protection from nitrates (Directive 91/676/EEC)	• **BO61:** Systematic monitoring of nitrate levels in water bodies that are or may be subject to nitrate pollution. Implementation of the Code of Good Agricultural Practice.
Plant protection products (Directive 2009/128/EC, Regulation (EC) No 1107/2009, Regulation (EU) No 652/2014)	• **BO71:** Rational use of plant protection products
Addressing major accident (Seveso) (Directive 2012/18/EU)	• **BO81:** Keeping a record-Registry of establishments covered by the provisions of the Directive.
Use of Sewage Sludge (Directive 86/278/EEC)	• **BO91:** Preparation of a CBA on measures, conditions and procedures for the use of sludge from the treatment of domestic and urban wastewater and certain liquid wastes, in compliance with the provisions of Directive 86/278/EEC and replacing CBA 80568/4225/1991 and promotion of actions related to the safe disposal of treated sludge.
Urban waste water treatment (Directives 91/271/EEC and 98/15/EC) Regulation (EC) No 1107/2009, Regulation (EU) No 652/2014)	• **BO101:** Completion of sewerage and wastewater treatment works in agglomerations covered by the Directive
	• **BO102:** Strengthening actions to monitor the efficient operation of existing wastewater treatment and drainage projects.

9.2.2 Other Basic Measures (Group II Basic Measures)

These categories of basic measures relate to the basic principles of Community and national water management legislation. The basic measures in this group relate to the horizontal application of actions to groups of water bodies, usually with the aim of achieving or maintaining good status in them.

A summary table is presented below with the measures proposed by this Group in the program of measures of the River Basin District of Thessalia and the corresponding categories of measures. The program of measures for the River Basin District of Thessalia includes 22 basic measures.

Table 9.2-2: Basic Measures of Other Categories

CODE - NAME OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE
M08B0204 Training and expertise of all stakeholders (Decentralized Administrations, Regional Administration and water service providers) on the general rules of costing and pricing of water supply services	Measures to implement the principle of cost recovery for water services (Article 9)	-	Ongoing Measure (modification of title and description)
M08B0301 Preparation / Update of Water Master Plans (Masterplan)	Measures to promote the efficient and sustainable use of water so as not to compromise the achievement of the objectives of the Directive (Article 4)	-	M08B0301 Ongoing Measure (modification of description)
M08B0302 Actions for the reinforcement, rehabilitation, modernization of water supply networks and leakage control	Measures to promote the efficient and sustainable use of water so as not to compromise the achievement of the objectives of the Directive (Article 4)	Modification / Specialization of measure WD08B120	M08B0302 Ongoing Measure (modification of description)
M08B0303 Increasing water use efficiency in land improvement infrastructure	Measures to promote the efficient and sustainable use of water so as not to compromise the achievement of the objectives of the Directive (Article 4)	Modification / Specialization of measure WD08B070	M08B0303 Ongoing measure (modification of the description of the measure)
M08B0304 Investments for saving water in agriculture	Measures to promote the efficient and sustainable use of water so as not to compromise the achievement of the objectives of the Directive (Article 4)	Modification / Specialization of measure WD08B070	M08B0304 Ongoing measure
M08B0305 Determination of upper limits for crop irrigation needs for private water abstraction	Measures to promote the efficient and sustainable use of water so as not to compromise the achievement of the objectives of the Directive (Article 4)	Modification/ Specialization of measure WD08B170	M08B0305 Ongoing measure (modification of measure description)
M08B0308 Update of the existing Strategic Plan to Address Water Scarcity and Drought	Measures to promote the efficient and sustainable use of water so as not to compromise the achievement of the objectives of the Directive (Article 4)		M08B0308 Ongoing measure
M08B0401 Protection of water abstraction points/zones	Measures to protect waters intended for	Modification / Specialization	M08B0401 Ongoing

CODE - NAME OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE
intended for human consumption from Groundwater Bodies	human consumption (Article 7)	of measure WD08B100 and WD08B130	measure (modification of measure description, including obligations of Directive 2020/2184/EU)
M08B0402 **Protection of GWB included in the Register of protected areas for human consumption and establishment of an institutional framework of protection**	Measures to protect waters intended for human consumption (Article 7)	Modification / Specialization of measure WD08B140	M08B0402 Ongoing measure
M08B0403 **Protection of water projects intended for human consumption from Surface Water Bodies**	Measures to protect waters intended for human consumption (Article 7)	-	M08B0403 Ongoing measure (modification of the description of the measure including the obligations of Directive 2020/2184/EU)
M08B0501 **Restrictions, terms and conditions for the construction of groundwater abstraction projects (boreholes, wells, etc.) for new uses, as well as the extension of permits for existing water uses in:** **(a) areas with poor quantitative status** **(b) in protection zone II of water abstractions serving drinking water supply networks operated by water service providers,** **(c) zones of irrigation networks associations** **(d) GWB in coastal zones with extensive or localised salinisation problems, irrespective of their origin**	Measures to control surface and groundwater abstraction and surface water storage	Modification / Specialization of measure WD08B210	M08B0501 Ongoing measure (modification of measure description)
M08B0601 **Investigation of the conditions for the application of artificial groundwater aquifer enrichment as a means of quantitative enhancement and qualitative protection of GWB, with priority to GWB in poor condition and treatment of salinisation**	Measures for the control and licensing of artificial enrichment of the GIS	Continuation of Measure WD08B220	M08B0601 Ongoing measure
M08B0701 **Strengthening environmental inspections and audits**	Measures on point sources of discharges	-	M08B0701 Ongoing measure
M08B0702 **Defining guidelines and developing tools for the**	Measures on point sources of discharges	-	New measure to replace

CODE - NAME OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE
effective control of wastewater and industrial wastewater discharges			M08B0702 & M08B1102
M08B0704 Conditions for the licensing of new/expansion of existing aquaculture facilities	Measures on point sources of discharges	-	M08B0704 Ongoing measure
M08B0705 Establishment of rules for the protection of sinkholes	Measures on point & diffuse sources of discharges		M08B0705 Ongoing measure
M08B0801 Biological agriculture	Measures on diffuse sources of discharges	Modification / Specialization of measure WD08B320	M08B0801 Ongoing measure (modification of measure description)
M08B0803 Reduction of diffuse pollution from agriculture in the vulnerable zones of Directive 91/676/EEC	Measures on diffuse sources of discharges	-	M08B0803 Ongoing measure (modification of measure description)
M08B0902 Determination of the maximum range of reservoir level variation	Measures to address negative impacts on the status of surface water bodies in particular from hydro-morphological alterations	-	M08B0902 Ongoing measure (modification of measure description)
M08B0905 Determination of selected areas for river sediment deposits removal for the needs of civil engineering works	Measures to address negative impacts on the status of surface water bodies in particular from hydro-morphological alterations	Continuation of Measure WD08B360	M08B0905 Ongoing measure (modification of measure description)
M08B0906 Monitoring, recording and restoration of coastal erosion	Measures to address negative impacts on the status of surface water bodies in particular from hydro-morphological alterations		M08B0906 Ongoing measure
M08B0907 Measures to identify and achieve Good Ecological Potential in Heavily Modified Water Bodies	Measures to address negative impacts on the status of surface water bodies in particular from hydro-morphological alterations	-	New measure, following the implemented measure M08B0904 of the 1st Update

9.2.3 Supplementary Measures

The program of basic measures is a tool for the protection and restoration of all water bodies. To achieve the objectives of the Management Plan, the implementation of the basic measures needs to be supported by supplementary measures.

Methodologically, supplementary measures were suggested:

a) To maintain the good status of surface or groundwater bodies, as well as to increase knowledge and awareness on specific issues for the rational use of water for targeted users. In this case, the supplementary measures are applied horizontally and do not identify the water bodies affected.

b) Water bodies that, despite the implementation of the program of basic measures, are estimated to fail to achieve the good status objective by 2027, namely:

- in water bodies which, according to measurements of qualitative and quantitative parameters or according to the new grouping methodological approach, are in a lower than good status,
- in water bodies which are in good status but where there is clear evidence, through the analysis of pressures, that they are at risk of failing to achieve their environmental objectives.

The measures of case (b) shall be taken into consideration for the calculation of environmental and/or resource costs, in accordance with the applicable costing rules.

In addition to the above, the following section provides a detailed description of the quantitative water resources deficit in combination with the poor quantitative status of specific groundwater bodies of the RBD and proposes targeted packages of measures.

9.2.4 Analysis of water resources deficit in the River Basin District of Thessalia and actions - Proposed Measures

In this section, a brief presentation is made of the additional measures proposed to be included in the program of supplementary measures of the 2nd Update of the RBMP of Thessalia and RBMP of Western Sterea Ellada, concerning the coverage of the quantitative annual deficit of 172 hm³ recorded in Thessalia for the coverage of the basic water uses (agriculture, livestock, water supply and industry), as well as the achievement of the objectives of the Directive for the surface and groundwater of the River Basin District of Thessalia. These supplementary measures allow for the conditional transfer of 250 hm³ per year from the RB of Acheloos to the RB of Pineios.

More specifically, in the context of the present 2nd Update of the RBMP of Western Sterea Ellada and Thessalia, it is proposed to include the possibility of transferring 250 hm³ per year from the RB of Acheloos to the RB of Pineios in the program of supplementary measures of the two RBMPs (Western Sterea Ellada and Thessalia) as a group of four distinct measures, of which the successful completion of the first is a prerequisite for the activation and implementation of the other three.

The first measure concerns both the preparation of the necessary technical studies for the redesign[1] of the Sykia reservoir as the only water storage project that will provide the possibility of transferring 250 hm³ per year and the preparation - updating of the studies necessary according to the legislation in force for the comprehensive technical and environmental licensing of the entire project.

The other three measures concern the implementation of the construction works for the transfer of water quantity from RB of Acheloos and their utilisation in the RBD of Thessalia. These three measures are subject to the successful completion of the first measure mentioned above and can therefore only be activated and implemented after the completion of the procedures and actions for the redesign and successful licensing of the Sykia project.

The table below presents the water demand and availability of water resources as derived from the 2nd Update of the RBMP of Thessalia.

Table 9.2-3: Water needs and available water resources in the RBD of Thessalia (1st and 2nd Update of the RBMP)

Units of measurement	stremma	m³	m³
WATER NEEDS IN THE RBD OF THESSALIA		1st Update	2nd Update
Irrigation needs (AGRICULTURE) - 1st Update	2.500.000	1.310.000.000*	
Irrigation needs (AGRICULTURE) - 2nd Update	2.830.000		1.290.000.000**
Losses in water transport mainly of surface water in primary and secondary networks (from the abstraction source to the central supply in the field) - 2nd Update			89.000.000
OTHER NEEDS (WATER SUPPLY, LIVESTOCK, INDUSTRY)		115.000.000	106.000.000
TOTAL		***1.425.000.000***	***1.485.000.000***

[1] *The redesign of the Sykia reservoir is absolutely necessary, since the last design was done before 2000 and involved a storage project which, in combination with the Mesochora reservoir, provided the possibility of transferring more than 1 hm⁶ per year.*

Units of measurement	stremma	m^3	m^3
AVAILABILITY OF WATER RESOURCES WITHIN THE RIVER BASIN DISTRICT OF THESSALIA			
SECURED QUANTITY AVAILABILE FROM EXISTING STORAGE OPERATIONS		168.000.000	220.000.000
SUSTAINABLE QUANTITY OF ANNUAL GROUNDWATER ABSTRACTION (average environmental requirements)		620.000.000	620.000.000
SUSTAINABLE QUANTITY OF SUMMER ABSTRACTION FROM SURFACE WATERS (average environmental requirements)		160.000.000	180.000.000
TOTAL		***948.000.000***	***1.020.000.000***
REMAINING QUANTITATIVE DEFICIT		***477.000.000***	***465.000.000***

** Includes surface water transport losses in primary and secondary networks (from the abstraction source to the central supply in the field)*
*** In the 2nd Update, meteorological data of mean temperature time series were used for the assessment of irrigation needs and in applying the Blaney - Criddle method, in contrast to the methodology applied in the 1st Update, when the mean maximum temperature was used.*

- Following the implementation of a series of measures, which are already having visible results in many cases and which relate to

  a) reduced irrigation water consumption by reducing losses (replacing open networks with closed ones) and rationalising irrigation methods with a target quantity of 450 cubic meters/stremma/year for crop irrigation; and

  b) increased available resources in the RBD of Thessalia due to the development of new water storage projects, reservoirs, as well as the application of artificial enrichment in groundwater aquifers

  still remains a significant deficit of available water resources to meet the needs in the RBD of Thessalia, estimated at 172 hm^3 per year.

  The table below shows the quantities per package of measures and the corresponding remaining deficits.

Packages of basic and supplementary measures within the Water Region of Thessaly of the proposed programme of measures of the 2nd Update of the RBMP of Thessalia	REMAINING DEFICIT (m³/year)
Estimated initial annual deficit (2021 data)	465.000.000
FIRST PACKAGE OF MEASURES (savings and rationalisation measures) including measures for water savings and loss reduction (replacement of networks, rationalisation of irrigation methods, etc.) *Remaining quantitative deficit after the implementation of the first package of measures*	359.500.000
SECOND PACKAGE OF MEASURES (relatively mature water storage projects in Thessalia - included in a financial instrument) Winter runoff storage projects of importance (Narthaki, Kaklitzorema), the Agiokampos reservoir, the Paleoderli dam on the Enipeas and the Pournari reservoir in Ambelakia *Remaining quantitative deficit after the implementation of the second package of measures*	322.258.000
THIRD PACKAGE MEASURES (less mature water storage projects in Thessalia - not included in a financial instrument) Reservoir projects: the dams of Pyli, Chamilo Mouzaki, Kalouda and Neochoritis, the reservoirs of Kalo Nero - Agios Antonios, Koilada, Kranonas, Belma and Kerasoula Trikalon, the dam at Deleria, the dam of Agioneriou Elassona and the Titanos weir Artificial enrichment in groundwater aquifers Reservoirs in lowlans *FINAL REMAINING QUANTITATIVE DEFICIT AFTER THE IMPLEMENTATION OF ALL THE ABOVE MEASURES*	172.038.000

- The research and analysis that took place in the framework of both the 1st Update of the RBMP and the current 2nd Update does not leave room for significant further possibilities to increase the availability of water resources through new storage projects that have not been identified so far within Thessalia and have not been included as measures in the 2nd Update of the RBMP of Thessalia.

- Similarly, the research and analysis that took place in the framework of both the 1st Update of the RBMP and the current 2nd Update does not leave room for significant further possibilities to reduce the average irrigation requirement below 450 cubic meters per stremma, even if losses in irrigation water transfer are minimised and irrigation methods are implemented to the greatest extent possible (depending on the types of crops).

Table 9.2-4: Supplementary measures to achieve good status (Part B - Additional measures for the transfer of water from the RB of Acheloos to the RB of Pineios)

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1O RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
M08Σ1126 Redesign of the Sykia reservoir at preliminary design level for the transfer of 250 million cubic meters from RB	Construction projects	The measure is related with WD08S400 of the 1st RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are	750.000.000 The cost is counted in the Program of Measures of the RBD of EL08

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1O RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
of Acheloos to the RB of Pineios and its licensing				expected to benefit from the proposed water storage projects	
M08Σ1127 Implementation of the redesigned Sykia reservoir project	Construction projects	The measure is related with WD08S401 of the 1st RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects	100.000.000 The cost is counted in the Program of Measures of the RBD of EL08
M08Σ1128 Completion of the Tunnel for Water Transfer of 250 hm³ from RB of Acheloos to the RB of Pineios	Construction projects	The measure is related with WD08S402 of the 1st RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects	70.000.000 The cost is counted in the Program of Measures of the RBD of EL08
M08Σ1129 Design and Construction of irrigation networks for the replacement of boreholes in the RB of Pineios	Construction projects	The measure is related with WD08S403 of the 1st RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects	120.000.000 The cost is counted in the Program of Measures of the RBD of EL08

9.2.5 Supplementary Measures

The program of measures for the River Basin District of Thessalia includes 55 supplementary measures, while the three conditional measures concerning the transfer of water from the Acheloos RB to the Pineios RB are also described. The following table lists the supplementary measures to achieve good status in the surface and groundwater bodies of the river basin district:

Table 9.2-5: Supplementary measures to achieve the objectives of the Directive in surface and groundwater bodies in the River Basin District of Thessalia (EL08)

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
M08Σ0201 Development of a Monitoring System for the Program of Measures of the RBMP of the River Basin District and provision of support services for the implementation of the program of measures of the RBMP of the River Basin District	Administrative Measures	-	M08Σ0201 Ongoing measure	All WB	650.000
M08Σ0202 Implementing targeted audits and actions to maintain the lower ecological level of Karla reservoir	Administrative Measures	-	M08Σ0202 Ongoing measure	EL0816L000000002H (TECHNITI LIMNI KARLAS)	100.000
M08Σ0203 Taking targeted actions to maintain a continuous and minimal water supply throughout the year in the 7T ditch, through which Karla reservoir is fed	Administrative Measures	-	M08Σ0203 Ongoing measure	EL0816L000000002H (TECHNITI LIMNI KARLAS), EL0816R000000064A (7T)	50.000
M08Σ0207 Establishment of an institutional framework for determining the conditions for the protection of inland recreational waters under Article 6 of Directive 2000/60/EC - Temporary regulation for new projects in inland water bodies included as recreational waters in the Register of Protected Areas under Article 6 of Directive 2000/60/EC	Administrative measures	Continuation of measure WD08B350	Modification of the basic measure M08B0901	PINEIOS P. 1 (EL0816R000201002N), PINEIOS P. 2 (EL0816R000200003N), PINEIOS P. 3 (EL0816R000200004N), PINEIOS P. 4 (EL0816R000200005N)	0
M08Σ0401 Promoting voluntary agreements with	Environmental agreements after	It is related to the measure	M08Σ0401 Ongoing	EL0800030 (SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS),	20.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
large private companies and large consumers (MEWSS, collective irrigation networks, industries) that consume a lot of water or cause pollution in water bodies to adopt initiatives and codes of good behavior	negotiations	WD08S050 of the first RBMP	measure	EL0800110 (SYSTIMA LARISSAS-KARLAS), EL0800130 (SYSTIMA TAOUSANIS-KALOU NEROU), EL0800140 (SYSTIMA ALMYROU), EL0800260 (SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU)	
M08Σ0501 Audits in the outlets of stormwater and other point sources of pollution discharging into surface water systems	Emission controls	-	M08Σ0501 Ongoing measure	All WB	120.000
M08Σ0503 Audits on compliance with the discharging limits by industrial processing and livestock and poultry farms within the catchment area of the water body at least twice a year	Emission controls	-	M08Σ0503 Ongoing measure	For SWB classified as “failing to achieve good” ecological or chemical status	200.000
M08Σ0504 Establishment of a special action plan for technical and regulatory measures for the protection of groundwater in the Kileler area (Stephanovikeio et al) by the presence of total and hexavalent chromium.	Emission controls	It is related to measure WD08S070 of the first RBMP	M08Σ0504 Ongoing measure	EL0800110 (SYSTIMA LARISSAS-KARLAS)	90.000
M08Σ0505 Design and implementation of a specialised program aiming at monitoring point source discharges in SWB related to specific pollutants according to the results of the Registry of pollution sources	Emission controls	-	NEW MEASURE	XERIAS ALMYROU R. (EL0817R001101070N), CHOLOREMMA (EL0817R000901069N), All rivers and lakes of the Pineios RB	400.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
M08Σ0506 Investigative monitoring program on the quality status of groundwater and surface water bodies in the areas of existing landfills	Emission controls	Modification / Specialisation of measure WD08S090	Modification of basic measure M08B0703	PINEIOS P.4 (EL0816R000200005N), NEOCHORITIS P. (EL0816R000210143N), FARSSALIOTIS P.2 (EL0816R000206229H), SYSTIMATA PILIOU (EL0800170), SYSTIMA MAVROVOUNIOU-KARLAS (EL0800150)	0
M08Σ0801 Quality control of licensed water abstraction projects in groundwater bodies with high natural background values (chloride ions)	Control of abstractions	It is related to measure WD08S140 of the first RMP	M08Σ0801 Ongoing measure	EL0800150 (SYSTIMA MAVROVOUNIOU-KARLAS), EL0800160 (SYSTIMA ORTHRYOS), EL0800280 (SYSTIMA YDROFORION N ANCHIALOU-N IONIAS), EL0800330 (SYSTIMA EKBOLON PINEIOU) and EL0800110 (SYSTIMA LARISSAS-KARLAS, in the southern part)	10.000
M08Σ0802 Control of artesian wells	Control of abstractions	It is related to measure WD08S130 of the first RMP	M08Σ0802 Ongoing measure	All WB	0
M08Σ0803 Implementation of a water flow metering program in SWB with high abstraction pressure assessment	Control of abstractions	-	NEW MEASURE	TECHNITI LIMNI ARGYROPOULIOU (EL0816L000000001H), PINEIOS P. 2 (EL0816R000200003N), PINEIOS P. 3 (EL0816R000200004N), PINEIOS P. 4 (EL0816R000200005N), PINEIOS P. 5	600.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
				(EL0816R000200015H), PINEIOS P. 6 (EL0816R000200017H), PINEIOS P. 8 (EL0816R000200020N), PINEIOS P. 9 (EL0816R000200021N), PINEIOS P. 10 (EL0816R000200022N), PINEIOS P. 1 (EL0816R000201002N), KOUSMPASANIOTIKO R. 2 (EL0816R000204019N), ENIPEUS P. 1 (EL0816R000206023H), ENIPEUS P.2 (EL0816R000206036N), ENIPEUS P. 3 (EL0816R000206037N), KALENTZIS P. 1 (EL0816R000206124H), KALENTZIS P. 2 (EL0816R000206125N), SOFADITIS P. 1 (EL0816R000206226N), FARSALIOTIS P. 1 (EL0816R000206227H), MAKRYREMMA (EL0816R000206228N), FARSALIOTIS P. 2 (EL0816R000206229H),	

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
				SOFADITIS P. 2 (EL0816R000206230N), SOFADITIS P. 3 (EL0816R000206231H), TAFROS XYNIADAS (EL0816R000206235A), TAFROS XYNIADAS (EL0816RL00206201H), CHOLOREMMA (EL0817R000901069N)	
M08Σ0804 Organisation and implementation of a groundwater level monitoring program (rebuilding of the old monitoring network of the Water Directorate of Thessalia)	Control of abstractions	-	NEW MEASURE	EL0800020 (SYSTIMA PALIOSAMARINAS-VOULAS), EL0800030 (SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS), EL0800060 (SYSTIMA POTAMIAS), EL0800070 (SYSTIMA DAMASIOU-TITANOU), EL0800080 (SYSTIMA FYLLIIOU-ORFANON), EL0800100 (SYSTIMA EKKARAS-VELESIOTON), EL0800110 (SYSTIMA LARISSAS-KARLAS), EL0800130 (SYSTIMA TAOUSANIS-KALOU NEROU), EL0800140 (SYSTIMA ALMYROU), EL0800180 (SYSTIMA NARTHAKIOU-VRYSION), EL0800220 (SYSTIMA KONOU TITARISIOU), EL0800230 (SYSTIMA KONOU PINEIOU-PORTAIKOU-PAMISOU), EL0800260 (SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU)	350.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
M08Σ0805 Organisation and implementation of a qualitative and quantitative monitoring program in the SYSTIMA EKBOLON PINEIOU (EL0800330) and the qualitative monitoring of the PINEIOS P. 1 (EL0816R000201002N)	Control of abstractions	-	NEW MEASURE	SYSTIMA EKBOLON PINEIOU (EL0800330), PINEIOS P. 1 (EL0816R000201002N)	120.000
M08Σ0806 Restrictions and conditions for the construction of new water abstraction projects in the SYSTIMA EKBOLON PINEIOU (EL0800330)	Control of abstractions	-	NEW MEASURE	SYSTIMA EKBOLON PINEIOU (EL0800330)	0
M08Σ0807 Restrictions and conditions for the construction of new water abstraction projects in the SYSTIMA ORTHRYOS (EL0800160} and the SYSTIMA YDROFORION N ANCHIALOU-N IONIAS (EL0800280)	Control of abstractions	-	NEW MEASURE	SYSTIMA ORTHRYOS (EL0800160), SYSTIMA YDROFORION N ANCHIALOU-N IONIAS (EL0800280)	0
M08Σ0808 Specific arrangements for the protection of the quantitative status of the GWB	Control of abstractions	-	NEW MEASURE	All WB	0
M08Σ0901 Water management study for the T. L. Tavropos	Demand management measures	-	M08Σ0901 Ongoing measure	EL0415RL00212001H (TECHNITI LIMNI TAVROPOU)	150.000
M08Σ1001 Preparation of reuse of wastewater treatment studies for all existing tertiary treatment waste water treatment plants	Efficiency and re-use measures	Modification / Specialisation of measure WD08B030	M08Σ1001 Ongoing measure	All WB	60.000
M08Σ1101	Construction projects	It is related to	M08Σ1101	SYSTIMA FYLLIIOU-ORFANON	8.250.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
Kaklitzorema Dam, Regional Unit of Larissa, at the location of Dilofos.		measure WD08S240 (It is part of the "on track" projects of the 1st RBMP)	Ongoing measure *Funding by Ant. Tritsis program	(EL0800080), SYSTIMA YDROFORION ANO ROU ENIPEA (EL0800290), SYSTIMA TAOUSANIS-KALOU NEROU (EL0800130), SYSTIMA NARTHAKIOU-VRYSION (EL0800180), SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS (EL0800030)	
M08Σ1102 Narthaki "Loutziakorema" Dam, Regional Unit of Larissa.	Construction projects	It is related to measure WD08S250 (It is part of the "on track" projects of the 1st RBMP)	M08Σ1102 Ongoing measure * Funding by Ant. Tritsis	SYSTIMA FYLLIIOU-ORFANON (EL0800080), SYSTIMA YDROFORION ANO ROU ENIPEA (EL0800290), SYSTIMA TAOUSANIS-KALOU NEROU (EL0800130), SYSTIMA NARTHAKIOU-VRYSION (EL0800180), SYSTIMA PEDIADAS NOTIODYTIKIS THESSALIAS (EL0800030)	6.024.193
M08Σ1103 Delerion Dam, Regional Unit of Larissa.	Construction projects	It is related to measure WD08S260 (It is part of the "on track" projects of the 1st RBMP)	M08Σ1103 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	21.200.000
M08Σ1106 Agioneri Dam, Regional Unit of Larissa.	Construction projects	It is related to measure WD08S280 (It is part of the " on track " projects of	M08Σ1106 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage	90.000.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
		the 1st RBMP)		projects * (see reference at the end of the table)	
M08Σ1108 Pyli Dam, Regional Unit of Trikala	Construction projects	It is related to the measure WD08S400 of the first RBMP	M08Σ1108 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	105.000.000
M08Σ1109 Kalouda Dam	Construction projects	It is related to the measure WD08S400 of the first RBMP	M08Σ1109 Ongoing measure	SYSTIMA DAMASIOU-TITANOU (EL0800070), SYSTIMA TAOUSANIS-KALOU NEROU (EL0800130), SYSTIMA KONOU TITARISIOU (EL0800220)	20.000.000
M08Σ1110 Mouzaki Low water saving Dam	Construction projects	It is related to the measure WD08S400 of the first RBMP	M08Σ1110 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	39.000.000
M08Σ1111 Enipeas dam (Paleoderli) and irrigation network	Construction projects	It is related to the measure WD08S400 of the first RBMP	M08Σ1111 Ongoing measure (title modification) *Inclusion as PPP	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	243.100.000
M08Σ1112 Neochoritis Dam, Regional Unit of Trikala	Construction projects	It is related to the measure	M08Σ1112 Ongoing	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that	45.000.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
		WD08S400 of the first RBMP	measure * Included in PPP	are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	
M08Σ1113 Kalo Nero and Agios Antonios Dams	Construction projects	-	M08Σ1113 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	20.000.000
MΣ081114 Livadotopos - Pournari Ambelakia Dam	Construction projects	-	M08Σ1114 Ongoing measure *Included - RDP 2014-20 (Tendered)	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	10.449.493
MS081115 Agiokampos dam	Construction projects	It is related to measure WD08S190 of the first RBMP	M08Σ1115 Ongoing measure *Included in PAD 2014-20 (Tendered)	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	19.197.000
MΣ081116 Pumping water from Pineios river for the irrigation of the areas of Koilada (Municipality of Larissa) & Ag. Anargiron, (Municipality of Kileler).	Construction projects	-	M08Σ1116 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage	32.000.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
				projects * (see reference at the end of the table)	
MΣ081118 Belma Dam	Construction projects	-	M08Σ1118 Ongoing measure * Environmental Permit approval is pending.	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	16.000.000
MΣ081121 Kerasoula of Trikala Reservoir	Construction projects	-	M08Σ1121 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	62.000.000
MΣ081122 Titaniou Dam	Construction projects	-	M08Σ1122 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	30.000.000
M08Σ1123 Water saving projects in the lowland areas of the Pineios RB	Construction projects	It is related to the measure WD08S400 of the first RBMP	M08Σ1123 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	100.000.000
M08Σ1124	Construction projects	It is related to	M08Σ1124	Surface and Groundwater Bodies of	300.000.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
Construction of modern irrigation networks for the replacement of boreholes in Pineios RB		measure WD04S410 of the first RBMP	Ongoing measure	the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	
M08Σ1125 Renovation of pumping stations A1, A2, A3 and A4 of the Regional Irrigation Network Association drainage works of Thessaly	Construction projects	-	NEW MEASURE	Surface and Groundwater Bodies of the Pineios RB	9.000.000
M08Σ1126 Redesign of the Sykia reservoir at preliminary design level for the transfer of 250 million cubic meters from RB of Acheloos to the RB of Pineios and its licensing	Construction projects	It is related to the measure WD08S400 of the first RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	750.000
M08Σ1127 Implementation of the redesigned Sykia reservoir project	Construction projects	It is related to measure WD08S401 of the first RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	100.000.000
M08Σ1128 Completion of the Tunnel for Water Transfer of 250 hm³ from RB of Acheloos to the RB of Pineios	Construction projects	It is related to measure WD08S402 of the first RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end	

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
				of the table)	
M08Σ1129 Design and Construction of irrigation networks for the replacement of boreholes in the RB of Pineios	Construction projects	It is related to measure WD08S403 of the first RBMP	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	120.000.000
M08Σ1301 Mitigation measures to improve continuity for the fish fauna in the river Sofaditis P. 3	Rehabilitation projects	-	NEW MEASURE	SOFADITIS P.3 (EL0816R000206231H)	0
M08Σ1302 Restoration measures for the techniti limni Argyropouliou	Rehabilitation projects	-	NEW MEASURE	TECHNITI LIMNI ARGYROPOULIOU (EL0816L000000001H)	100.000
M08Σ1401 Artificial Enrichment of the Karstic Limestone System of the Titarisios - Pineios River in the Tirnavos Area.	Artificial GWB enrichment	It is related to measure WD08S310 of the first RBMP	M08Σ1401 Ongoing measure	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	340.000
M08Σ1403 Study for the evaluation and technical design of projects and interventions for artificial enrichment in the area of Killeler - Halki - Platykambos - Nikaia Larissas	Artificial enrichment of the GIS	-	NEW MEASURE	Surface and Groundwater Bodies of the RBs of the RBD of Thessalia that are in chronic overexploitation status and are expected to benefit from the proposed water storage projects * (see reference at the end of the table)	614.250
M08Σ1501 Professional training of farmers for the	Educational measures	-	M08Σ1501 Ongoing	All WB	331.500

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
protection of water bodies			measure		
M08Σ1502 Informing and raising public awareness regarding water issues	Educational measures	-	M08Σ1502 Ongoing measure	All WB	100.000
M08Σ1503 Strengthening of environmental programs in Primary Education	Educational measures	-	M08Σ1503 Ongoing measure	All WB	100.000
M08Σ1601 Pilot measures for the implementation of precision agriculture to reduce water consumption	Research, development and demonstration projects	-	M08Σ1601 Ongoing measure	All WB	200.000
M08Σ1603 Design and implementation of a specific investigative monitoring program with the aim of collecting data for the provisional identification of water bodies downstream of dams as Heavily Modified Water Bodies	Research, development and demonstration projects	-	M08Σ1603 Ongoing measure	EL0816R000206231H (SOFADITIS P. 3)	180.000
M08Σ1605 Development of a network of hydrometric stations	Research, development and demonstration projects	-	NEW MEASURE	All WB	1.200.000
M08Σ1606 Regional Monitoring Program for SWB in the RBD of Thessalia with a low level of confidence in status assessment	Research, development and demonstration projects	-	NEW MEASURE	EL0816R000000163N (AMYROS P.), EL0816R000200003N (PINEIOS P. 2), EL0816R000200017H (PINEIOS P. 6), EL0816R000200021N (PINEIOS P. 9), EL0816R000200060N (ION P. 2), EL0816R000202013N (TITARISIOS P. 3), EL0816R000202108N (SMOLIOTIKO R.),	440.000 €

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
				EL0816R000202512N (TITARISIOS P. - PARAPOTAMOS LIANOPOTAMOS), EL0816R000204019N (KOUSMPASANIOTIKO R. 2), EL0816R000206036N (ENIPEUS P. 2), EL0816R000206227H (FARSALIOTIS P. 1), EL0816R000206230N (SOFADITIS P. 2), EL0816R000206231H (SOFADITIS P. 3), EL0816R000208041N (MEGA REMA 2), EL0816R000210047N (LITHAIOS P. 4), EL0816R000220057N (TRANO POTAMI), EL0816R000301061N (DERMPINAS R.), EL0817R000101065N (XIROLAKKAS R.), EL0817R000301066N (POURI R.), EL0817R000701068N (LACHANORREMA), EL0817R001501072N (XIROREMMA R.), EL0816L000000001H (TECHNITI LIMNI ARGYROPOULIOU)	
M08Σ1607 Evaluation of the impacts on the	Research, development and	-	NEW MEASURE	TECHNITI LIMNI ARGYROPOULIOU (EL0800030),	250.000

CODE - TITLE OF MEASURE	CATEGORY OF MEASURE	CORRELATION WITH 1st RBMP	CORRELATION WITH 1st UPDATE	WB CONCERNED	COST (€)
qualitative and quantitative status of the Groundwater Bodies in the RBD of Thessalia after the catastrophic floods of September 2023 (Daniel floods)	demonstration projects			SYSTIMA DAMASIOU-TITANOU (EL0800070), SYSTIMA FYLLIIOU-ORFANON (EL0800080), SYSTIMA LARISSAS-KARLAS (EL0800110), SYSTIMA TAOUSANIS-KALOU NEROU (EL0800130), SYSTIMA KONOU TITARISIOU (EL0800220), SYSTIMA KONOU PINEIOU-PORTAIKOU-PAMISOU (EL0800230), SYSTIMA EKBOLON PINEIOU (EL0800330), SYSTIMA YDROFORION MAKRYCHORIOU-SYKOURIOU (EL0800260)	

10 NEXT STEPS

10.1 Difficulties encountered in the preparation of the 2nd Update

The preparation of the Management Plan, as a whole, was a demanding task, multidimensional and complex, with the main limitation being the lack of information regarding both the results of the monitoring program implemented in the National Monitoring Network and the non-implementation of measures of the 1st Update concerning the implementation of investigative monitoring programs.

Quantitative data of different water uses, with the exception of household water use, still have deficiencies or difficulties in their accurate calculation in the preparation of the 2nd Update.

Apart from the above, the usual problems that occur both at national level and at the level of the River Basin District of Thessalia were the following:

- Restrictions on the recording of pollutant loads discharged by industry and the anti-pollution technologies applied.
- Continuation of over-abstraction of groundwater and surface water resources to meet irrigation needs.
- Restrictions on recording abstractions for irrigation.
- Difficulties in the completeness of data collection that would complement and document to a greater extent, issues considered under the requirements of the Directive such as pressure data.
- Lack in the correlation between geospatial data with point sources of pollution.
- Inadequately staffed competent departments that are required to implement the Management Plans, both at the level of decentralised administration and at the regional level (Water Directorates, Water Management Departments etc.). The Water Directorate of Thessaly makes great efforts to cope with demands that often exceed the reasonable limits of its scientific and technical staff.
- Incomplete records of water cost and billing, non-adherence to relevant accounting standards in some MEWSS or local authorities.
- No distinction between the economic elements of water supply and sewerage services, making it impossible to differentiate between the two water services in the economic analysis.
- Limited access of the relevant authorities to Community financial resources for the implementation of measures included in the respective programs of basic and supplementary measures.

10.2 Next steps - Implementation of the Management Plan

The objective of the Management Plan is to prevent further deterioration, protect and improve the status of inland surface, transitional, coastal and groundwater bodies, as well as the terrestrial ecosystems and wetlands directly dependent on them. To achieve this objective requires the implementation of the Program of Basic and Supplementary Measures.

The Program of Measures has been designed in such a way that the priority of each intervention is clearly indicated according to its cost, its effectiveness, the importance of the water system to which it applies and the necessary time to prepare it.

All elements of the Program of Measures are important, but some planning and prioritisation is required to enable the monitoring of the progress and to identify where corrective action is needed when deviations from targets are identified.

In the following, some main axes are proposed that constitute a basic framework for the organisation of the Action Plan, which can be enriched and eventually shaped according to the views of the competent services, in order to better implement the Management Plan:

- **Monitoring/investigation programs for the quantitative and qualitative status of surface and groundwater bodies.** Bodies have been identified for which existing data are not sufficient for classification (with emphasis on water bodies with a low level of confidence, due to classification by grouping/expert judgement and high or moderate pressure intensity). Priority should therefore be given to measures related to the verification of the status of these systems.
- **Ensuring drinking water in sufficient quantity and satisfactory quality in accordance with the requirements of the relevant legislation**.
- **Water for agriculture.** Agriculture is an important activity for the local and national economy. Measures related to modernization of irrigation infrastructure, adoption of modern irrigation methods and adoption of good agricultural practices that reduce irrigation water abstractions and the impact of agriculture on diffuse and point source pollution and are an important priority for the Management Plan.
- **Protected areas.** The River Basin District includes several protected areas of particular importance.
- **Strengthening environmental inspections and audits.** The implementation of the Program of Measures requires wider and more intensive audits of water abstractions and pollution from point sources.
- **Other Measures in accordance with the Program of Measures.**

Further critical issues that determine the degree of implementation of the Program of Measures are the following:

- coordinating the stakeholders involved in its implementation and ensuring channels of communication with other stakeholders.

- The evaluation of the results of the Monitoring Network of water bodies and its appropriate adaptation, where necessary, both to cover missing data and to rationalise it, so that during the process of implementing the program of measures it is possible to monitor the progress and impact of the measures on water status.

11 SUMMARY STATISTICS FOR THE RIVER BASIN DISTRICT OF THESSALIA (EL08)

The following Tables contain aggregated statistics for the River Basin District of Thessalia (EL08).

Table 11-1: Categories of Water body per RB in the RBD of Thessalia (EL08)

CATEGORIES OF WATER BODIES	RB of Pineios (EL0816)	RB of Rematon Almyrou-Piliou (EL0817)	RBD TOTAL
River WB	64	8	72
Lake WB	3	0	3
Transitional WB	0	0	0
Coastal WB	2	5	7
TOTAL SURFACE WB	69	13	82
Groundwater bodies	28	6	34
TOTAL NUMBER OF WATER BODIES	**97**	**19**	**116**
Heavily modified and artificial water bodies (HMWB/AWB)	16		16
Water bodies linked to protected areas	95	19	114

Table 11-2:Types of surface water bodies per RB in the RBD of Thessalia (EL08)

TYPOLOGY OF SURFACE WATER BODIES	RB of Pineios (EL0816)	RB of Rematon Almyrou-Piliou (EL0817)	RBD TOTAL
River water bodies	**64**	**8**	**72**
Type R-M1	12	3	15
Type R-M2	34	2	36
Type R-M3	16	0	16
Type R-M4	0	0	0
Type R-M5	2	3	5
Reservoirs	**1**	**0**	**1**
Type L-M5/7	0	0	0
Type L-M8	1	0	1
Type GR-SR	0	0	0
Lake water bodies	**2**	**0**	**2**
Type GR-DNL	0	0	0
Type GR-SNL	1	0	1
Type GR-VSNL	0	0	0
Type GR-SR (T.L. Karlas)	1	0	1
Transitional water bodies	**0**	**0**	**0**
Type TW 1	0	0	0
Type TW 2	0	0	0
Coastal water bodies	**2**	**5**	**7**
Type IIIE	2	5	7

Table 11-3: Results of the assessment of the status of water bodies per RB in the River Basin District of Thessalia (EL08)

STATUS/ POTENTIAL			RB of Pineios (EL0816)				RB of Rematon Almyrou-Piliou (EL0817)				RBD TOTAL			
			Number	% Number	Length (km)	% Length	Number	% Number	Length (km)	% Length	Number	% Number	Length (km)	% Length
RIVER WATER BODIES														
TOTAL NUMBER OF RIVER WB	ECOLOGICAL	High												
		Good/Good and Above EP	16	25,00%	256,81	20,20%	2	25,00%	17,86	15,42%	18	25,00%	274,67	19,80%
		Moderate/Lower than Good EP	31	48,44%	599,50	47,14%	4	50,00%	55,51	47,92%	35	48,61%	655,01	47,21%
		Poor	13	20,31%	315,56	24,82%	2	25,00%	42,47	36,67%	15	20,83%	358,03	25,80%
		Bad	4	6,25%	99,77	7,85%					4	5,56%	99,77	7,19%
		Unknown												
	CHEMICAL	Good	43	67,19%	859,18	67,57%	5	62,50%	70,82	61,13%	48	66,67%	930,00	67,03%
		Failing to achieve good	21	32,81%	412,45	32,43%	3	37,50%	45,03	38,87%	24	33,33%	457,47	32,97%
		Unknown												

STATUS/ POTENTIAL			RB of Pineios (EL0816)				RB of Rematon Almyrou-Piliou (EL0817)				RBD TOTAL			
			Number	% Number	Area (km²)	% Length	Number	% Number	Area (km²)	% Length	Number	% Number	Area (km²)	% Length
LAKE WATER BODIES														
TOTAL NUMBER OF LAKE WB	ECOLOGICAL	High												
		Good/Good and Above EP												
		Moderate/Lower than Good EP	2	100,00%	35,42	100,00%					2	100,00%	35,42	100,00%
		Poor												
		Bad												
		Unknown												
	CHEMICAL	Good	2	100,00%	35,42	100,00%					2	100,00%	35,42	100,00%
		Failing to achieve good												
		Unknown												

STATUS/ POTENTIAL			RB of Pineios (EL0816)				RB of Rematon Almyrou-Piliou (EL0817)				RBD TOTAL			
			Number	% Number	Area (km²)	% Length	Number	% Number	Area (km²)	% Length	Number	% Number	Area (km²)	% Length
RESERVOIRS														
TOTAL NUMBER OF RESERVOIRS	ECOLOGICAL	High	1	100,00%	9,92	100,00%					1	100,00%	9,92	100,00%
		Good/Good and Above EP												
		Moderate/Lower than Good EP												
		Poor												
		Bad												
		Unknown												
	CHEMICA	Good	1	100,00%	9,92	100,00%					1	100,00%	9,92	100,00%
		Failing to achieve good												
		Unknown	1	100,00%	9,92	100,00%					1	100,00%	9,92	100,00%

STATUS/ POTENTIAL			RB of Pineios (EL0816)				RB of Rematon Almyrou-Piliou (EL0817)				RBD TOTAL			
			Number	% Number	Area (km²)	% Length	Number	% Number	Area (km²)	% Length	Number	% Number	Area (km²)	% Length
COASTAL WATER BODIES														
TOTAL NUMBER OF COASTAL WB	ECOLOGICAL	High												
		Good/Good and Above EP	2	100,00%	48,09	100,00%	5	100,00%	895,30	100,00%	7	100,00%	943,39	100,00%
		Moderate/Lower than Good EP												
		Poor												
		Bad												
		Unknown												
	CHEMICAL	Good					2	40,00%	627,32	70,07%	2	28,57%	627,32	66,50%
		Failing to achieve good	2	100,00%	48,09	100,00%	3	60,00%	267,98	29,93%	5	71,43%	316,07	33,50%
		Unknown												

STATUS/ POTENTIAL			RB of Pineios (EL0816)				RB of Rematon Almyrou-Piliou (EL0817)				RBD TOTAL			
			Number	% Number	Area (km²)	% Area	Number	% Number	Area (km²)	% Area	Number	% Number	Area (km²)	% Area
GROUNDWATER BODIES														
TOTAL NUMBER OF GROUNDWATER BODIES	QUALITY	Good	26	92,86%	8.399,81	79,36%	5	83,33%	1850,92	87,33%	31	91,18%	10.250,73	80,69%
		Bad	2	7,14%	2.183,98	20,64%	1	16,67%	268,55	12,67%	3	8,82%	2.452,53	19,31%
	QUANTITATIVE	Good	19	67,86%	7.074,29	66,84%	5	83,33%	1850,92	87,33%	24	70,59%	8.925,21	70,26%
		Bad	9	32,14%	3.509,50	33,16%	1	16,67%	268,55	12,67%	10	29,41%	3.778,05	29,74%

ANNEX I: TABLE OF MEASURES TO ACHIEVE GEP INCLUDED IN BASIC MEASURE M04B0907

Affected HMWB	GEP measures
SOFADITIS P. 3 (EL0816R000206231H)	Improve upstream continuity for biota (e.g. ramp, fish pass, by-pass channel, fish lift)
	Improve downstream continuity for biota (e.g. fish friendly turbines, fish screens)
	Catch, transport and release of fish
	Provide additional flow/ minimum flow components (e.g. low flow, base flow, fish flow)
	Prohibition of removing material from the rest of the riverbed downstream of the dam | Prohibition of obstruction of sediment transport in tributaries that confluence downstream of the dam
PINEIOS P. 5 (EL0816R000200015H)	Provide additional flow/ minimum flow components (e.g. low flow, base flow, fish flow)
	Prohibition of removing material from the rest of the riverbed downstream of the dam | Prohibition of obstruction of sediment transport in tributaries that confluence downstream of the dam
	Ecologically optimised conservation practices including sediment and vegetation management
	Seasonal or tidal restrictions on activity (e.g. maintenance works outside the breeding season)
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
	Development of riparian vegetation (e.g. tree planting)
LITHAIOS P. 2 (EL0816R000210045H)	Improvement/development of key habitats (e.g. gravel bed/creation of ripples, provision of shelter)
	Ecologically optimised conservation practices including sediment and vegetation management
	Seasonal or tidal restrictions on activity (e.g. maintenance works outside the breeding season)
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
PINEIOS P. 6 (EL0816R000200017H)	Improvement/development of key habitats (e.g. gravel bed/creation of ripples, provision of shelter)
	Ecologically optimised conservation practices including sediment and vegetation management
	Seasonal or tidal restrictions on activity (e.g. maintenance works outside the breeding season)
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
KOUSMPASANIOTIKO R. 1 (EL0816R000204018H)	Improvement/development of key habitats (e.g. gravel bed/creation of ripples, provision of shelter)
	Ecologically optimised conservation practices including sediment and vegetation management
	Seasonal or tidal restrictions on activity (e.g. maintenance works outside the breeding season)
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
KALENTZIS P. 1 (EL0816R000206124H)	Improvement/development of key habitats (e.g. gravel bed/creation of ripples, provision of shelter)
	Ecologically optimised conservation practices including sediment and vegetation management
	Seasonal or tidal restrictions on activity (e.g. maintenance works outside the breeding season)

Affected HMWB	GEP measures
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
ENIPEUS P. 1 (EL0816R000206023H)	Provide additional flow/ minimum flow components (e.g. low flow, base flow, fish flow)
	Improvement/development of key habitats (e.g. gravel bed/creation of ripples, provision of shelter)
	Ecologically optimised conservation practices including sediment and vegetation management
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
	Development of riparian vegetation (e.g. tree planting)
FARSALIOTIS P. 1 (EL0816R000206227H)	Provide additional flow/ minimum flow components (e.g. low flow, base flow, fish flow)
	Improvement/development of key habitats (e.g. gravel bed/creation of ripples, provision of shelter)
	Ecologically optimised conservation practices including sediment and vegetation management
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
	Development of riparian vegetation (e.g. tree planting)
FARSALIOTIS P. 2 (EL0816R000206229H)	Provide additional flow/ minimum flow components (e.g. low flow, base flow, fish flow)
	Improvement/development of key habitats (e.g. gravel bed/creation of ripples, provision of shelter)
	Ecologically optimised conservation practices including sediment and vegetation management
	Choice of methods (e.g. vegetation cutting for drainage) or equipment
	Development of riparian vegetation (e.g. tree planting)
TECHNITI LIMNI KARLAS (EL0816L000000002H)	Management of lake level fluctuations suitable for the conservation of riparian vegetation and fauna
	Connectivity to tributaries
TECHNITI LIMNI ARGYROPOULIOU (EL0816L000000001H)	Manage shore / shallow habitats
	Vegetation management
	Management of lake level fluctuations suitable for the maintenance of riparian vegetation and fauna
	Increase inflows
	Protection of lake areas, identified by buoys or poles
	Ecological optimised influx for pump storage