



Република Северна Македонија  
Министерство за животна средина  
и просторно планирање



Republika e Maqedonisë së Veriut  
Ministria e Mjedisit Jetësor  
dhe Planifikimit Hapësinor



# Existing and planned policy and strategic framework on water sector with Institutional arrangements and National progress

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Topic: "Using NEXUSES approaches to fight Climate Change focusing on Water & Waste" April 8, 2021, Skopje"

GENERAL FIGURES

LEGISLATION

INSTITUTIONAL Set up

PLANNING

MANAGEMENT

CHALLENGE

# General figures

## related water management

- surface waters: 477 km<sup>2</sup> (1,88 % of the territory)
- RNM about: 35 rivers, 53 natural and artificial lakes and 1.100 larger sources of water
- sufficient water resources but their distribution is quite unequal



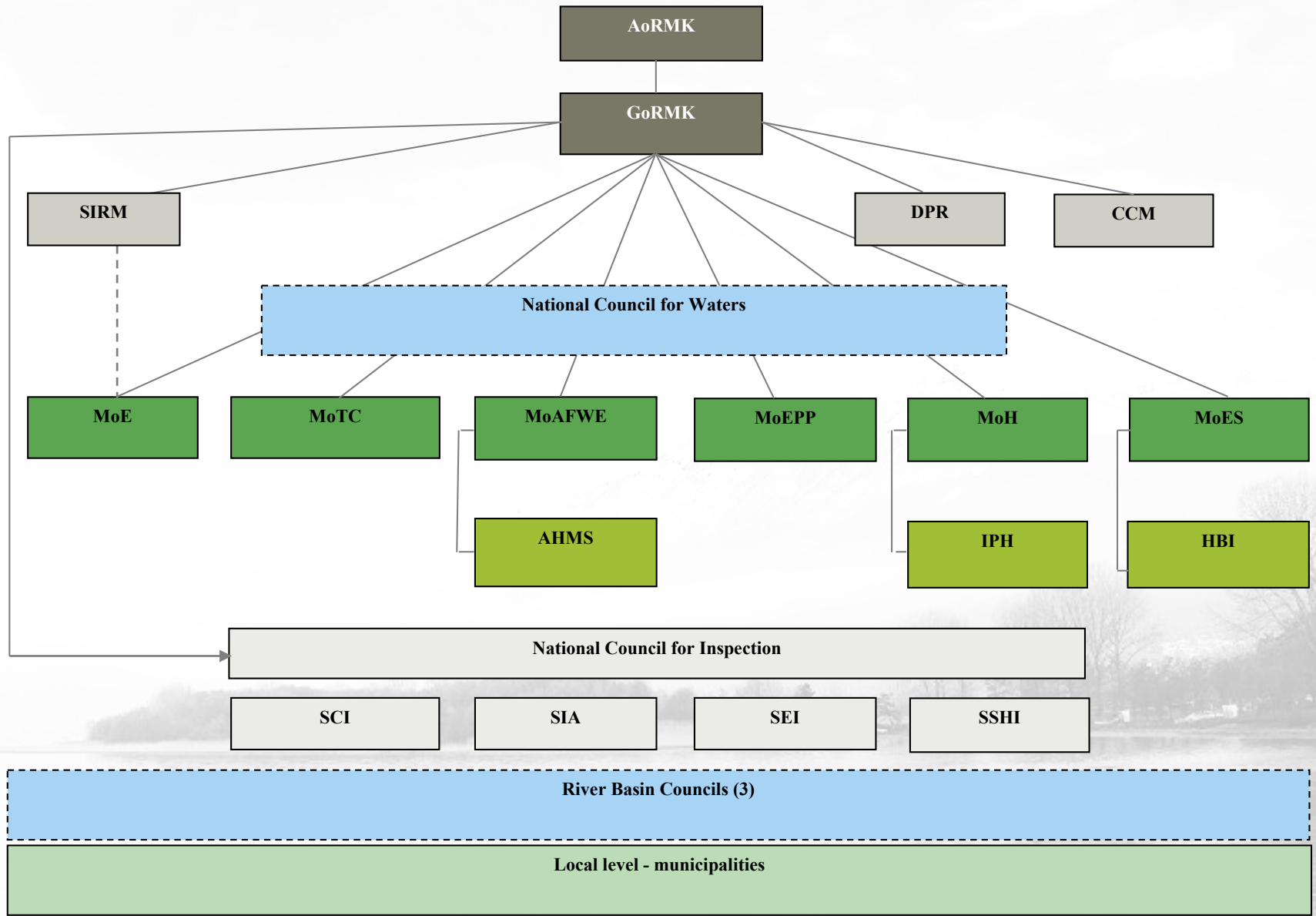
- Population, persons: 2,082,958
- Area, sq km: 25,220
- GDP per capita, US\$: 6,084
- precipitation around 619 mm/y
- precipitation volume around 15.9 billion cubic meters/y
- volume of surface water produced around 5.4 billion cubic meters.
- surface water entering the country at around 1 billion cubic meters per year
- surface water leaving the country around 6.4 billion cubic meters per year

# LEGISLATION

WATER QUALITY										
V	2000/60 /EC Water Framework								92%	and
M	91/271/EEC UWWT								100%	
E	98/83/EC - Drinking Water								100%	establishes a
f	91/676/EEC Nitrates						59%			agement + sets
C	2006/7/EC - Bathing Water		22%							agement and
V	80/68/EC Groundwater						50%			
F	2006/118/EC Groundwater		20%							Nature
F	2008/105/EC Water Quality Standards						63%			agement is
-										rafted
Ĉ	2007/60/EC Floods	14%								
	2006/44/EC Fish Water					44%				the obligations

from EU and its legislation in the field of water management

# Institutional set up



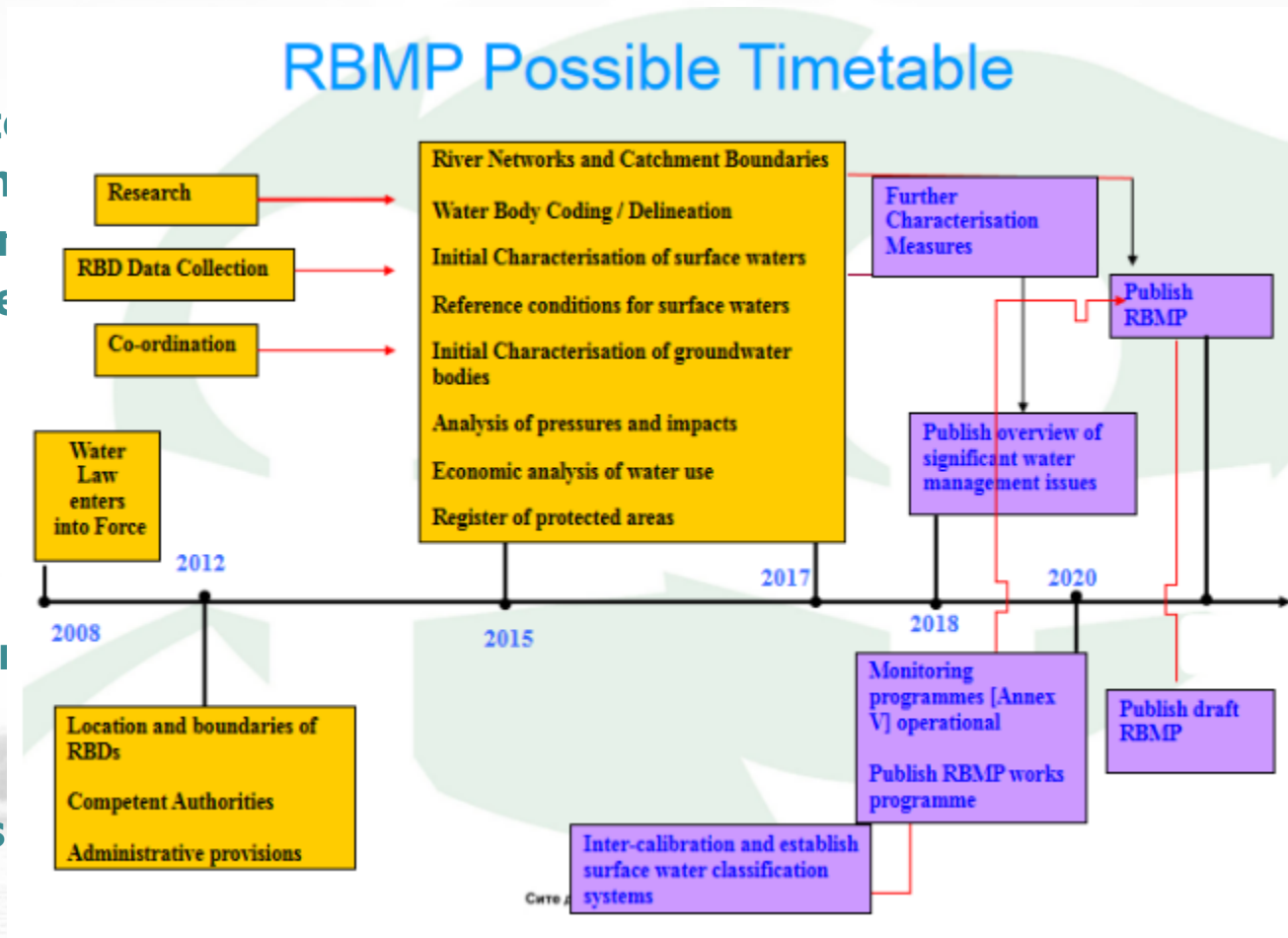
# PLANNING

The three basic documents for water management planning and development in Republic of N. Macedonia are:

- National Water Strategy,

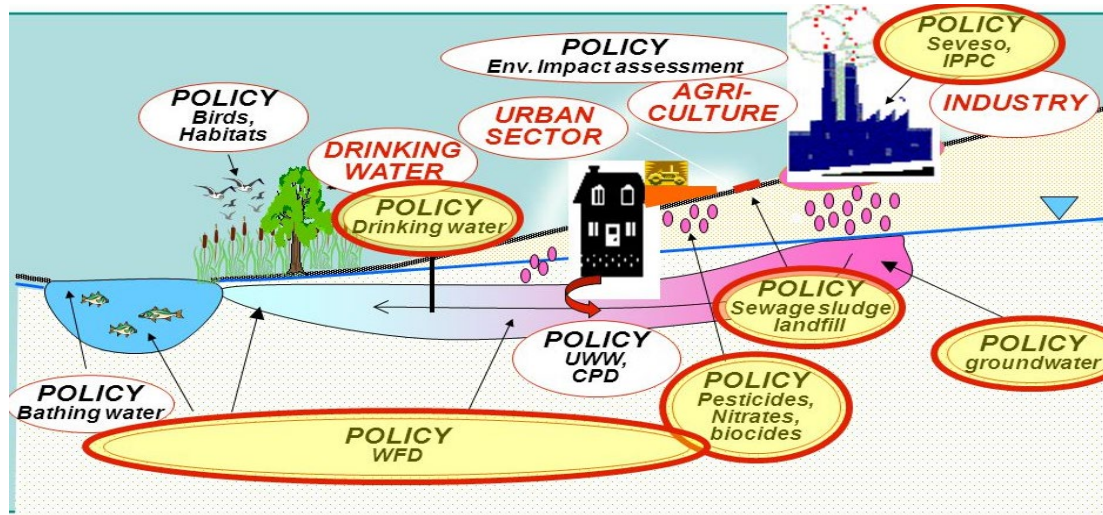
- Water Master plan

- River Basin Management Plans



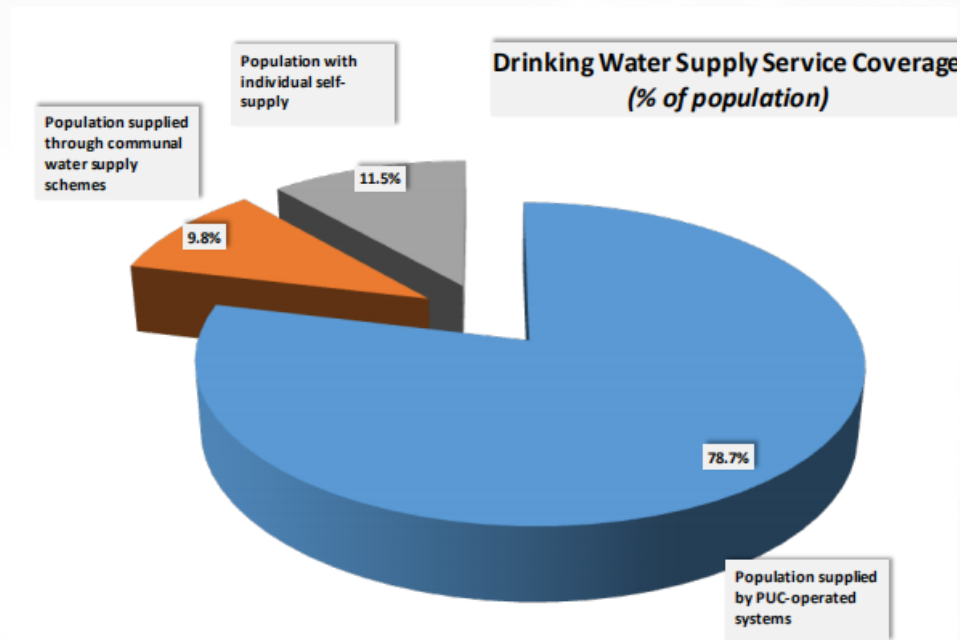
# MANAGEMENT

## water management



- consumption by humans (drinking water supply), irrigation, industrial, technological, economic needs and for other purposes,
- production of electricity and other power purposes,
- breeding of fish,
- navigation,
- sport, recreation, bathing, tourism and
- accumulation, capture, extraction, use, transfer and other purposes.

# WATER USE - DRINKING WATER SUPPLY



## VISION FOR THE FUTURE – OBJECTIVES IN THE FIELD OF DRINKING WATER SUPPLY

- Increasing the level of drinking water supply of the population.
- Implementation of economic price of water.
- Reducing water losses from public water supply systems.
- Satisfying the need for water.
- Increase safety procedures for public water supply WSSP



# WATER USE - AGRICULTURE WATER USE

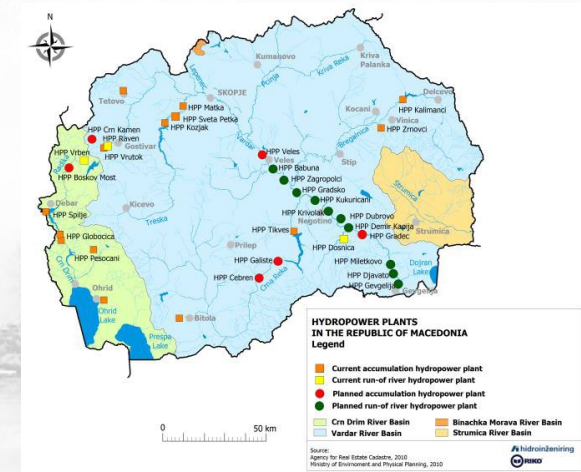
- Arable agricultural area approx. 667.000 ha
- Irrigation schemes could irrigate 60% of the area

## VISION FOR THE FUTURE – OBJECTIVES IN THE FIELD OF AGRICULTURAL WATER USE

- **Efficient water use** for irrigation purposes and **securing the necessary quantity of water** for irrigation purposes.

## WATER USE - ENERGY PRODUCTION

- Theoretical potential 8.863 GWh
- Technical potential 5.524 GWh
- 26,6% of technical potential is used.

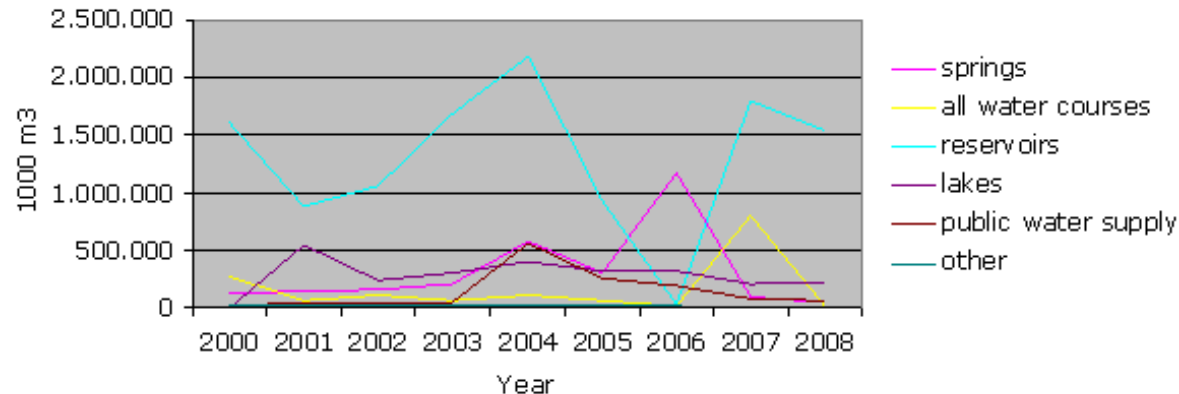


## VISION FOR THE FUTURE – OBJECTIVES IN THE FIELD OF ENERGY PRODUCTION

- **Construction of new HPPs**, according national planning acts and legislations

# WATER USE - INDUSTRY WATER USE AND WATER USED FOR PRODUCTION PURPOSES

- Main source: surface water
- 92% of the total intaken waters belong to surface water.
- 8% to public sewage, springs, groundwater



## VISION FOR THE FUTURE – OBJECTIVES IN THE FIELD OF INDUSTRY WATER USE

- **Ensure required quantity of cooling water in the industry.**
- **Encourage the introduction of water recirculation** in technological processes wherever possible.
- **Determine plans for exploitation and protection of water resources** used for production of water for market sale.

# RIVER TRAINING AND PROTECTION AGAINST HARMFUL EFFECTS OF WATER - RIVER TRAINING

- 23 large dams
- Total water storage capacity -1.85 billion m3
- 120 small dams for irrigation, water supply, supply in industry and fish-farming.



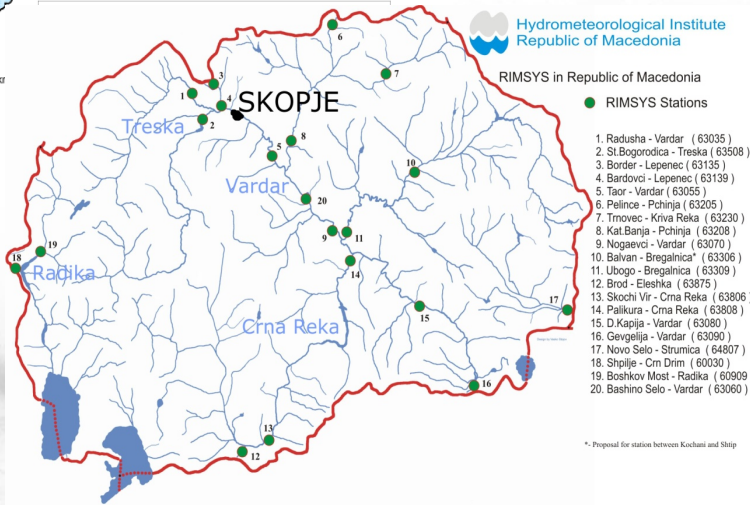
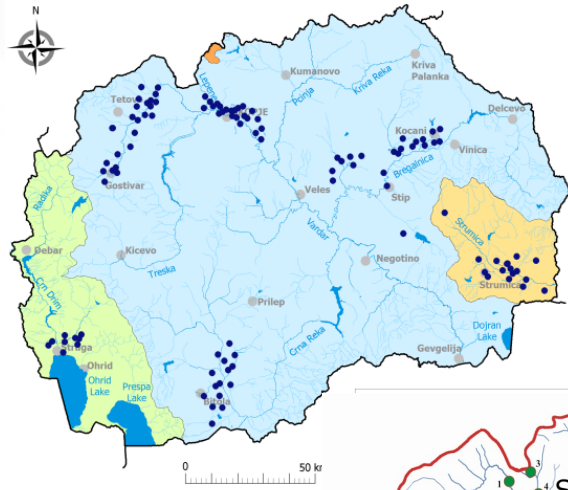
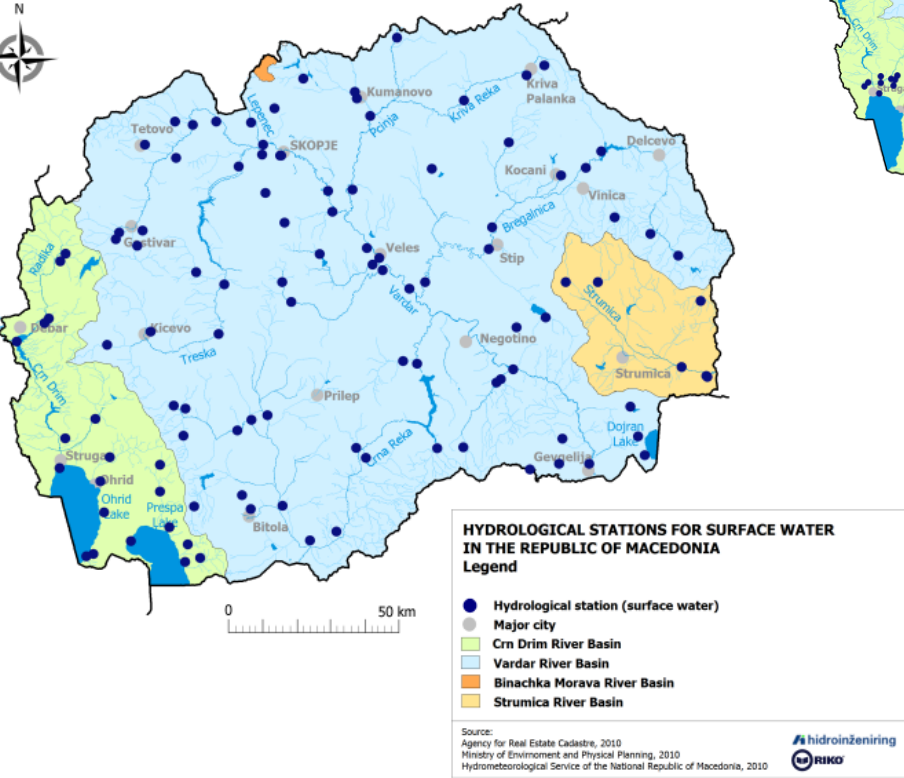
## VISION FOR THE FUTURE – OBJECTIVES IN THE FIELD OF RIVER TRAINING

- sustainable alteration of hydrologic regime
- sustainable sediment exploitation



# STATE OF SURFACE AND GROUNDWATER - WATER BALANCE

- Annual available surface water resources=6.372 billion m<sup>3</sup>
- 97 monitoring stations



# FINANCING SOURCES

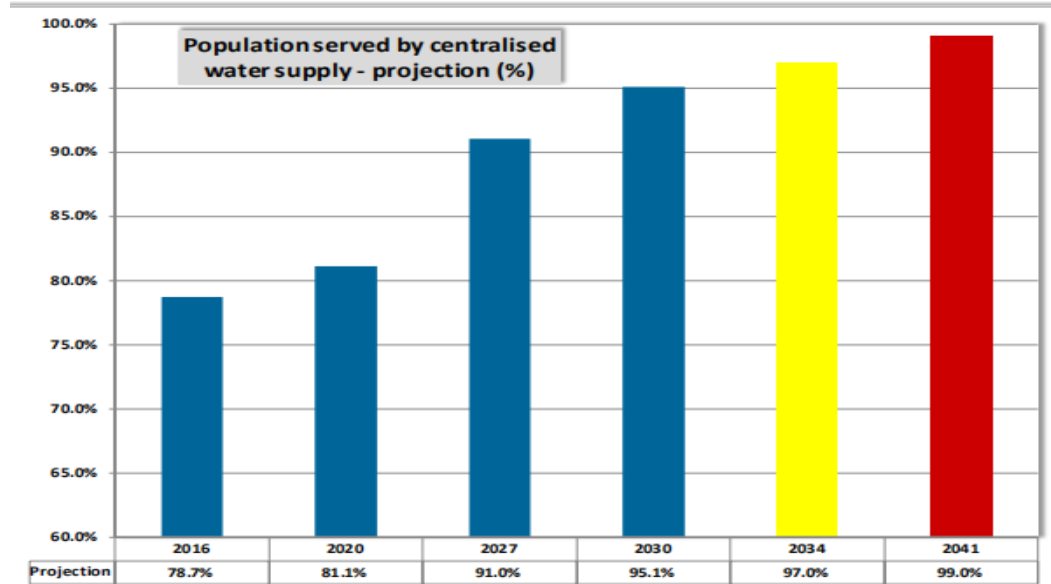
## **GOVERNMENTAL FUNDS:**

- ❑ preparation of projects
- ❑ ensure sufficient financing sources and efficient use

## **EUROPEAN FUNDS:**

- ❑ IPA funds
- ❑ Structural and Cohesion funds
- ❑ management of the EU funds should be coordinated and simplified
- ❑ Government promotion of the EU Funds in Macedonia.
- ❑ Full scale cooperation between all the interested parties in EU financing
- ❑ Non-formal education for the EU funding programmes

## investments needs [DWD](#)



VI.8 Water Distribution Upgrade – related to water quality				
Measure description	Units	Value	CAPEX (€)	Due Date
VI.8.1 Rehabilitation/replacement water supply networks - existing centralised systems	km	883	€ 85,954,236	2030
VI.8.2 Rehabilitation/replacement water supply networks - consolidation of communal/rural schemes	km	892	€ 58,193,239	2030
VI.8.3 New water supply network	km	291	€ 17,962,340	2030
VI.8.4 Pumping stations – rehabilitation	l/s	13,767	€ 5,425,809	2030
VI.8.5 Improvement of efficiency of system operation (implementation of GIS, introduction of DMS4, pressure management)	sum	-	€ 8,720,274	2030
VI.8.6 Monitoring and control system (SCADA) - short-term	sum	-	€ 7,272,000	2030
VI.8.7 Clear water storage tank - priority upgrade and extension				

VII Water Supply Measure (Project) - Other Components				
VII.1 Upgrade and extension of water supply system				
Measure Description	Units	Value	CAPEX (€)	Due Date
VII.1.1 Water quality monitoring - laboratory facilities				
VII.1.1 Water quality monitoring - laboratory facilities	l/s	900	€ 8,465,257	2041
VII.1.2 Laboratory facilities - sub-total				
VII.1.2 Rehabilitation/replacement of distribution mains and distribution network	km	747	€ 72,730,507	2041
VII.1.3 Contingencies for Directive-specific measures - NET				
VII.1.3 New mains and distribution networks	km	583	€ 38,005,008	2041
VII.1.4 Project preparation for DS measures	l/s	2,744	€ 2,692,007	2041
VII.1.4 Pumping stations - new				
VII.1.5 Construction supervision for DS measures	sum	-	€ 2,424,000	2041
VII.1.5 Monitoring and control system (SCADA) - long term				
VII.1.6 Water storage tanks - new	m <sup>3</sup>	46,686	€ 12,616,083	
VII.1.7 Other measures - sub-total			€ 128,467,606	
VII.1.8 Contingencies	10%		€ 12,846,761	
VII.1.9 Project preparation (investigations, studies, designs, tenders)	5%		€ 6,423,380	
VII.1.10 Construction supervision	5%		€ 6,423,380	
VII.1.11 TOTAL			€ 154,161,127	

Drinking Water Part I: 368 mEUR  
 Drinking Water Part II: 154 mEUR  
**Drinking Water Part: 522 mEUR**

investments needs [UWWTD](#)

Category	Type	mEUR
Waste Water Collection	New	340
Waste Water Treatment	New	376
<b>Total</b>		<b>716</b>

Category	Type	mEUR
Waste Water Collection	Replace (now)	307
Waste Water Treatment	Renovate (now)	~20
Waste Water Treatment	Replace by 2041	~180
		<b>507</b>

Total Capital Expenditure on Waste Water Infrastructure by end 2041:

**1.2 billion Euros**



Thank You