



Ministero dell'ambiente e della sicurezza energetica
Ministry of the environment and energy security



22nd International Conference of EURO-INBO

Implementation of EU Water Directive (WFD) at the level of national & transboundary basins

Water resources management at national scale

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(with the contributions of DG USSA and ISPRA, DISS – MASE)

21 May 2025 Paganini Congress, Parma





WATER POLICY AND PROGRESSES ON WATER (SDG)

Water policies are not in line with SDG 6 and its 2030 targets

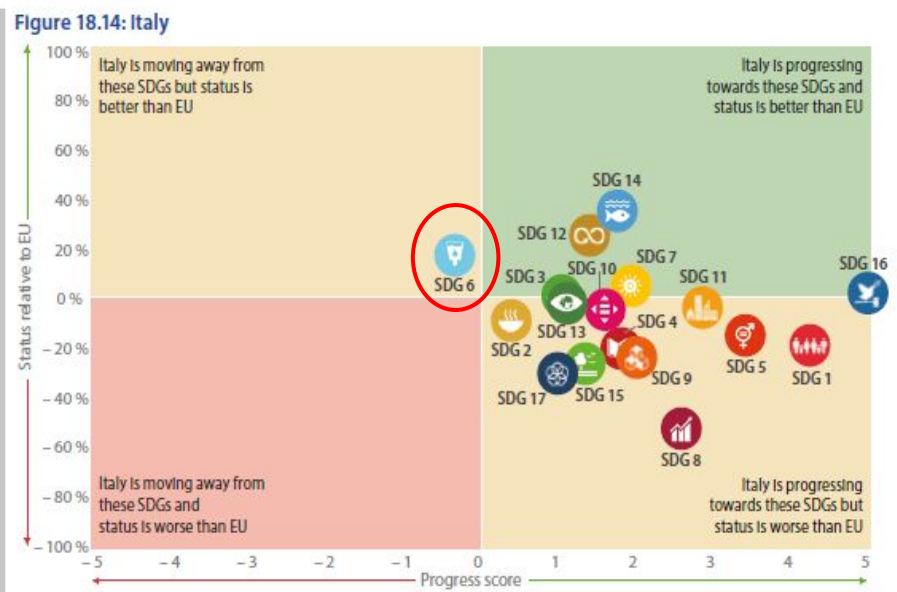


Tabella 6.1 - Elenco delle misure statistiche diffuse dall'Istat, tassonomia rispetto agli indicatori SDGs, variazioni rispetto all'anno precedente e a 10 anni prima e convergenza tra regioni

Rif. SDG	INDICATORE	Rispetto all'indicatore SDG	Valore	VARIAZIONI			CONVERGENZA TRA REGIONI rispetto a 10 anni prima
				Rispetto all'anno precedente	Rispetto a 10 anni prima		
6.1.1	Percentuale di popolazione che fruisce di servizi idrici di acqua potabile gestiti in modo sicuro						
	Acqua erogata pro capite (Istat, 2022, litri per abitante al giorno)	Di contesto nazionale	214	(a)	(b)	↔	
	Famiglie che non si fidano di bere l'acqua del rubinetto (Istat, 2023, valori percentuali)	Di contesto nazionale	29,8			↔	
	Irregolarità nella distribuzione dell'acqua (Istat, 2023, valori percentuali)	Di contesto nazionale	8,9			↔	
	Razionamento dell'erogazione dell'acqua per uso domestico per parte o tutto il territorio comunale (Istat, 2021, numero di Comuni)	Di contesto nazionale	15		(c)		
6.3.1	Percentuale di acque reflue civili e industriali trattate in modo sicuro						
	Trattamento delle acque reflue (Istat, 2015, valori percentuali)	Parziale	59,6	(d)	(e)	=	
	Acque reflue urbane con trattamento secondario o avanzato (Istat, 2020, N.)	Di contesto nazionale	7.877	(a)	(b)	↔	
	Copertura del servizio pubblico di fognatura (Istat, 2020, valori percentuali)	Di contesto nazionale	58,7	(a)			
6.3.2	Percentuale di corpi idrici con una buona qualità ambientale						
	Coste marine balneabili (Istat - Elaborazione su dati Ministero della salute, 2019, valori percentuali)	Parziale	65,5		(f)	↔	
	Percentuale di fiumi e laghi con stato di qualità chimica buono e di qualità ecologica elevato o buono (ISPRA, 2016-2021, valori percentuali)	Proxy	(*)				
	Percentuale di corpi idrici delle acque sotterranee con stato di qualità chimica (SCAS) buono (ISPRA, 2016-2021, valori percentuali)	Proxy	(*)				
	Percentuale di acque di transizione con stato di qualità ecologica elevato o buono e di qualità chimica buono (ISPRA, 2016-2021, valori percentuali)	Proxy	(*)				
	Percentuale di acque marine costiere con stato di qualità ecologica elevato o buono e di qualità chimica buono (ISPRA, 2016-2021, valori percentuali)	Proxy	(*)				
	Percentuale di corpi idrici che hanno raggiunto l'obiettivo di qualità ecologica (elevata o buona) sul totale dei corpi idrici delle acque superficiali (fiumi e laghi) (ISPRA, 2016-2021, valori percentuali)	Proxy	(*)				
6.4.1	Variazione dell'efficienza dell'uso della risorsa idrica nel tempo						
	Efficienza delle reti di distribuzione dell'acqua potabile (Istat, 2022, valori percentuali)	Proxy	57,6	(a)	(b)	↔	
6.4.2	Livello di stress idrico: prelievo di acqua dolce in proporzione alle risorse di acqua dolce disponibili						
	Livello di stress idrico: prelievo di acqua dolce in proporzione alle risorse di acqua dolce disponibili (Istat-ISPRA-FAO, 2019, valori percentuali)	Identico	37,1		(g)		
	Prelievi di acqua per uso potabile (Istat, 2022, milioni di m³)	Di contesto nazionale	9.132,5	(a)	(b)	=	
6.5.1	Grado di attuazione della gestione integrata delle risorse idriche						
	Grado di attuazione della gestione integrata delle risorse idriche (ISPRA, 2023, indice)	Identico	78,0	(a)	(b)		
6.5.2	Proporzione dell'area del bacino transfrontaliero con un accordo operativo per la cooperazione idrica						
	Quota percentuale dell'area del bacino transfrontaliero in cui è in atto un accordo operativo per la cooperazione in materia di risorse idriche (Elaborazione su dati Ministero dell'Ambiente e della Sicurezza Energetica, 2023, valori percentuali)	Identico	100,0		(h)		
6.6.1	Variazione nel tempo dell'estensione degli ecosistemi legati all'acqua						
	Zone umide di importanza internazionale (ISPRA, 2021, ettari)	Identico	79.826	(a)	(b)	=	
6.6.1	Assistenza ufficiale allo sviluppo per l'acqua e i servizi igienico-sanitari come parte di un piano di spesa coordinato dal governo						
	Aiuto Pubblico allo Sviluppo nei settori dell'acqua e sanificazione (Ministero degli Affari Esteri e della Cooperazione Internazionale, 2023, milioni di euro, prezzi correnti)	Identico	36,51		(i)		
Legenda							Note
		MIGLIORAMENTO		↔	CONVERGENZA		(a) Variazione calcolata sul 2020
		STABILITÀ		=	STABILITÀ		(b) Variazione calcolata sul 2012
		PEGGIORAMENTO		↔	DIVERGENZA		(c) Variazione calcolata sul 2014
							(d) Variazione calcolata sul 2005
							(e) Variazione calcolata sul 2018
							(f) Variazione calcolata sul 2013
							(g) Variazione calcolata sul 2015
							(h) Variazione calcolata sul 2017
							(*) Si rimanda alla tabella dati diffusa su www.istat.it

Source: ISTAT



NATIONAL MEASURES ON WATER MANAGEMENT AND PLANNING AT RBDA

2023 PNACC National Climate Change Adaptation Plan (MASE, December 2023)

2022 SEC National Strategy on Circular Economy (MASE Decree 29.06.2022): information campaign on water saving, rules for water reuse, sanctions for illegal water withdrawals, rules for strengthening District Authorities

2021-2026 NEXT Generation EU Italy (PNRR): Financing of water infrastructures and new regulations in the water sector (alignment of water concession fees, prioritization of interventions, measurement of irrigation consumption, sediment dredging, sanctions)

2023 Drought Decree DL n.39: National Control Room and Extraordinary Commissioner - Census of works and interventions requiring urgent implementation, selection of works to be implemented by the Commissioner. Approval of the list of urgent measures and regulations, of immediate and short implementation, structural and management, to combat water scarcity

Financing, management and monitoring of the 3th RBMPs e 2th FRMPs 2022-2027 - next WFD-FD plans

Decree environment 2024 n. 153: package of measures aimed at protecting the environment, rationalizing environmental assessment and authorization procedures, and carrying out remediation of contaminated sites and geological hazard.

PNISSI (art. 1 co. 516, L. 205/2017): Decree of the Ministry of Infrastructure (National plan for infrastructure and safety interventions in the water sector that provides a strategic water infrastructure master planning tool with a medium- to long-term vision built by adopting an analysis model based on four dimensions: economic-financial, environmental, social and institutional.

Several Decrees are ongoing in water sector (desalination, wastewater reuse, freshwater sediments management, PFAS, etc.)



RBDAs – ORGANIZATION and COMPETENCIES

7 River Basin Districts (RBDs) managed by the River District Basin Authorities (RBDAs).

The RBDAs have 6 different bodies identified by art. 63 of Legislative Decree 152/2006 and governed by the same law and by their own Statute:

- the **Permanent Institutional Conference**,
- the **General secretary**,
- the **Operational Conference**,
- the **Permanent District Observatories on water uses** (established by D.L. 39/2023),
- the **technical operational secretariat**,
- the **board of auditors**.

The RBDAs carry out planning activities at the river basin level and provide information on the health condition of rivers and water resources, and the objectives set for these areas. They identify timelines and measures for achieving the good water quality status and continuously update the knowledge framework about flood hazard and geomorphological instability.



National Geo-portal: Administrative boundaries of RBD



RBDAs – ACTIVITIES AND FINANCIAL RESOURCES

Some planning activities:

- **Mitigation of hydrogeological risk and coastal erosion** financed by Operational Plan for the Environment of the Development and Cohesion Fund (FSC) and a specific funding of 14 million for non-structural measures provided by Flood Risk Management Plans.
- **Three-year experimental program for the recovery of plastics in the rivers most affected by this pollution** financed by the resources of the Law 60/2022 (“**Legge SalvaMare**”), related to measures for the collection of floating waste in rivers, with an allocation of 2 million euros for each of the years 2022, 2023 and 2024.
- **4935 active measures included in the approved Flood Risk Management Plans** which need of 38.52 Billions euros.
- **Win-win measures**, particularly for hydraulic risk mitigation. If the interventions for hydrogeological risk mitigations are win-win measures, an additional score is foreseen in the selection procedure (divided in 5 phases) of the interventions to be carried out.
- **National plan for infrastructure and safety interventions in the water sector (PNIISSI - MIT) - Implementation plan 2025**: Dams and water interconnection, interventions for irrigation and drinking uses. 17 of the 66 fundend interventions included in the plan had been identified as priorities by the RBDAs. The funding of the 17 interventions is **254,815,242.01 €**.

RBDs	n. financed interventions
Eastern Alps	3
Po river	3
Central Appennines	2
Southern Appennines	2
Sardinia	1
Sicily	6



DROUGHT AND WATER EMERGENCY

Water severity levels



(https://www.isprambiente.gov.it/pre_meteo/idro/Osservatori/Archivio/Stato_sever_nazionale_pdf/SeverIdrica_20250502.pdf)

National plan for infrastructure and safety interventions in the water sector (PNISSI - MIT) - Implementation plan 2025: Dams and water interconnection interventions for irrigation and drinking uses

Intervention sectors	n. interventions	Amount financed €
Aqueduct	12	191.243.118,83
Dams	14	257.263.583,93
Adduction pipelines	23	261.864.854,74
Water diversion	17	244.393.803,17
Tot.	66	954.765.360,67

D.L. 39/2023/Law 68/2023 - Drought decree: specific measures against drought by increasing the resilience of water systems to climate change and reducing the dispersion of water resources.

The DL establishes governance rules:

- National ministerial control room for the water crisis;
- designation of the National Extraordinary Commissioner, for the adoption of urgent interventions related to the water scarcity;
- Permanent District Observatories on water uses as a body of the Basin Authorities.

The DL addresses also measures on:

- reuse of wastewater for irrigation purposes;
- desalination of seawater;
- construction, strengthening and adaptation of water infrastructures;
- to strengthen the sanctioning system for illegal water extraction and for failure to comply with the operation and maintenance of dams.



WATER EMERGENCY IN SICILY

Council of Ministers resolution 6/05/2024 (Official Journal no. 113 of 16/05/2024) “*Declaration of state of emergency in relation to the water deficit occurred in Sicily*”

Priority interventions identified: desalination plants in Trapani, Porto Empedocle and Gela

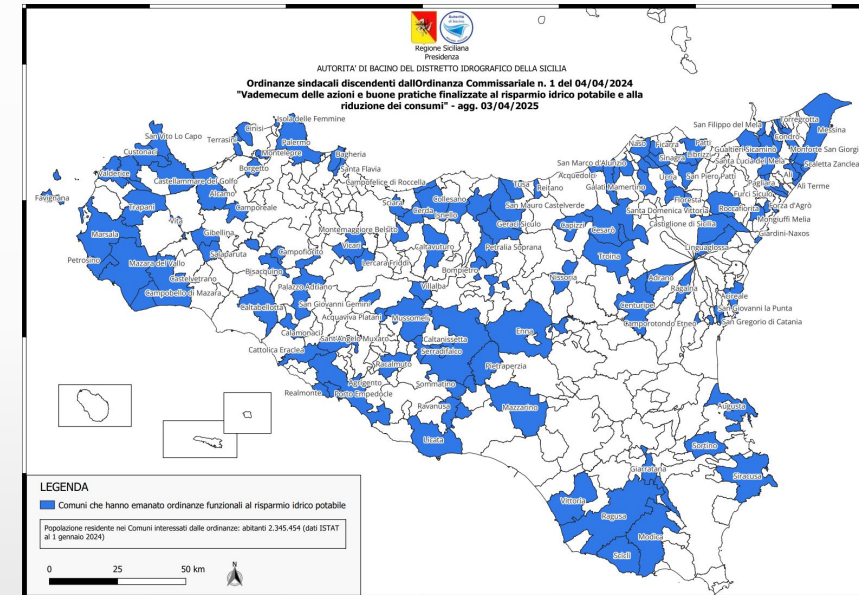
- Financing of desalination plants (C.D. no. 15 of 27/02/2025)
- Authorization for the construction and commissioning of the desalination plants of Gela (C.D. n. 17 of 03/07/2025), Porto Empedocle (C.D. n. 20 of 20/03/2025) and Trapani (C.D. n. 21 of 03/04/2025).

National plan for infrastructure and safety interventions in the water sector (PNISSI - MIT)

Implementation plan 2025: Dams and water interconnection interventions for irrigation and drinking uses



Ordinances of the mayors for water saving 2025



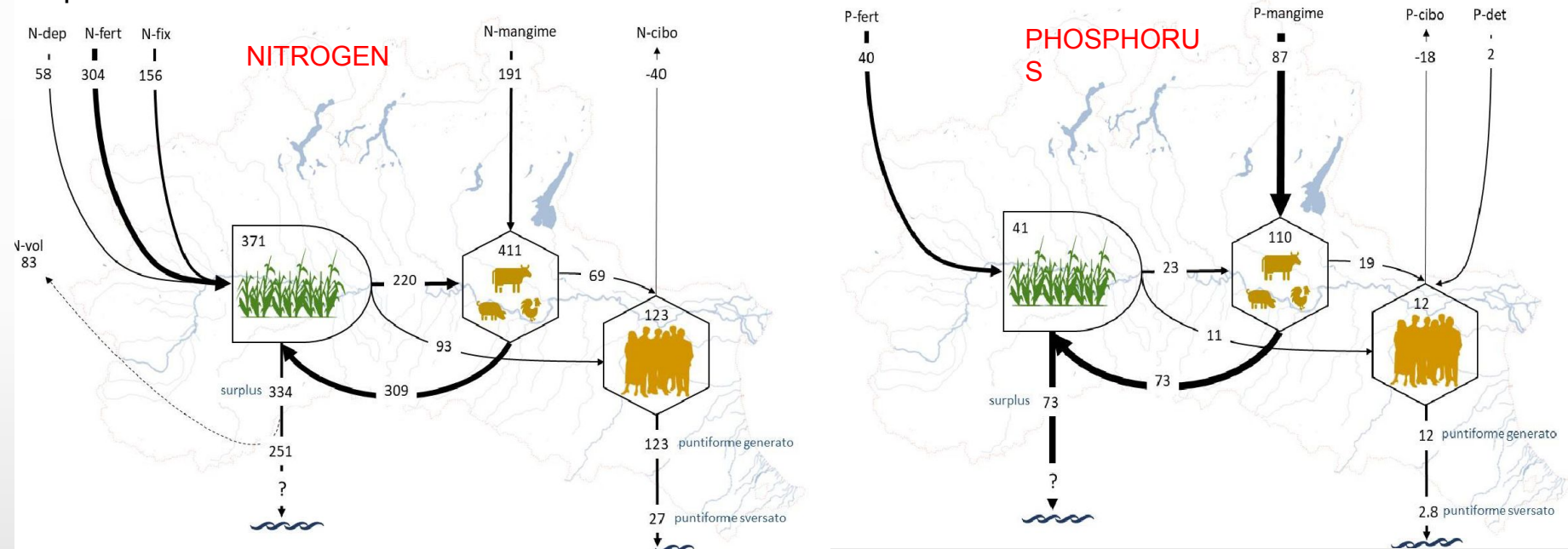
Other interventions

- Alternatives sources (wells) in compliance with the provisions of Legislative Decree 18/2023 (directive (UE) 2020/2184)
- Reduction of losses in water infrastructure
- Reduction and water supply shifts
- Tanker truck services for drinking water supply



COMBINING WATER POLICIES WFD – Nitrates action plans

Surface water eutrophication phenomena, agriculture and other impacts, groundwater status and synergies with the WFD
Adaptation measures related to the sustainable use of nutrients strengthened within a careful national and local planning in synergy between the implementation of the WFD and the Nitrates Directive



FONTE: STUDIO SULL'ORIGINE E LA DINAMICA DEI CARICHI INQUINANTI origine e dinamica dei carichi inquinanti trasportati dal bacino del fiume Po e dagli altri corsi d'acqua che sfociano nel mare Adriatico.

Main transfers of nitrogen and phosphorus between the agricultural, livestock, and civil sectors that contribute to the formation of the potential load in the Po River basin. All flows are in kt year-1 and refer to 2018

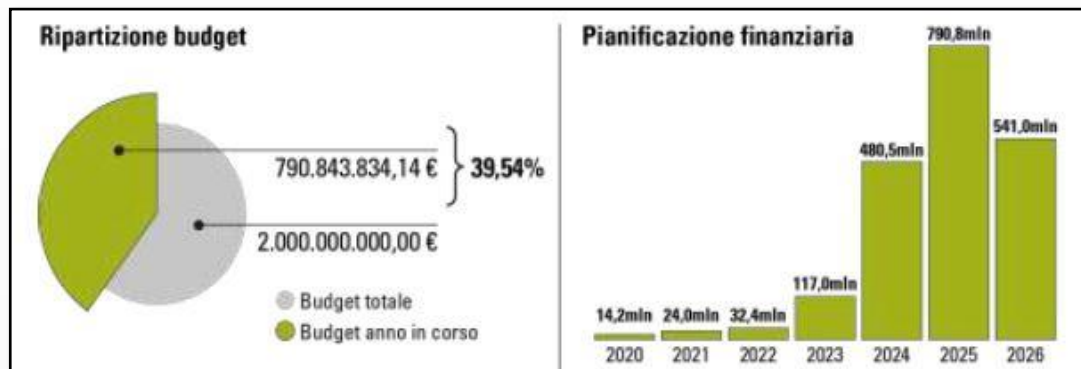
The data shows that the generated loads are of diffuse origin, involving the initial part of the cycle (fertilizers and feed imports) and not the final part (treatment plants). The conveyed load derives not only from current activities but also from past ones and from the interaction with hydrological characteristics

REGION	NITRATES ACTION PROGRAMMES
PIEMONTE	REGIONAL REGULATION N. 12/2023
LOMBARDIA	REGIONAL COUNCIL RESOLUTION N° XII / 3635/2024
VENETO	REGIONAL COUNCIL RESOLUTION N. 813/2021 REGIONAL COUNCIL RESOLUTION N. 837/2023
EMILIA ROMAGNA	REGIONAL REGULATION N. 2/2024
LIGURIA	REGIONAL COUNCIL RESOLUTION N. 159//2024.
MARCHE	REGIONAL COUNCIL RESOLUTION N. 740/2023
PA TRENTO	RESOLUTION OF THE PROVINCIAL COUNCIL 2017 /2022

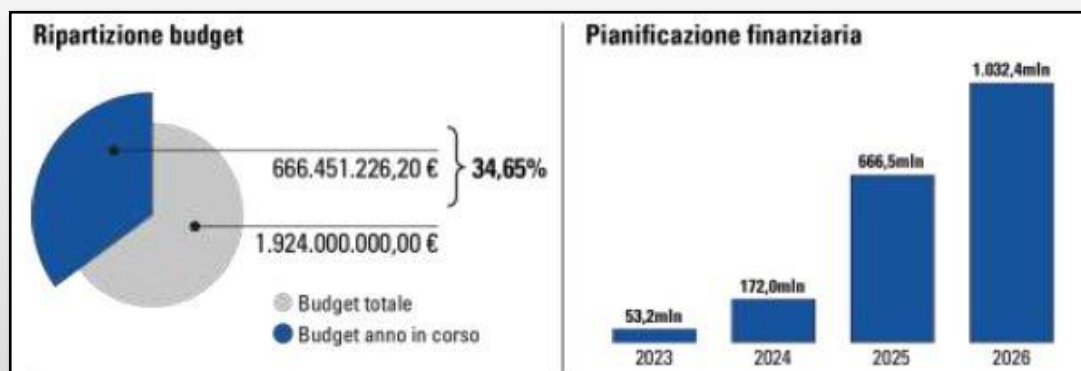


NEXT GENERATION EU – WATER INVESTMENTS MEASURE M2C4

M2C4 - Investment 4.1 *Primary water infrastructures*

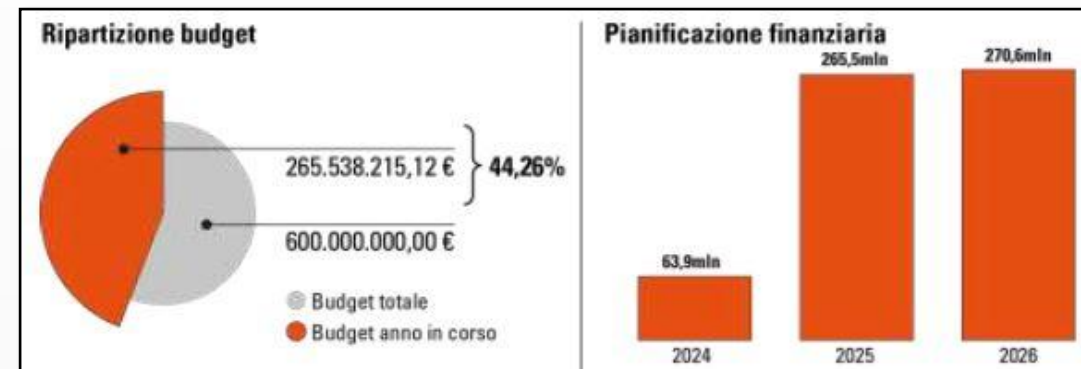


M2C4 - Investment 4.2 *Water supply loss reduction interventions*



(Source: Regis, March 2025
Camera dei Deputati – Servizio Studi)

M2C4 - Investment 4.4 *Sewerage and wastewater treatment*



The amount rises to EUR 5.4 billion considering also the resources of the M2C4-I4.3 (MASAF) line, which allocates EUR 880 million to the resilience of the irrigation systems.

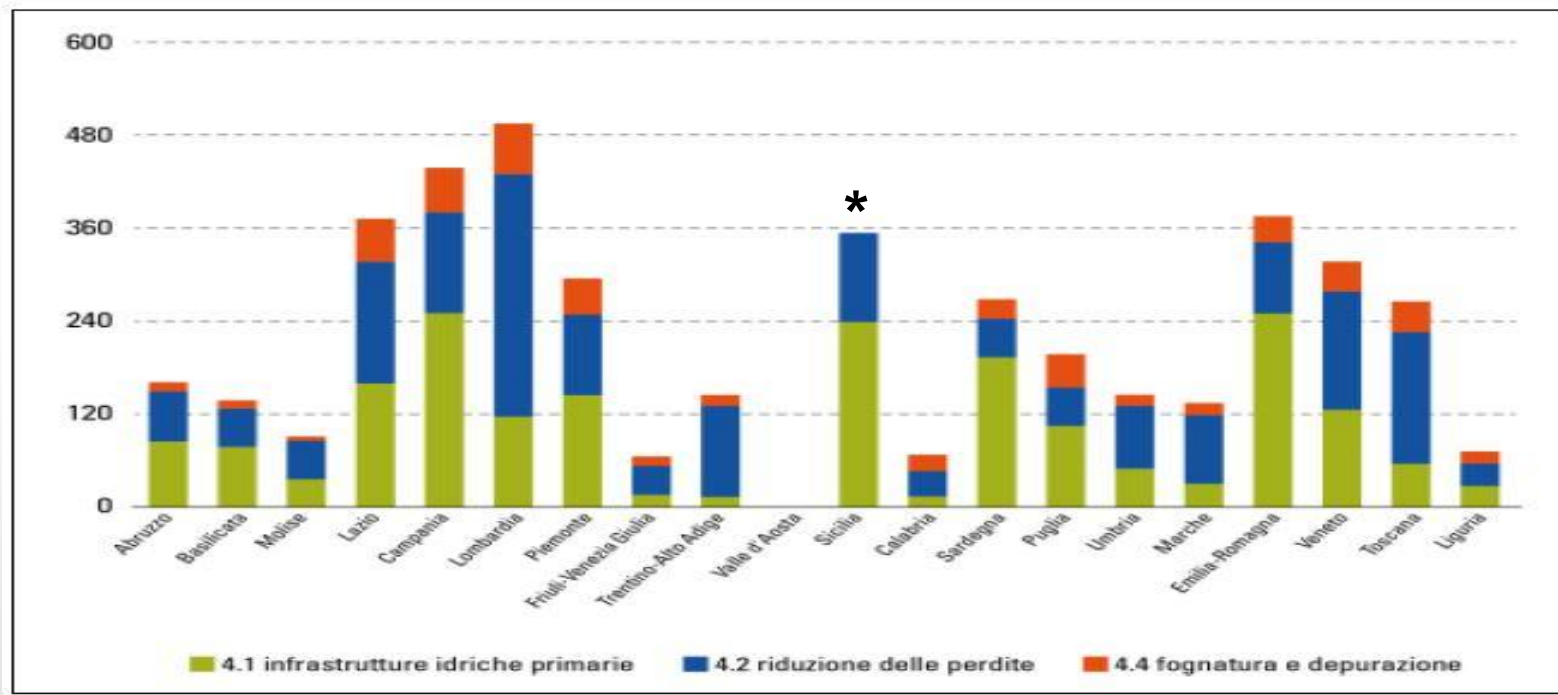
Legislative REFORMS

The Reform 4.2 “Measures to ensure full management capacity for integrated water services” aim at:

- Reduce the management fragmentation of the IIS (art. 22 D.L. 152/2001)
- Provide incentives for sustainable water use in agriculture (D.M. MASAF n. 485148 del 30.09.2022, G. U. n. 234, del 6.10.2022)
- Establish a regulated pricing system that adequately accounts for environmental resource use and pollution, in accordance with the “polluter pays” principle (Decree MEF 31.12.2022, G.U. n. 59 del 10-03-2023)



PNRR M2C4 - Regional distribution of the resources resulting from investments 4.1, 4.2 and 4.4



€ 4,5 billions, whose:

- Inv. 4.1: € 2 billions
- Inv. 4.2: € 1,924 billions
- Inv. 4.4: € 0,6 billions

* Sicilia Region: the distribution of the resources for the investment 4.4 is not reported in the graphic. The signed agreement provides for investments of more than EUR 60 millions.

(Source: Regis, March 2025 *Camera dei Deputati – Servizio Studi*)

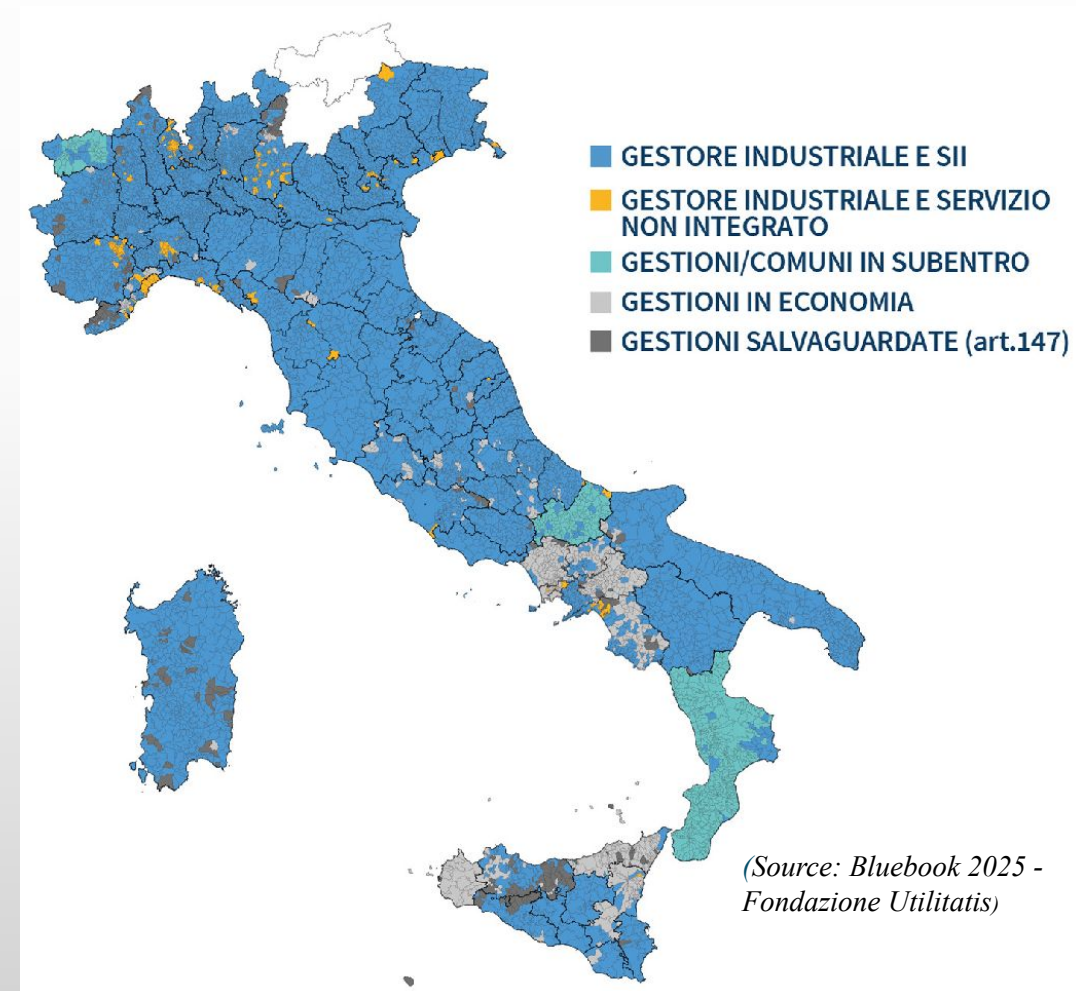


EVOLUTION OF INTEGRATED WATER SERVICE MANAGEMENT (SII), MUNICIPALITIES AND REGIONS

Industrial operator and SII	49,3 millions inhabitants
Industrial operator and non-integrated SII	1,5 millions inhabitants
Management/Municipalities taking over	2,2 millions inhabitants
Management in economy	6,7 millions inhabitants

The procedures for the assignment of the SII have not yet been completed in the ATI of Messina and in the district areas of Napoli Nord and Sannita.

ATI Trapani: in December 2024, the Council of Ministers decided to assign the management of the SII on a transitional basis to INVITALIA S.p.A. in implementation of the substitutive powers referred to in Article 14, paragraph 4 of Legislative Decree no. 115 of 9 August 2022.

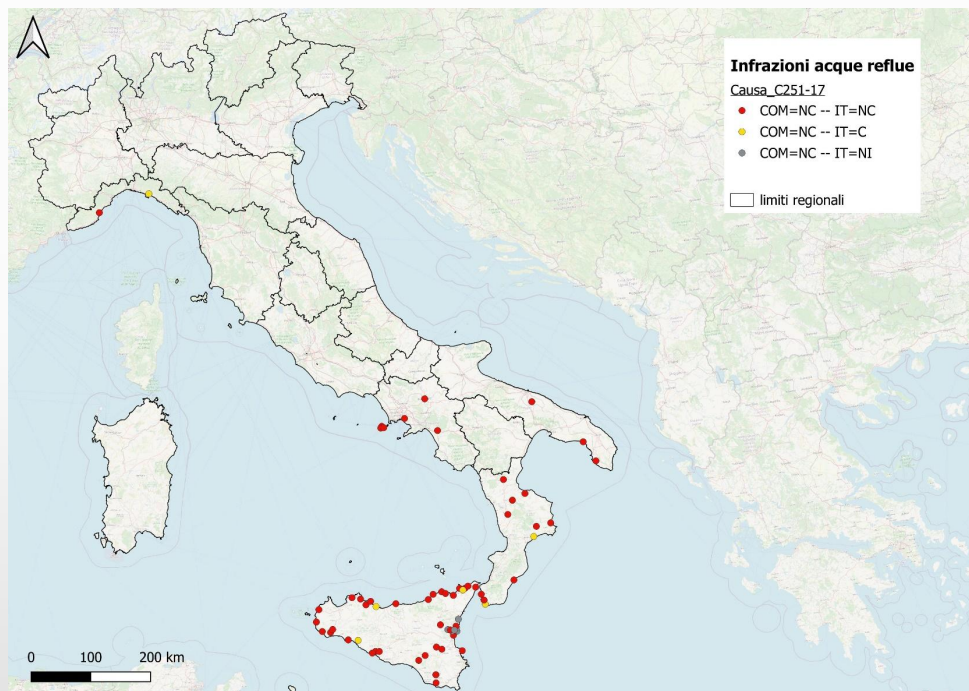




URBAN WASTE-WATER EU INFRINGEMENTS PRECEDURES

Distribution of the agglomerations concerned by infringement procedures for incorrect implementation of Directive 91/271/EEC

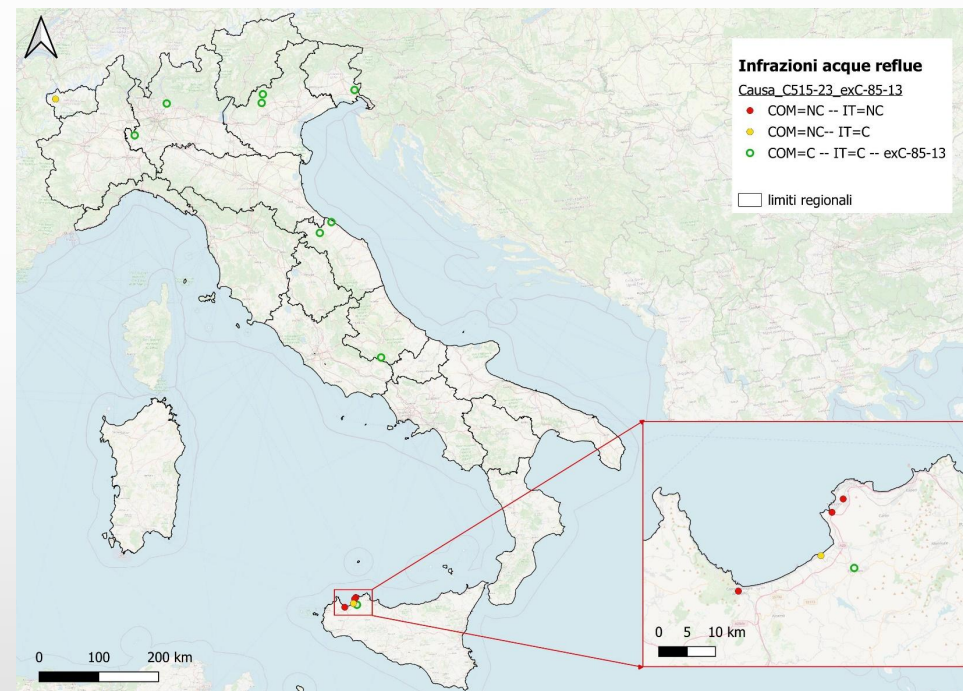
Causa C-251/17



Since 2017, an extraordinary Commissioner has been appointed (Decree-Law No. 243/2016), who is in charge of carrying out the interventions necessary to avoid the aggravation of the existing infringement procedures, in the agglomerations subject to condemnations by the EU.

	N. agglomerations	Generated load (p.e.)
Nord	2	69.400
Centro	0	0
Sud	65	5.559.523
Italia	67	5.628.923

Causa C-515/23



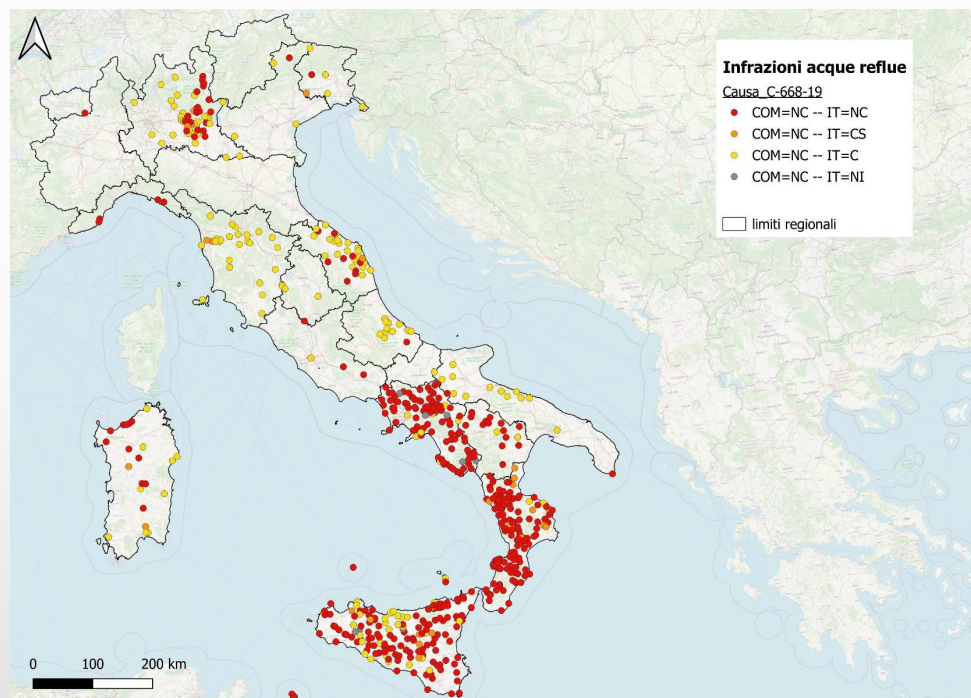
	N. agglomerations	Generated load (p.e.)
Nord	1	60.000
Centro	0	0
Sud	4	86.979
Italia	5	146.979



URBAN WASTE-WATER EU INFRINGEMENTS PRECEDURES

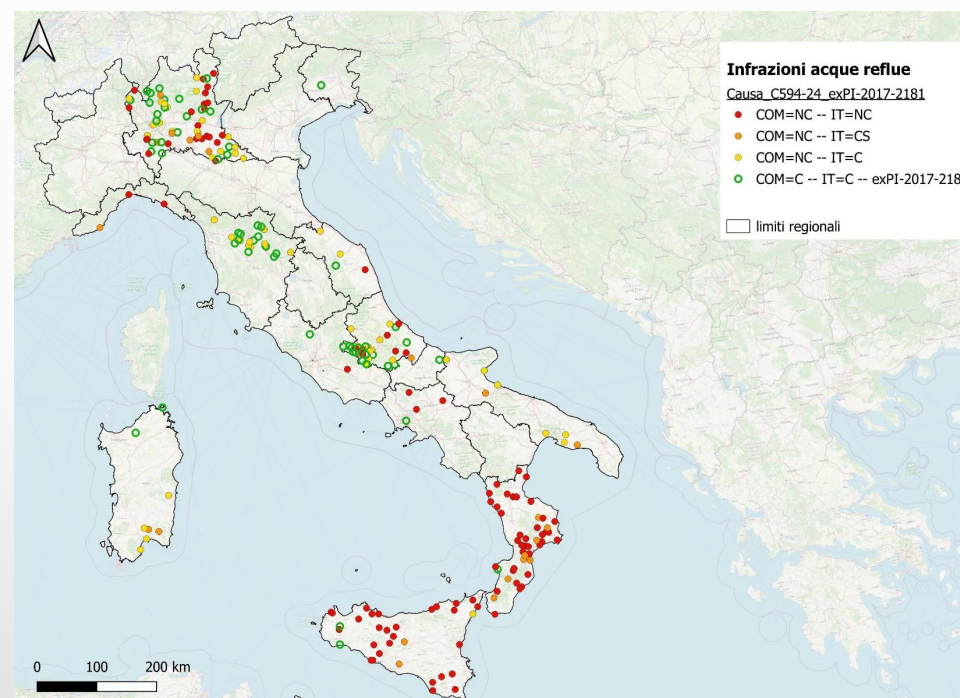
Distribution of the agglomerations concerned by infringement procedures for incorrect implementation of Directive 91/271/EEC

Causa C-668/19



	N. agglomerations	Generated load (p.e.)
Nord	73	1.429.000
Centro	67	4.451.854
Sud	465	8.111.090
Italia	605	13.991.944

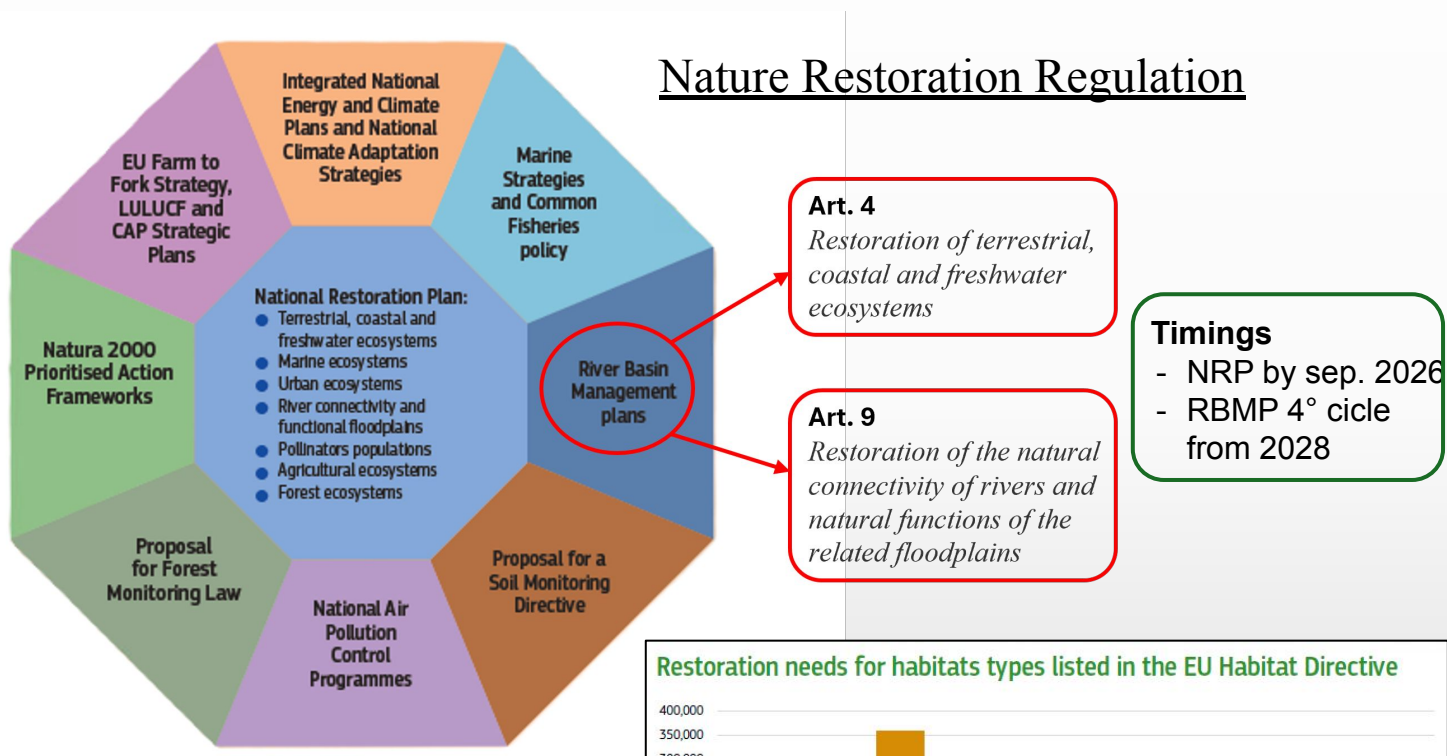
Causa C-594/24



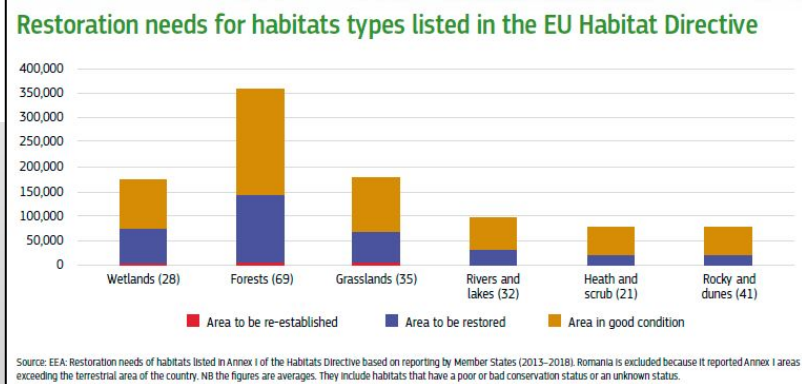
	N. agglomerations	Generated load (p.e.)
Nord	50	3.262.417
Centro	14	87.795
Sud	115	3.712.259
Italia	179	7.062.471



FUTURE NEEDS AND UPCOMING COMMITMENTS



European Commission: Directorate-General for Environment and Sundseth, K., 2025



European Commission: Directorate-General for Environment, 2022

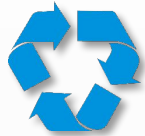
Directive 18/2023 on the quality of water intended for human consumption

- 1) Water safety approach based on risk assessment and management covering the entire supply chain. The assessment in the areas of withdrawal points for water intended for human consumption uses the information and data indicated by the WFD
- 2) Attention to the identification of possible dangers for the quality status of water intended for the production of drinking water also in order to direct monitoring and subsequent preventive measures

Water Framework Directive 2000/60/CE



FUTURE NEEDS AND UPCOMING COMMITMENTS



Water Reuse to address water crises and to increase resilience.



Recovery of the reservoir capacity for a more effective management of the reservoirs



Desalination of sea and brackish waters that can represent a complementary and emergency contribution to conventional sources.



Strengthening of water infrastructures also through the identification of priority interventions, creating connection networks and differentiate supply sources



Artificial recharge of groundwater through the updating of national legislation in the sector

- The priorities we are working on at a national level:
- - the strengthening of water infrastructures, also in relation to the interconnection between basins, to guarantee supplies even in conditions of water crisis, integrating sources and identifying the most resilient ones, such as underground aquifers, the reduction of losses in drinking water distribution networks, the rationalization of uses in agriculture and production activities, the digitalization and monitoring of networks to promote optimal management of water resources, reduce waste and limit inefficiencies;
 - - the mapping of withdrawals and the refinement of the Water Balance, the management of authorizations and the review and alignment of concession fees, the transformation of the purification cycle into "green factories" to allow the reuse of purified wastewater for all uses and the valorization and recovery of sludge (nutrients, carbon, critical raw materials);
 - - the creation of an advanced and integrated monitoring and forecasting system that allows the



CONCLUSIONS

We trust in a greater synergy of the next Management Plans with all the related national environmental strategies, in national and community resources that will support the action programs, hoping that the actions implemented so far can produce the desired effects, to overcome the critical issues and implement that necessary adaptation strategy to the increasingly strong climate impacts expected in the Mediterranean area.

Thank you