

# **The EU Urban Waste Water Treatment Directive implementation and its impact on European waters**

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The EU legislative framework in the water sector —→  
—→ to protect health and environment in Europe.

Guiding principles —→ integration principle, preventive action, “polluter pays” principle, fighting pollution at source, the precautionary principle, etc. —→ Still much to be done.

Since 1991 - the Urban Waste Water Treatment Directive (91/271), (integrated with the Water Framework Directive)



To assure the efficiency of technology - 3 main methods of treatment:

- 'primary treatment'
- 'secondary treatment'
- 'appropriate treatment'

Urban waste water entering collecting systems shall be subject to secondary treatment (or an equivalent )as follows:

- at the latest by 31 December 2000 for all discharges from agglomerations of more than 15 000 p.e.,
- at the latest by 31 December 2005 for all discharges from agglomerations of between 10 000 and 15 000 p.e.,
- at the latest by 31 December 2005 for discharges to fresh-water and estuaries from agglomerations of between 2 000 and 10 000 p.e.



## periods of transition

Malta	2007
Lithuania	2009
Czech Republic, Estonia	2010
Cyprus	2012
Bulgaria	2014
Slovakia, Slovenia, Hungary, Latvia, Poland	2015
Romania	2019

UWWTD = unquestionable positive impact on waters in Europe.

Results depend on regions, organization, available funds.

Important improvement - already done.



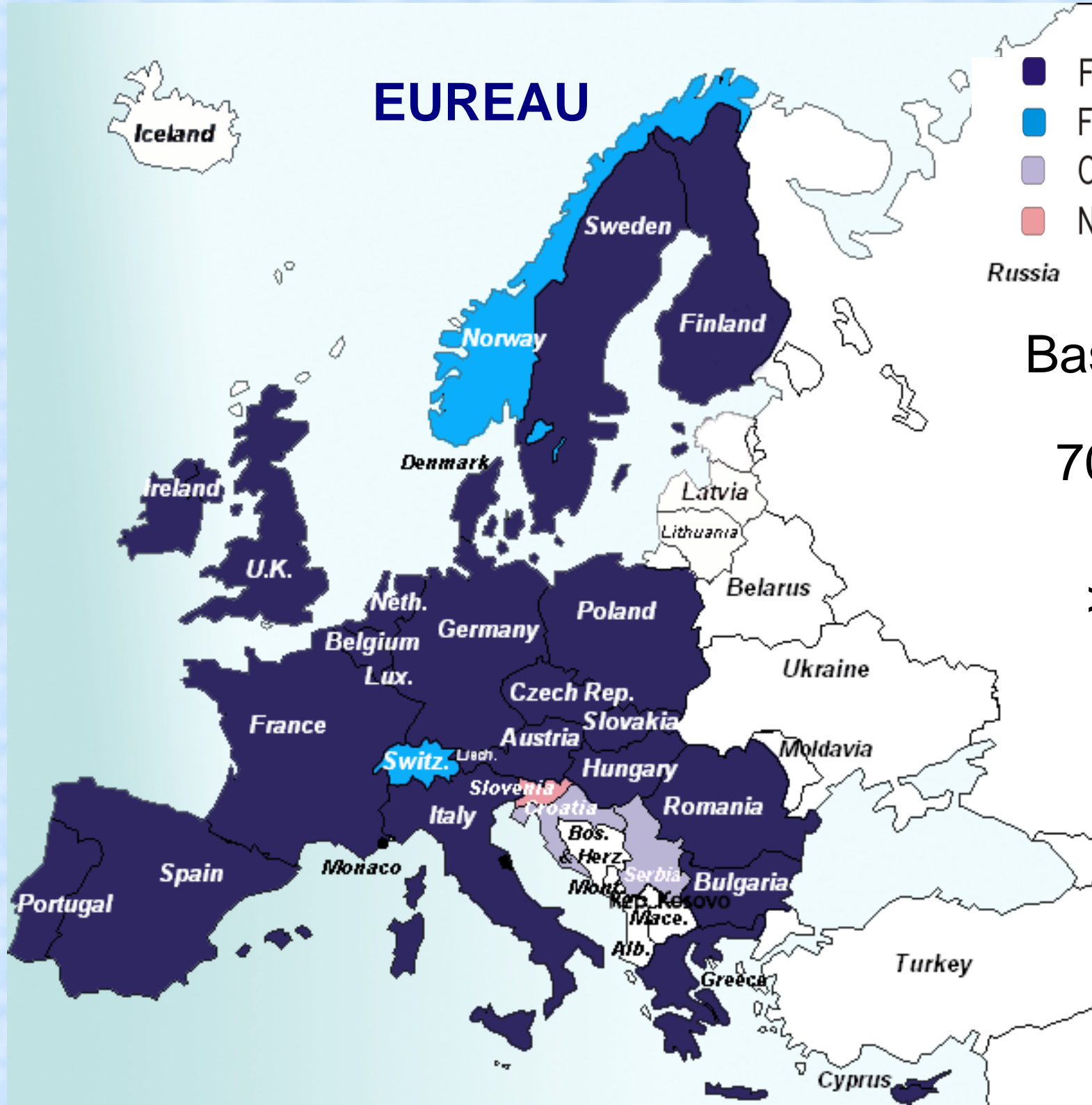
# EUREAU

- Full members
- Full members (EFTA countries)
- Observer members
- Non members (EU countries)

Based in Brussels

70.000 W&WW  
operators

> 400 million  
Europeans





# GERMAN

Y  
- UWWTD is fully implemented = it is feasible!

Agglomerations  $\geq 2,000$  p.e.  
discharging into Sensitive  
Areas - 100 % fulfilled  
(collecting system,  
secondary treatment, more  
stringent treatment)



Agglomerations  $\geq 2,000$  p.e. discharging into Normal Areas –  
100% fulfilled (collecting system, secondary treatment);  
even 75% of WWTPs in Normal Areas have a more stringent  
treatment.



# GERMANY

The good chemical and biological water quality of the river Rhine and other water bodies (COD, oxygen content, nutrients, fish species) is proved. Salmons in some tributaries of the river Rhine are more and more frequent.

## Important additional aspects to ameliorate the water quality

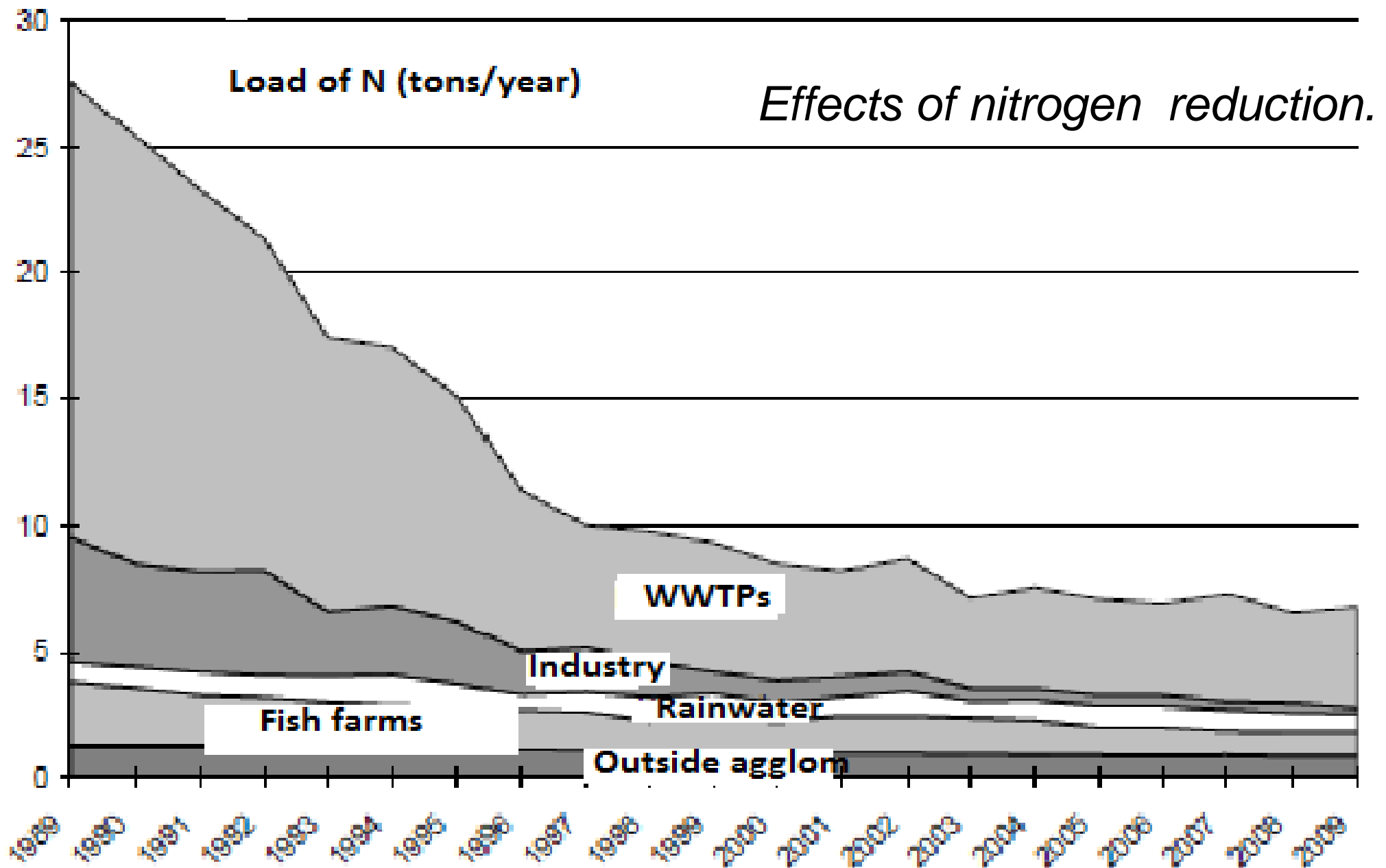
- \* Definition of stringent requirements for the dimension of storm sewage tanks and combined wastewater outflows.
- \* Limitation of micro pollutants and pharmaceutical traces.
- \* Redesigning artificial waters to natural water courses to enhance the self purification capacity of water bodies.

*Source: German EUREAU member*



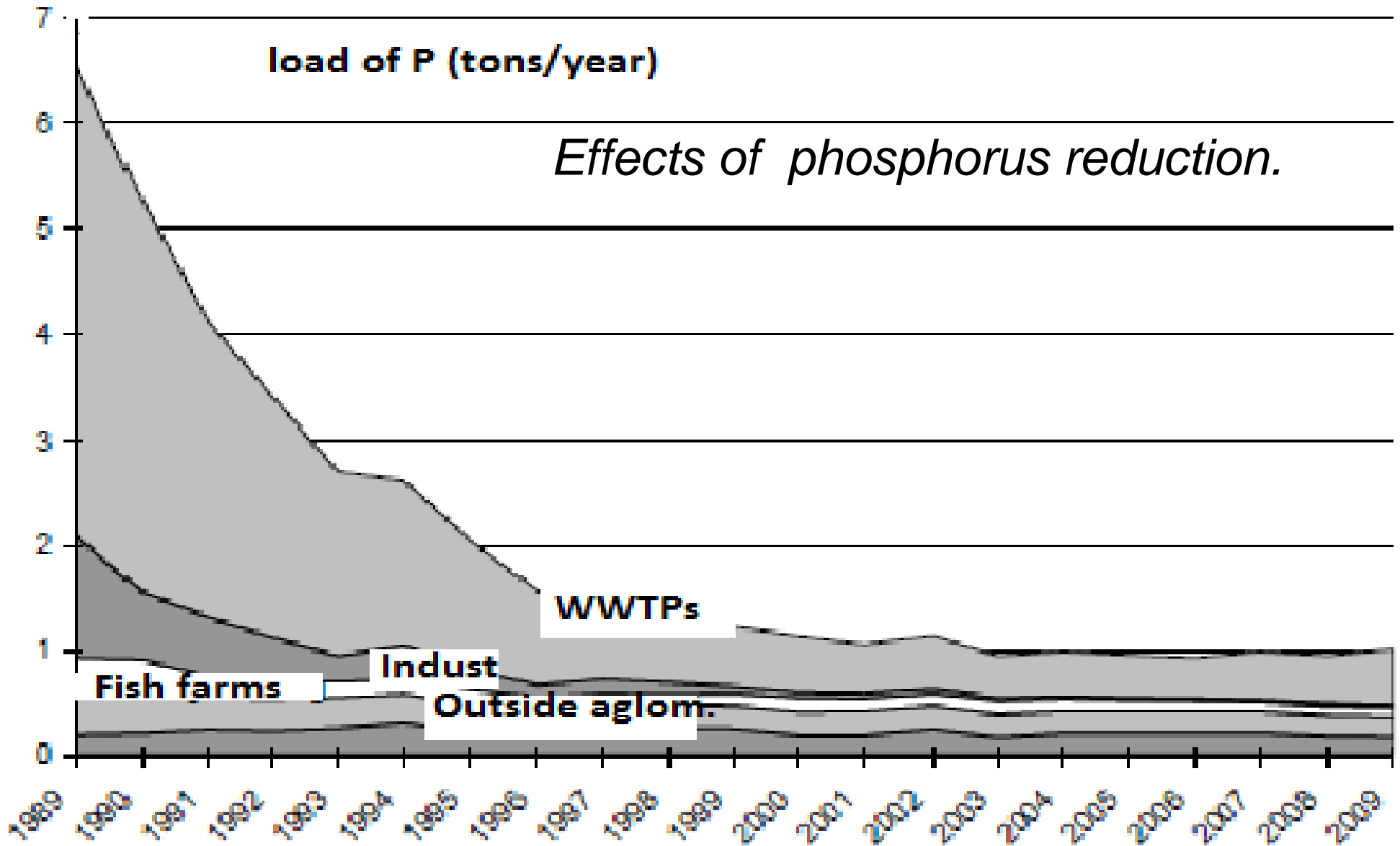
# DENMARK

Denmark = excellent example of the successful implementation!





# DENMARK

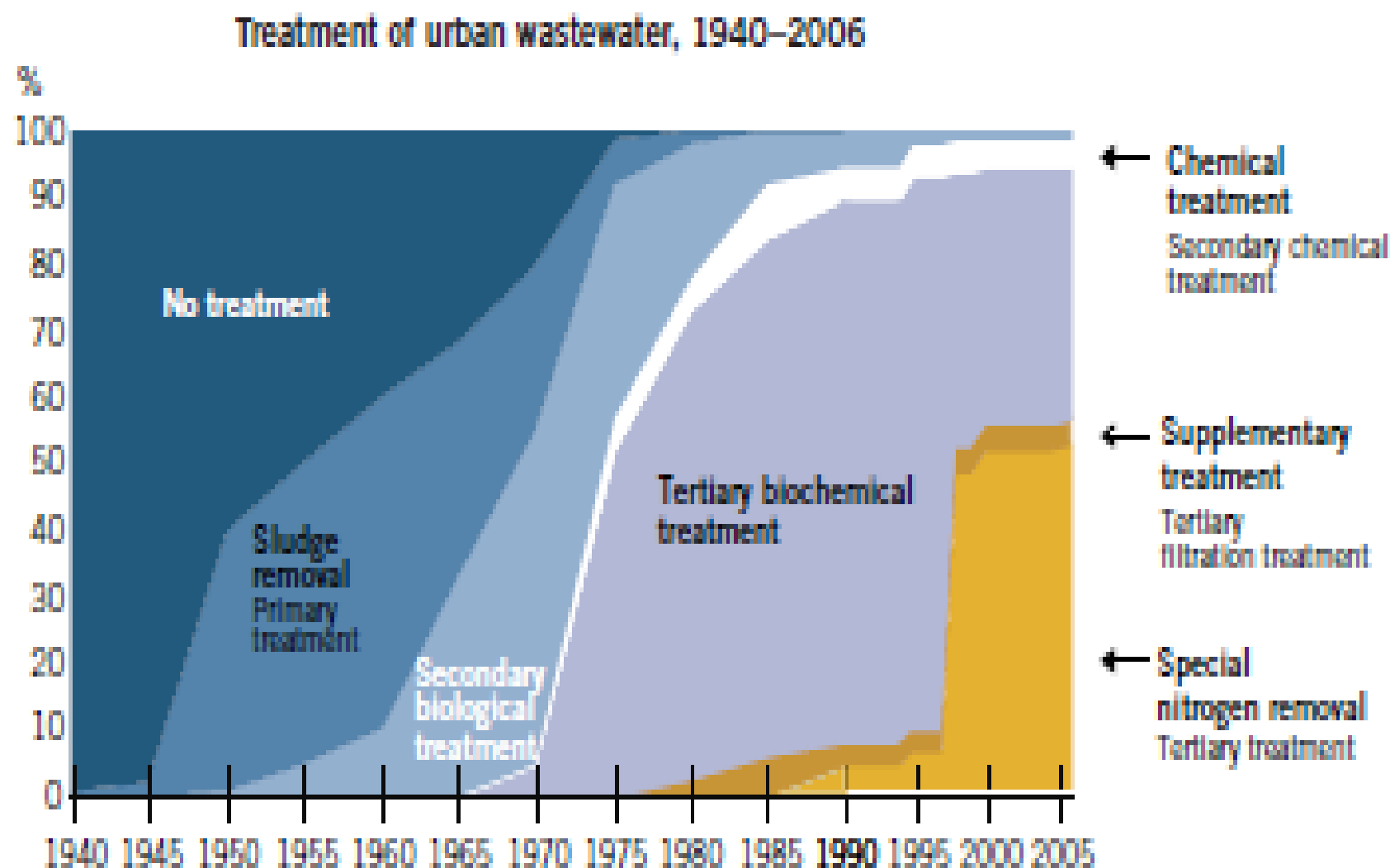


source: DANVA - Danish EUREAU member 9



# SWEDEN

95% of urban wastewater undergoes both biological and chemical treatment.



Source: Swedish EUREAU member and EPA 2008



# FRANCE

France (DOM included)- 18699 agglomerations

On March 2010 - 18637 WWTPs treat waste water of 75 mln PE

98 % of the WWTP in agglomerations > 2000 PE have at least secondary treatment.

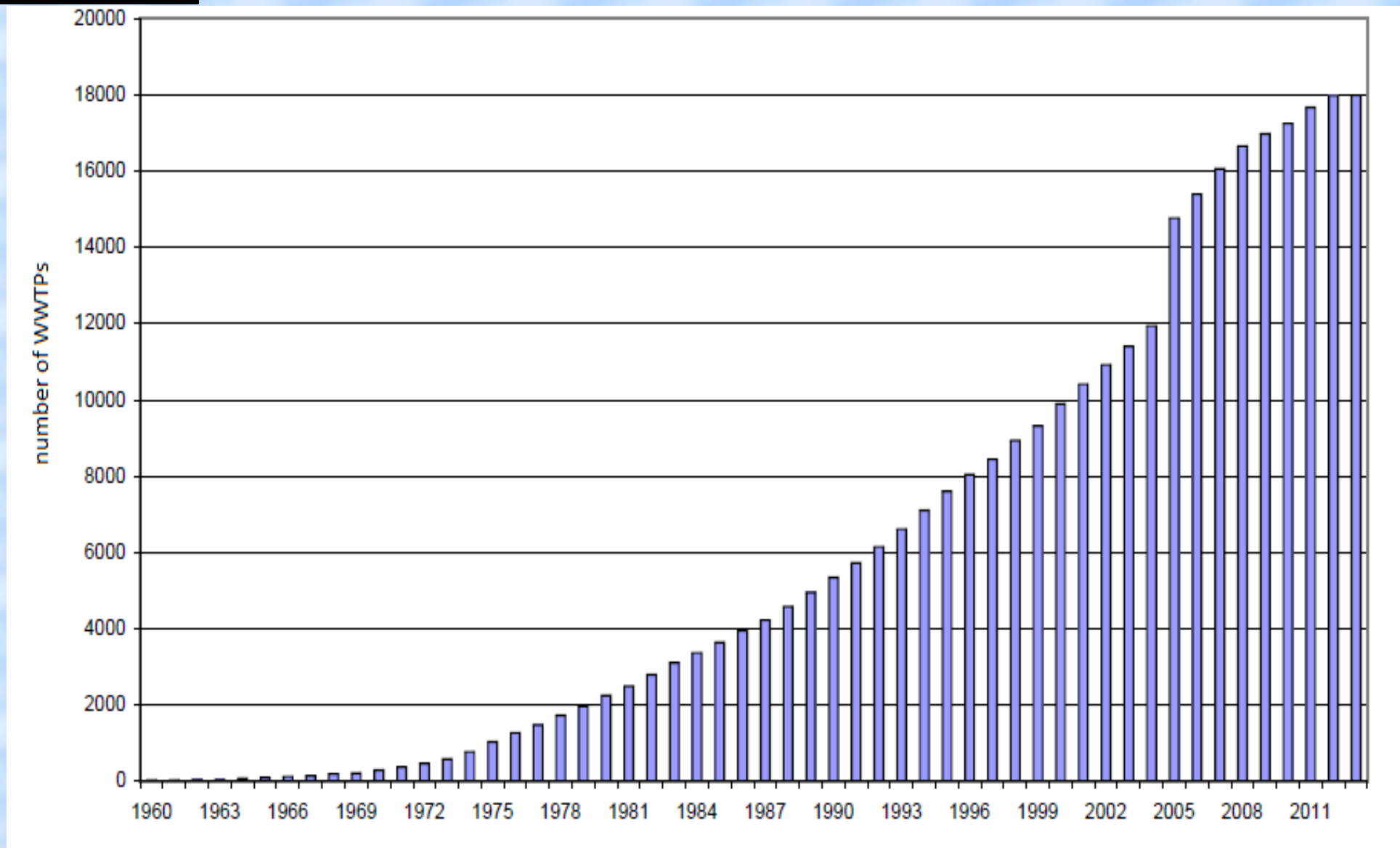
The action plan 2011 ( source:International Office for Water)

\* All WWTPs serving more than 2000 PE will be ready in 2011, with some exceptions for 2013.

\* 4 agglomerations of more than 10 000 PE will be ready later than in 2011 (Bastia Nord, Ajaccio, Sanguinaire, Saint-Denis de la Réunion et Cayenne).



# FRANCE



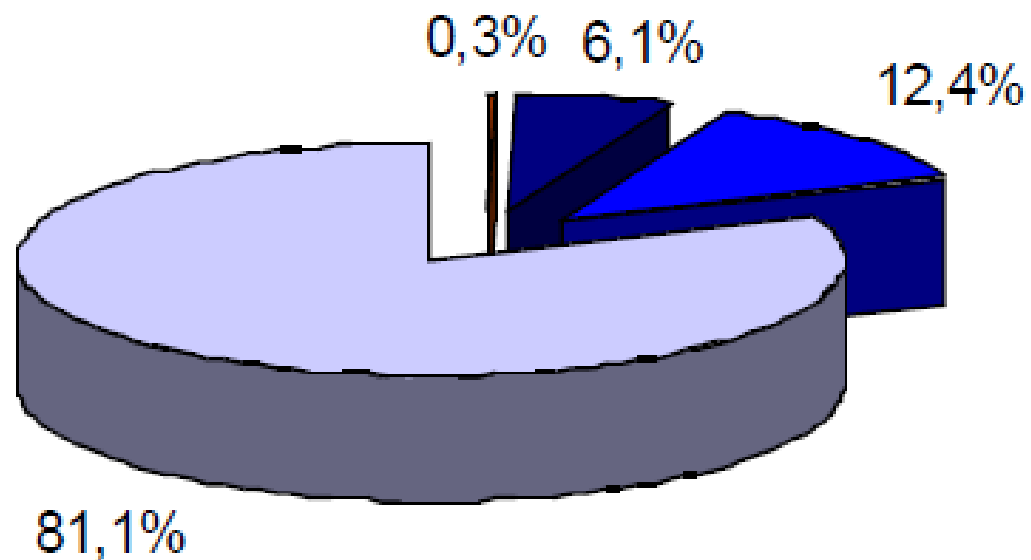
Number of WWTPs per year which equipment has been made in conformity with the UWWTD

(source *Bilan 2008 de l'assainissement en France*).<sup>12</sup>





# FRANCE



■ < 200 PE

■ >= 2000 to 10000 PE

■ >= 200 to 2000 PE

■ >= 10000 PE

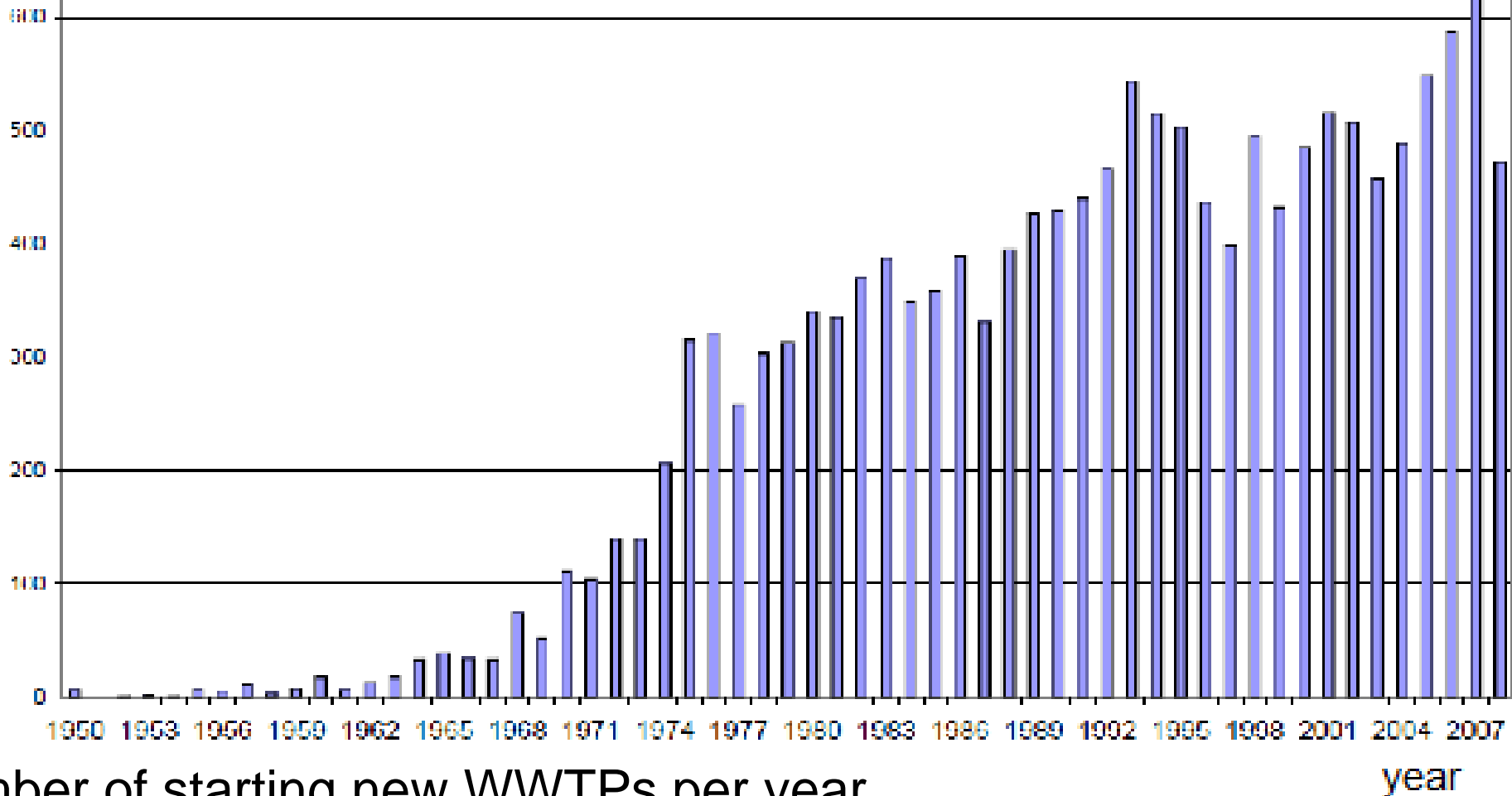
capacity of the WWTPs

(source *Bilan 2008 de l'assainissement en France*)<sub>13</sub>



# FRANCE

number of WWTPs



number of starting new WWTPs per year,  
(source *Bilan 2008 de l'assainissement en France*).

51% of WWTPs are less than 15 years, serve 36 millions of PE which consist 66% of the total registered charge.

Pics reflect the key periods of the EU legislation.<sup>14</sup>



## BELGIUM

The UWWTD is not yet fully implemented. On 31.12.2010 :

Agglomerations > 10.000 PE:

- 100% of the conformity with nutrient removal,
- 98% for provision of collecting systems.
- 100% of the conformity should be achieved by the end of 2011.

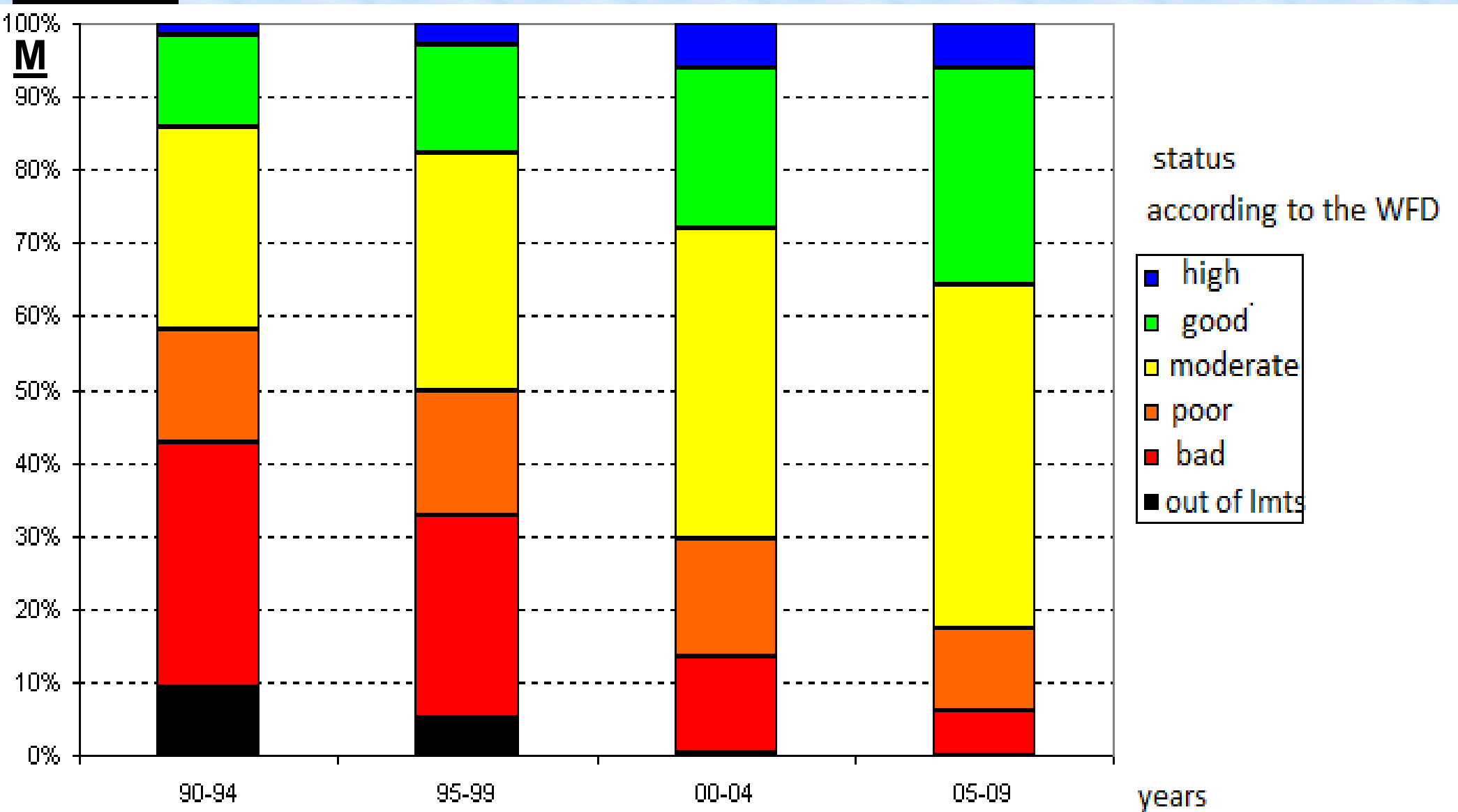
In 92 smaller agglomerations (2.000-10.000 PE):

- wastewater treatment infrastructure in 90 of them,
- collecting systems in 83.
- 100% conformity is expected mid 2012, all works are in progress.

To obtain better water quality:

- eliminate point source pollution from industry and agricultural pollution,
- reduce the energy consumption while improving the effluent results as much as possible,
- reduce the consumption of chemicals,
- reduce the input of drainage and rain water loads
- reduce the impact of overloading (buffer tanks, separate sewers, CSO)
- study the impact of priority pollutants





the Flemish rivers over the years.

Source: VMM Flemish environmental agency



# SPAIN

The UWWTD is implemented in 95%.

2320 agglomerations > 2000 PE = the charge of 68,8 millions PE.

56,9 millions (83%) are conformed to the UWWTD.

1711 UWWTP: 938 with secondary treatment, 773 with tertiary treatment.

The water quality visibly ameliorated:

- 89,3 % of bathing marine waters have a very good status,
- 10,2% have a good status,
- 0,5% are problematic.
- The quality of inland bathing waters have in 41% a very good status,
- 56,4% - good status,
- 2,6% are problematic.

National Plan for Water Quality for 2007-2015 concerning sewerage and

treatment = 19400million € In 2009 = 4000 million €

# SLOVAKIA

the WWTD it is not fully implemented.

Transitional periods:

- 2010 for agglomerations > 10 000 PE
- 2015 for agglomerations > 2000 PE

Obstacles: economic, and legislative.

Lack of funds and unclear, inconsistent and often changed legislation

Difficult to show absolute proofs that the water quality ameliorated. There is still negative impact from industry and agriculture.

# **BULGARIA**

1999 - centralized planning- National Programme of UWWTP construction for settlements with over 10 000 PE.

The national programme identified 104 agglomerations > 10 000 PE

In 2003, as part of the EU pre-accession negotiations:

- Programme for the application of the UWWTD - Application Programme:
    - \* expands the scope of the National Programme,
    - \* identifies all agglomerations with over 2000 PE
    - \* specifies the investments needed (UWWTP and sewerage network) . \*
- for identified 430 agglomerations - 2.218 billion euro.

100 urban wastewater treatment plants constructed, treat 60% of the population equivalent that fall into the scope of the Directive.





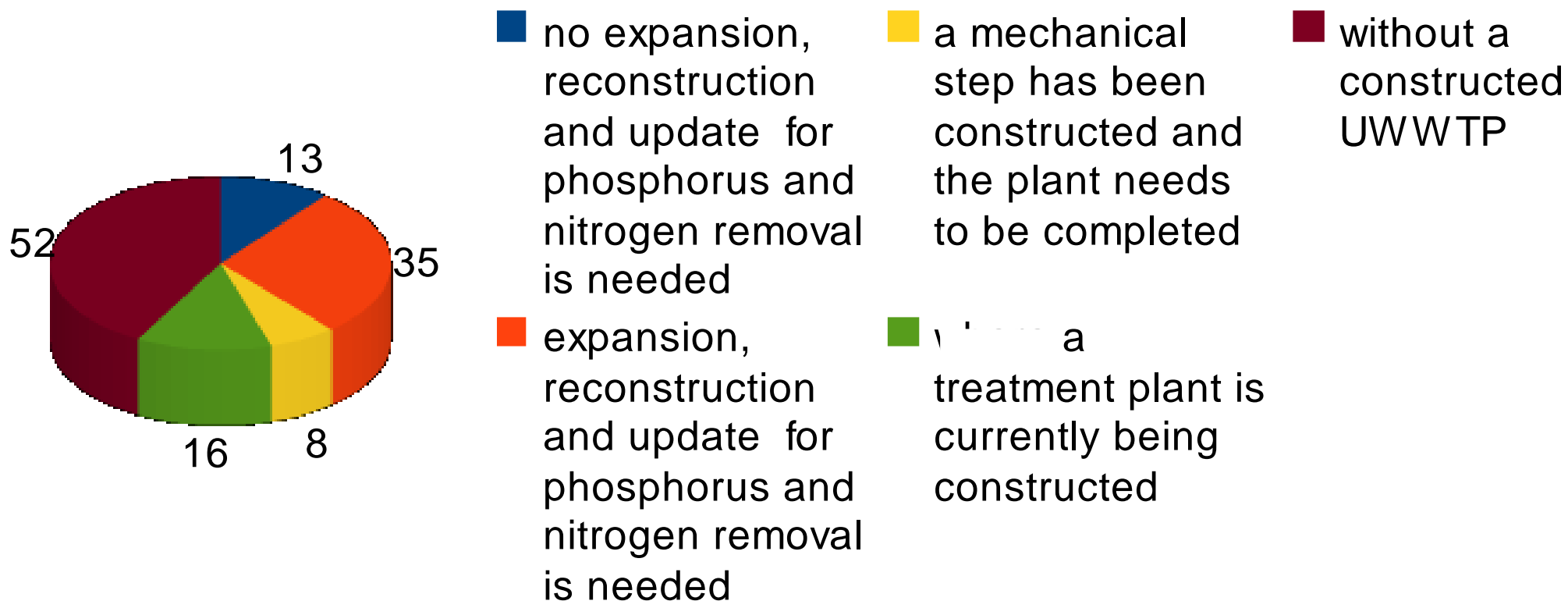


# BULGARI

On 14.02.2011 :

A

124 agglomerations > 10000PE with constructed UWWTP:

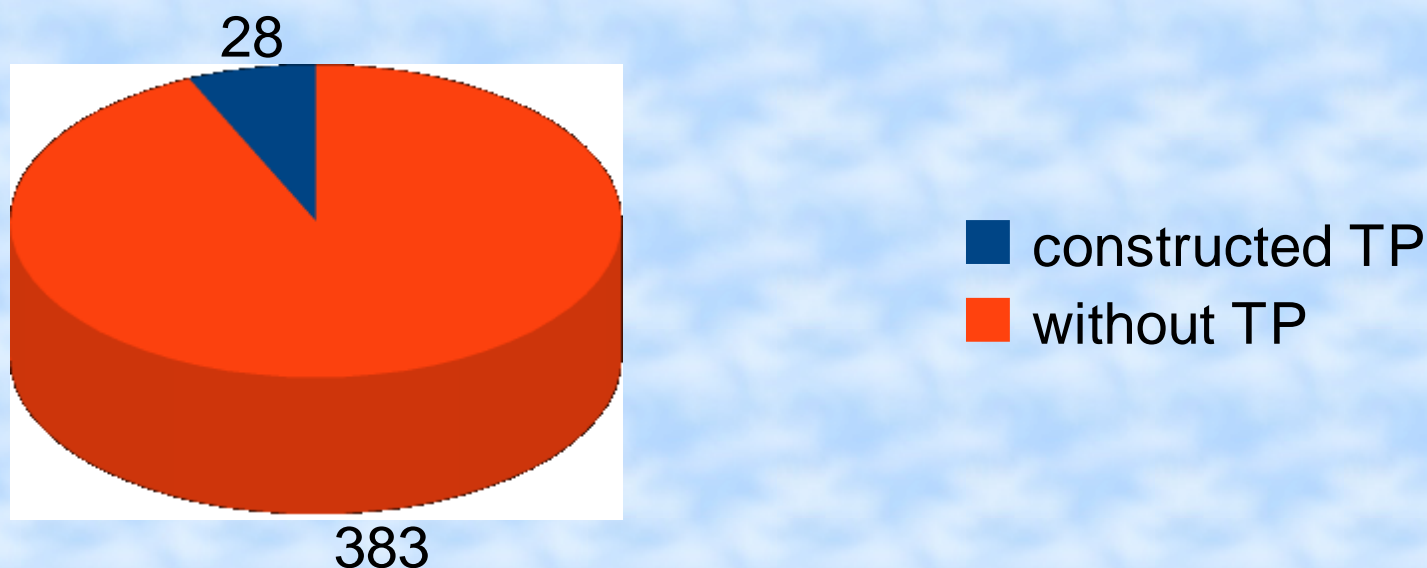


No agglomeration >150 000 PE having 100% of its sewerage constructed

# BULGARI

A

- 10 000 >agglomerations > 2000 , total: 411



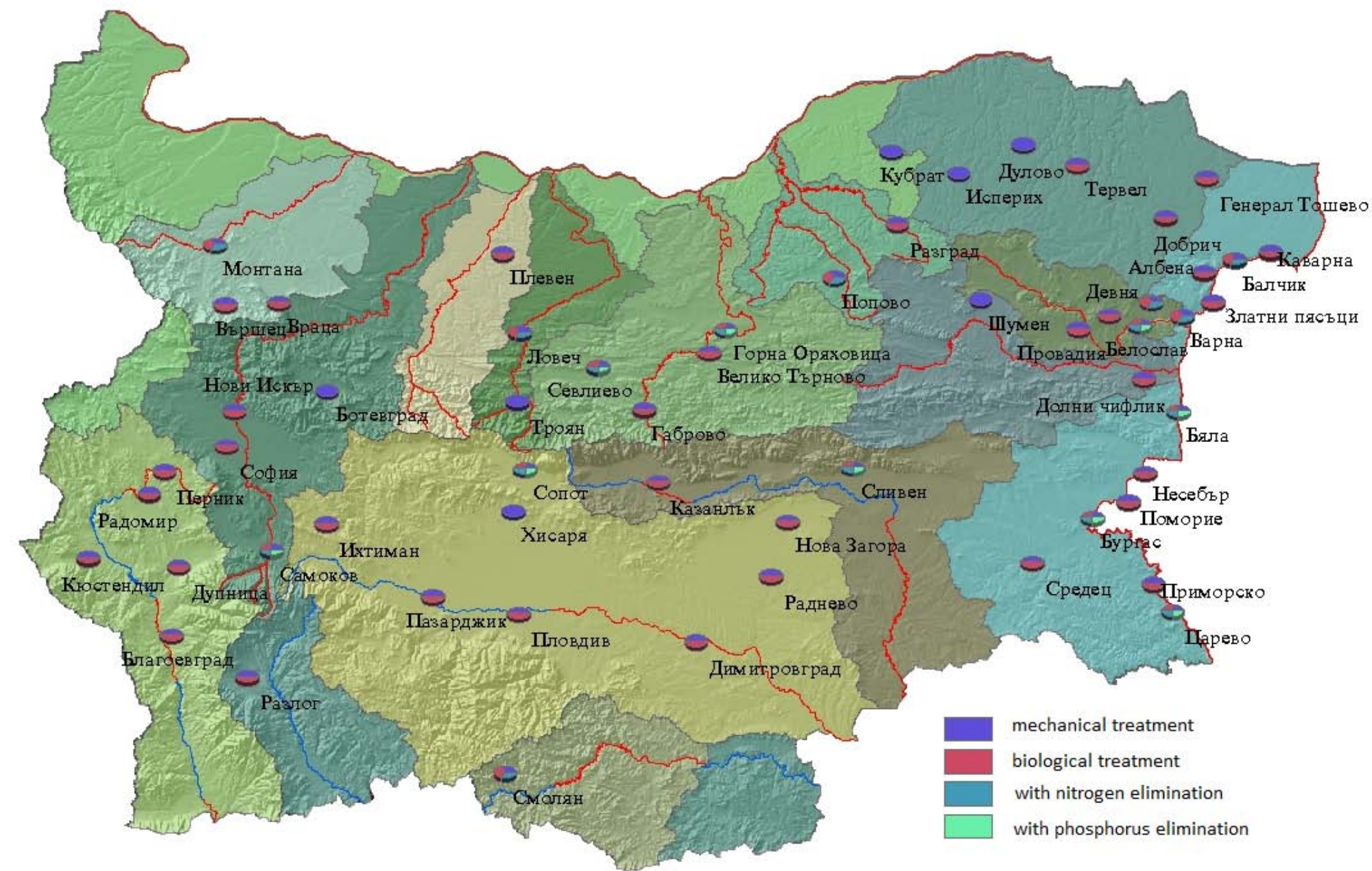
Most of the existing UWWTP's have 20-30 years = problems with providing the required stage of treatment

Bulgaria is doing a huge progress - many of WWTPs are under construction.

# BULGARI

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constructed UWWTPs in agglomerations above 10 000 PE

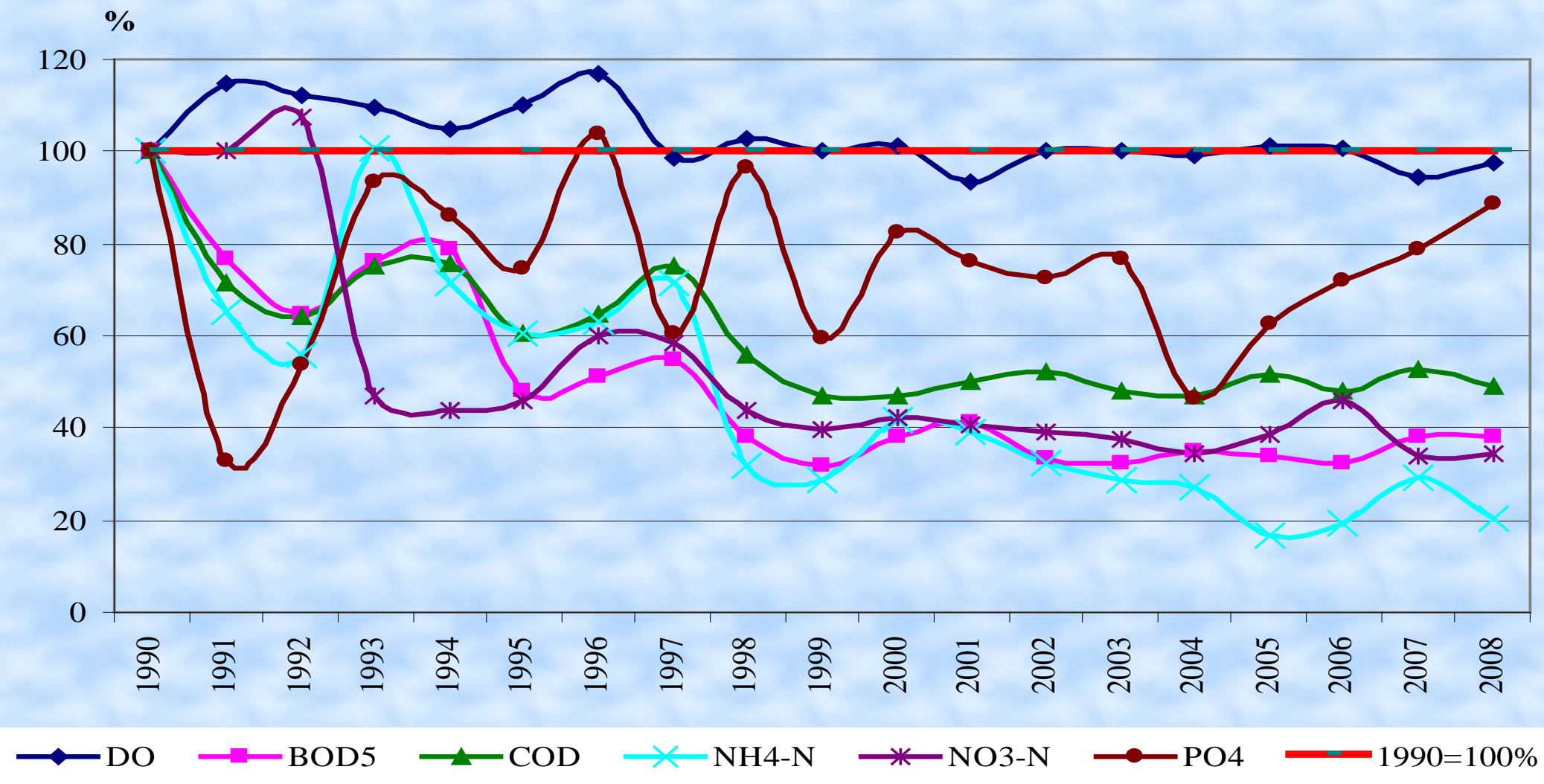




# BULGARI

Atendency for water quality improvement, except for phosphates:

- increased use of detergents, inadequate cleaning of domestic waste water,
- increased use of phosphates in agriculture and industry.





## **CONCLUSIONS**

The positive impact of the directive on waters quality is evident, however the general situation can be seriously deteriorated because of agricultural and industrial impact.

It is visible that dates in the directive and Accession Treaty have been unrealistic. There is a risk of or non-compliance with the deadlines. Calculated costs are seriously underestimated in most countries.

The main obstacles are lack of resources, lack of capacity among local contractors but especially also the difficulties in getting the right permits to be able to do the work. In practice, the time needed to realize a project begun longer and longer

## **CONCLUSION**

**EU** Implementation procedures and controls are universally considered too complicated, especially the administrative aspects. The Regional Policy system is perceived as non transparent and too complex.

In this context the success depend also on the local administration efficiency

Water services sector appreciates all benefits coming from EU regional policy. We are proud of accomplished investments. However we are also aware that there are still many challenges ahead, that we may only be able to meet with the help of EU regional policy.

