

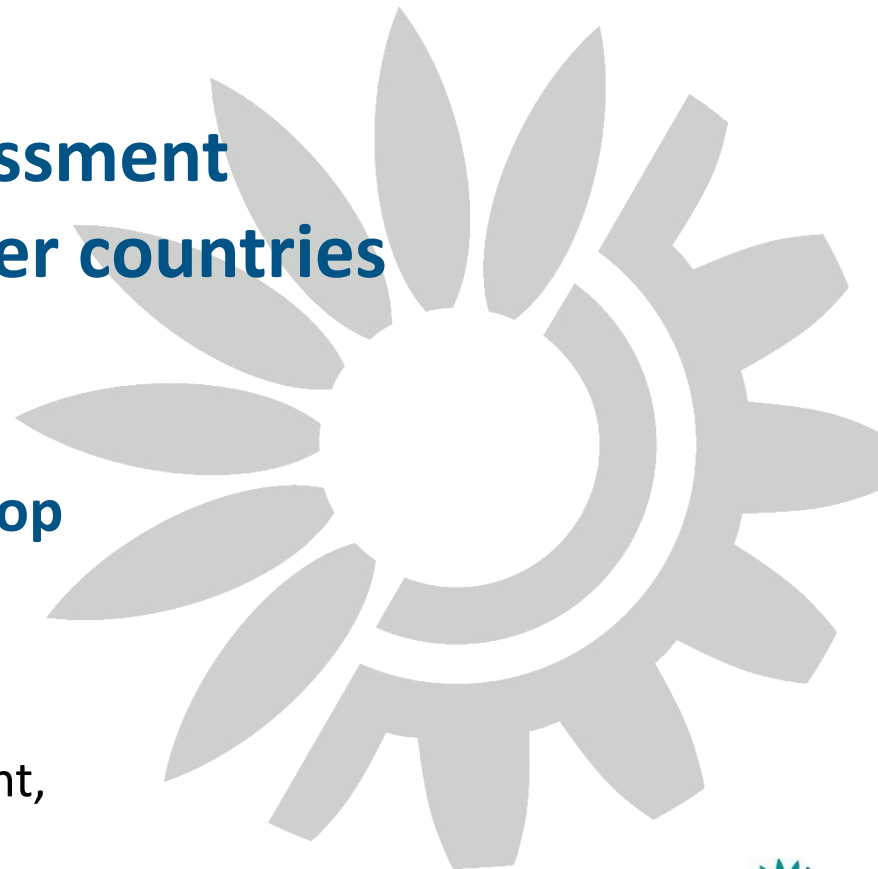
# EEAs assessments of the status of Europe's waters

## EEA 2017 State of Water assessment Consultation with EEA member countries

Session 3  
2016 Eionet NRC Freshwater Workshop

Peter Kristensen

Project manager Integrated Water Assessment,  
European Environment Agency (EEA)



	2015				2016				2017				2018	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
<b>WFD assessment framework Report</b>														
<b>Task 1: EEA/ETC assessment activities</b>														
Standard output products (graphs, maps, tables) implemented on WFD database*														
Preparatory assessments **			X	X										
<b>Main assessment activities</b>							O							
CIS and Eionet consultation of draft report					X	X	X	X						
Final update of report and related products														
Final EEA 2017 state of water assessment														

▲ Draft EEA assessment results;

▼ Update of assessment results based on data update and comments received.

▶ EEA report/portal ready for publication dissemination.

O First WISE-WFD master database should be ready (1. October 2016)

\* Uncertain who is implementing standard output products on WFD database (ENV consultant)

\*\* Some aspects needs further analytic work (e.g. comparison of status and pressures between 1<sup>st</sup> and 2<sup>nd</sup> RBMP periods, methodology for assessing chemical status and RBSPs; these activities can be started in autumn 2015.

**The main assessment activity will be concentrated in a three month period in the autumn 2016 and in the first half of 2017.**

January 2017 consultation on status and pressure results (1-2 day WG DIS meeting)

May/June 2017 consultation on draft report – (1-2 days Eionet/DIS meeting)

# Consultation with Member States/EEA member countries

We need your advice, expertise and comments on:

- How the European results on status and pressures are presented.
- Illustration of progress – comparison 1<sup>st</sup> and 2<sup>nd</sup> RBMP period
- Cause-effect relationship between status, pressures and measures implemented during the 1st RBMP period.
- Information on good case studies
- Inclusion of results from non-WFD countries – Session 4 (afternoon)

*WFD Article 18: ... a review of the status of surface water and groundwater in the Community under-taken in coordination with the European Environment Agency;*



# Results summer 2017

- Many water bodies do not achieve good status
- Pressures are pollution (chemicals, nutrients), hydromorphology, water abstraction and flow regulation etc.
- The improvement over 1st RBMP period is limited on overall (ecological, chemical) status but some quality elements are improving
- The projected improvement in status over 2<sup>nd</sup> RBMP is limited
- Measures are not sufficient
- Need more integration in other policies and sector activities

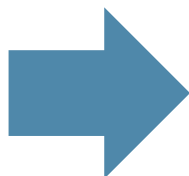


# Draft content and approach

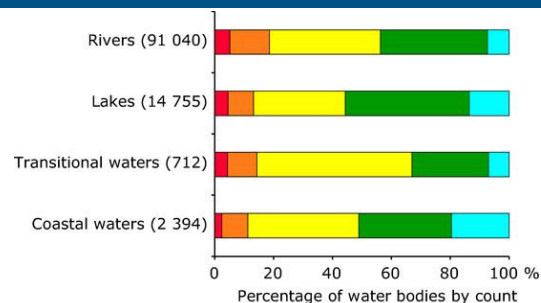




# From 170 RBMPs to European overviews



**WISE**  
WATER INFORMATION  
SYSTEM FOR EUROPE



## The 2017 State of Water Assessment (report/portal) should cover

- Overview of status, pressures and impacts (update of baseline – state 2012-2015)
- Change in status and pressures from 1<sup>st</sup> to 2<sup>nd</sup> RBMPs
- Relationship between pressure and status (what is causing less than good status) – pressures-driving force relationship.
- Effect of measures (focused on measures implemented during the first RBMP planning period).
- Inclusion of results from non-WFD countries – Session 4 (afternoon)

# 2017 State of Water assessment, focus on status and pressures

## Content/coverage

- Water body delineation and data aggregation
- Ecological status of surface waters incl. biological quality elements
- Hydromorphological quality elements as part of ecological status
- Chemical status of surface waters and river basins specific pollutants
- Groundwater chemical status
- Groundwater quantitative status
- Transitional and coastal waters
- Point source pollution pressures and impacts
- Diffuse source pollution pressures and impacts
- Chemical pressures and impacts
- Hydromorphological pressures and impacts
- Heavily Modified Water Bodies and Artificial Water Bodies (HMWB/AWB)
- *Objective setting and exemptions*



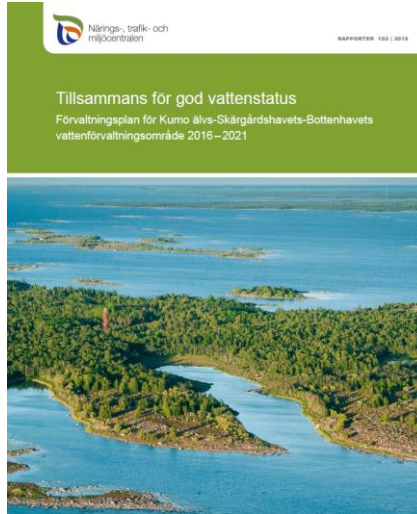


# Information sources



## River basin management plans 2016-2021 of the Netherlands

Summary



## DAUGAVAS UPJU BASEINU APGABALA APSAIMNIEKOŠANAS PLĀNS 2016.-2021.GADAM



Rīga, 2015

Komitatod  
Vabariigi Valitsuse poolt 7. jaanuaril 2016. a.

IDA-EESTI VESIKONNA  
VEEMAJANDUSKAVA

KESKKONNAMINISTEERIUM



## Bewirtschaftungsplan

(gem. Art. 13 EG-WRRL bzw. § 83 WHG)

FGE Eider

2. Bewirtschaftungszeitraum 2016 – 2021



MINISTERSTVO ŽIVOTNÉHO PROSTREDIA  
SLOVENSKEJ REPUBLIKY

Implementácia smernice 2000/60/ES Európskeho parlamentu a Rady  
z 23. októbra 2000

Vodný Plán Slovenska

Plán manažmentu  
správneho územia povodia  
Dunaja

Aktualizácia

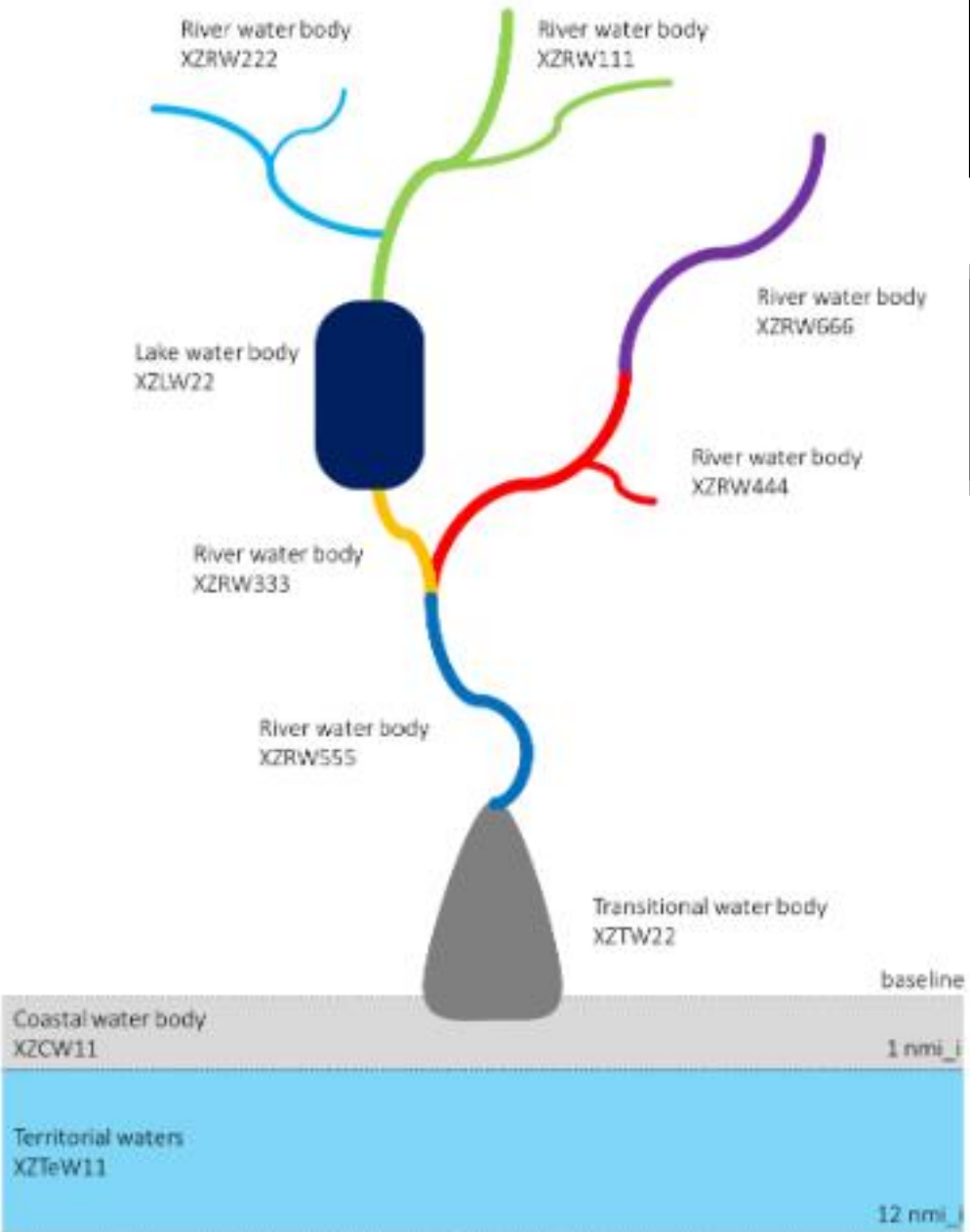


Water for life and livelihoods



Part 1: Anglian river basin district  
River basin management plan

Updated: December 2015



- Aggregation**
- European (all)
  - Member States
  - River Basin District
  - Sub-unit
  - Natural\_HMWB\_AWB
  - Type (common types)

- Water bodies**
- SWBcode
  - Name
  - Category
  - Natural\_HMWB\_AWB
  - Size (length, Area)
  - Type

- Ecological status**
- Ecological status
  - Biological QEs
  - Physico-chemical QEs
  - Hydromorphology QEs
  - RBSPs and pollutants causing failure
- Status: High, Good, Moderate, Poor, and Bad*

- Chemical status**
- Chemical Status
  - Priority substances causing failure
- Status: Good, and failure achieving good status (Poor)*

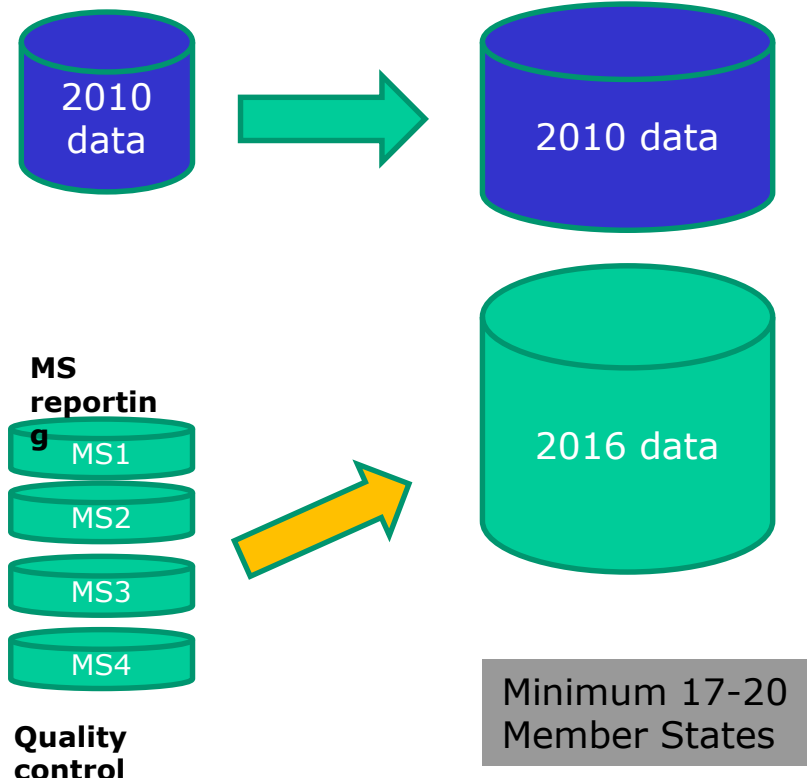
- Quantitative status**
- Quantitative Status
  - Reason for failure
- Status: Good, and Reason for failure (Poor)*

- Significant pressure**
- All WBs not achieving good should have one or more pressures*
- Significant pressure type

- Impacts**
- All WBs not achieving good should have one or more impacts*
- Impact type

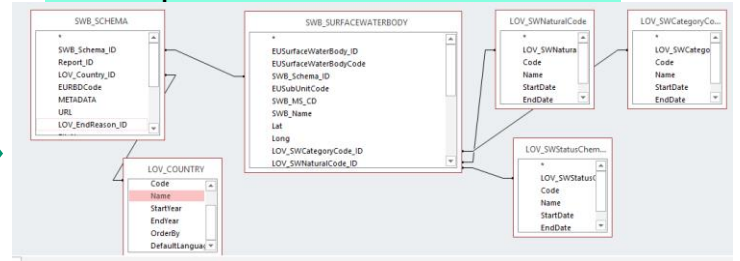


# Standard queries on data base



## Standard queries on database

- Surface water body characteristics
- Ecological status
- Chemical status
- Pressures
- Impacts



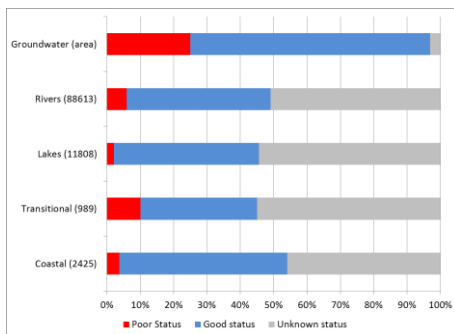
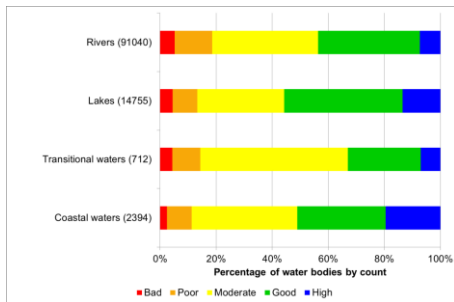
```

SELECT SWB_SCHEMA.EURBDCCode, LOV_COUNTRY.Name,
SWB_SURFACEWATERBODY.EUSurfaceWaterBodyCode,
SWB_SURFACEWATERBODY.Area, SWB_SURFACEWATERBODY.Length,
LOV_SWStatusChemicalCode.Name, LOV_SWNaturalCode.Name,
LOV_SWCategoryCode.Name,
SWB_SURFACEWATERBODY.EUSurfaceWaterBody_ID
FROM LOV_SWCategoryCode INNER JOIN (LOV_SWNaturalCode INNER
JOIN (LOV_SWStatusChemicalCode INNER JOIN (LOV_COUNTRY
INNER JOIN (SWB_SURFACEWATERBODY INNER JOIN SWB_SCHEMA
ON SWB_SURFACEWATERBODY.SWB_Schema_ID =
SWB_SCHEMA.SWB_Schema_ID) ON LOV_COUNTRY.LOV_Country_ID
= SWB_SCHEMA.LOV_Country_ID) ON
LOV_SWStatusChemicalCode.LOV_SWStatusChemicalCode_ID =
SWB_SURFACEWATERBODY.LOV_SWStatusChemicalCode_ID) ON
LOV_SWNaturalCode.LOV_SWNaturalCode_ID =
SWB_SURFACEWATERBODY.LOV_SWNaturalCode_ID) ON
LOV_SWCategoryCode.LOV_SWCategoryCode_ID =
SWB_SURFACEWATERBODY.LOV_SWCategoryCode_ID:
    
```

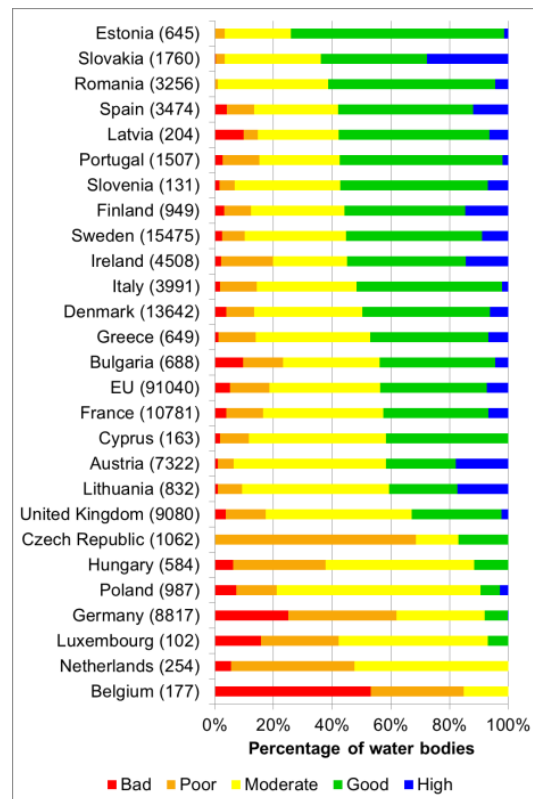


# Status (overall, ecological, chemical, quantitative status)

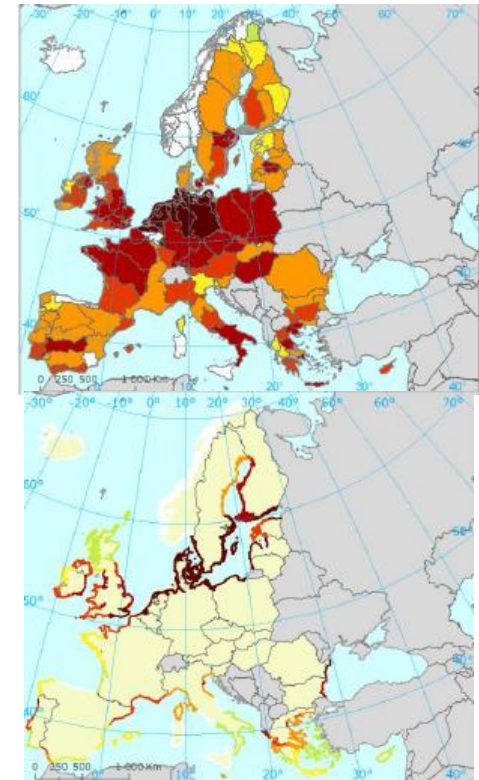
## European overview



## Member State overview

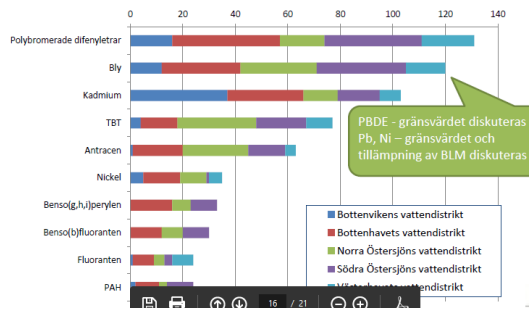
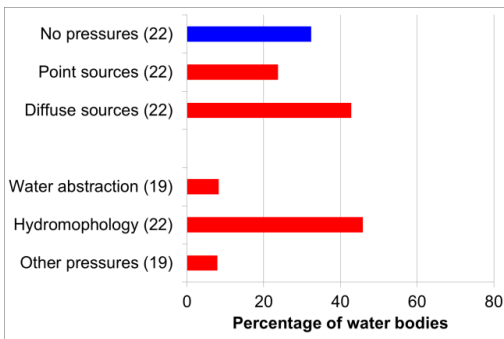


## RBDs overview

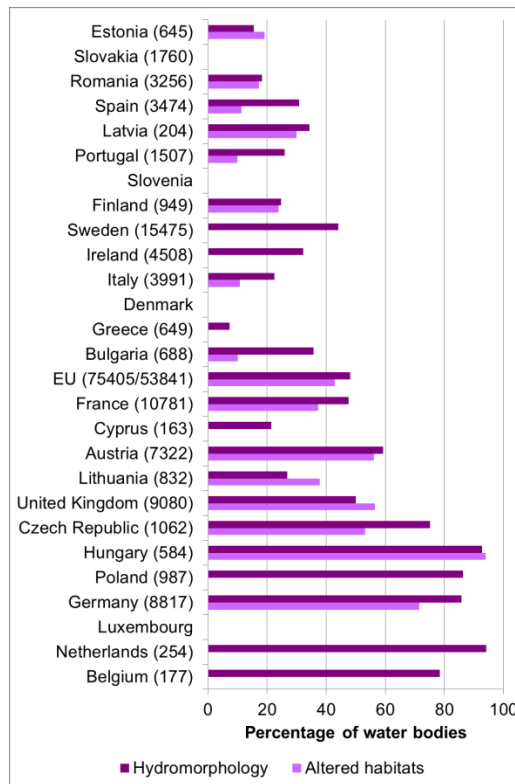


# Pressures, impact etc.

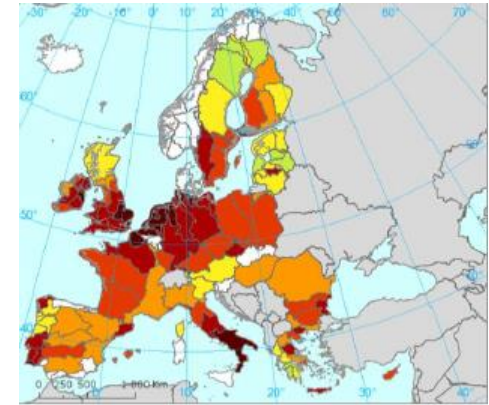
## European overview



## Member state overview



## RBDs overview





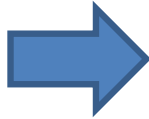
# Challenges in assessing status and progress



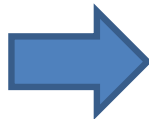


# Overview of status (update of baseline = status 2012-2015)

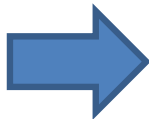
Biological QE  
WB<sub>1</sub>, WB<sub>2</sub>...WB<sub>n</sub>



Physico-Chemical  
WB<sub>1</sub>, WB<sub>2</sub>...WB<sub>n</sub>



Specific pollutants  
WB<sub>1</sub>, WB<sub>2</sub>...WB<sub>n</sub>



Chemical substance  
WB<sub>1</sub>, WB<sub>2</sub>...WB<sub>n</sub>

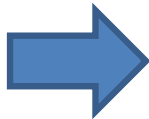
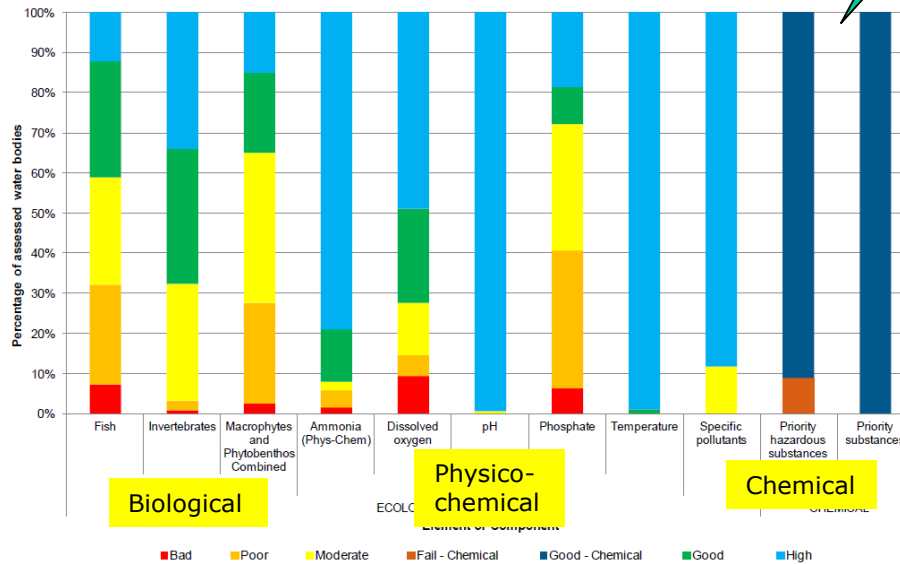


Figure 7: 2013 interim status of quality elements for freshwater surface waters (rivers and canals)

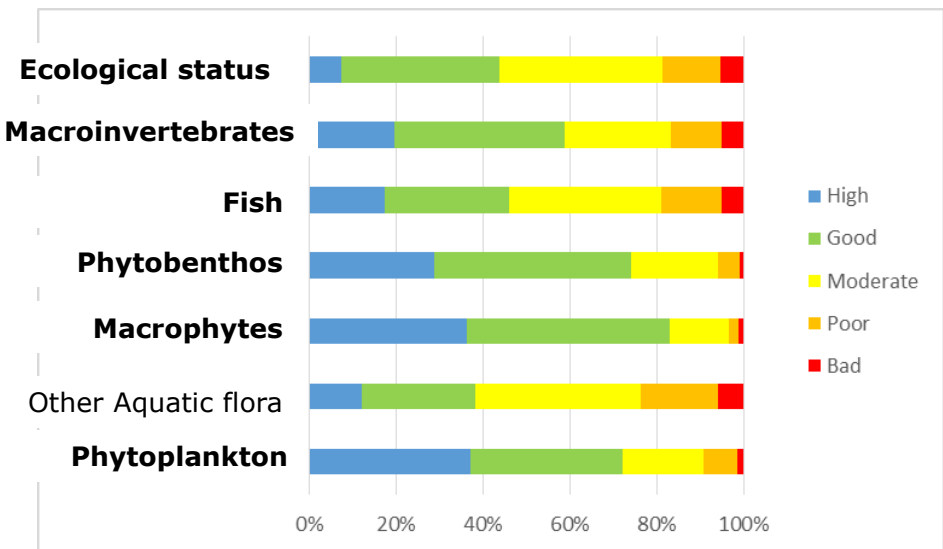


Is the status good or bad?

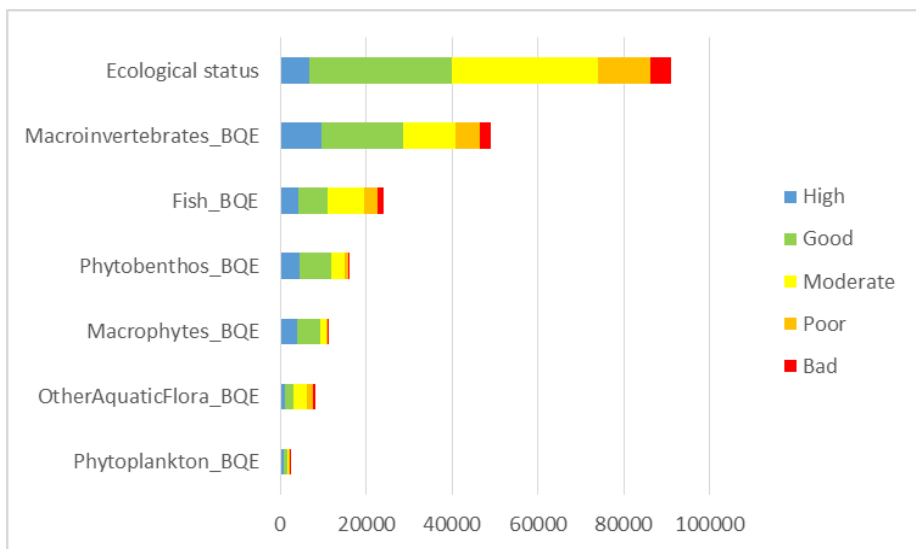


# 1st RBMPs Rivers ecological status/potential and status by Biological Quality Elements

## Europe



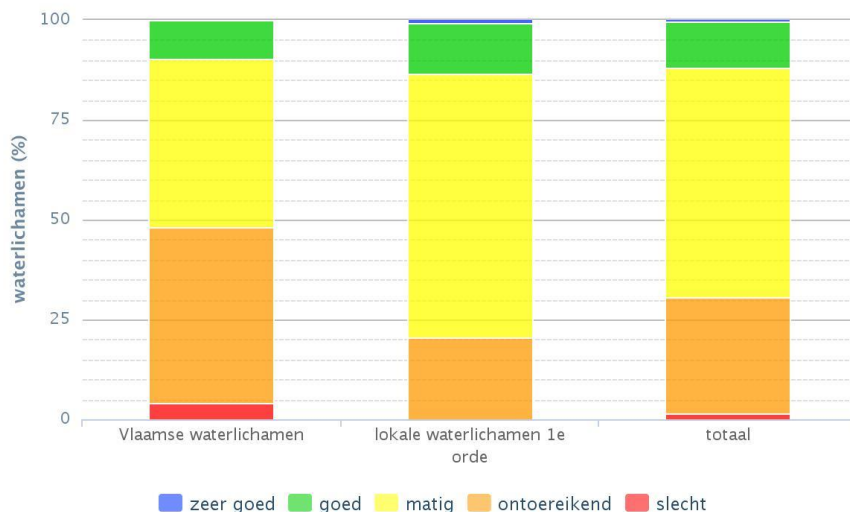
Status of BQEs better than overall ecological status  
One-Out-All\_Out



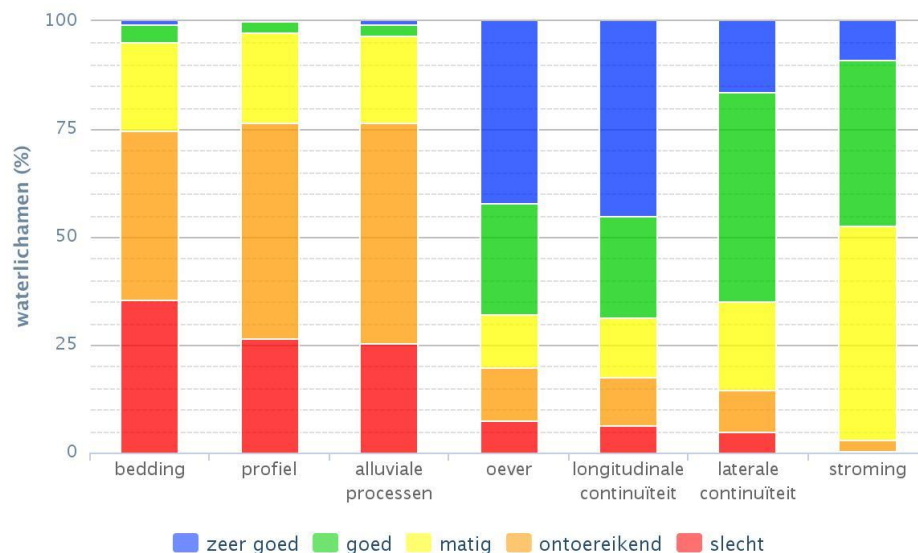
Number of water bodies  
+90 000 water bodies

# Flanders – hydromorphology quality 2000-2013

Hydromorfologische kwaliteit



Deelscores hydromorfologie



bed , alluvial processes banks , longitudinal continuity, lateral continuity, and the flow ,

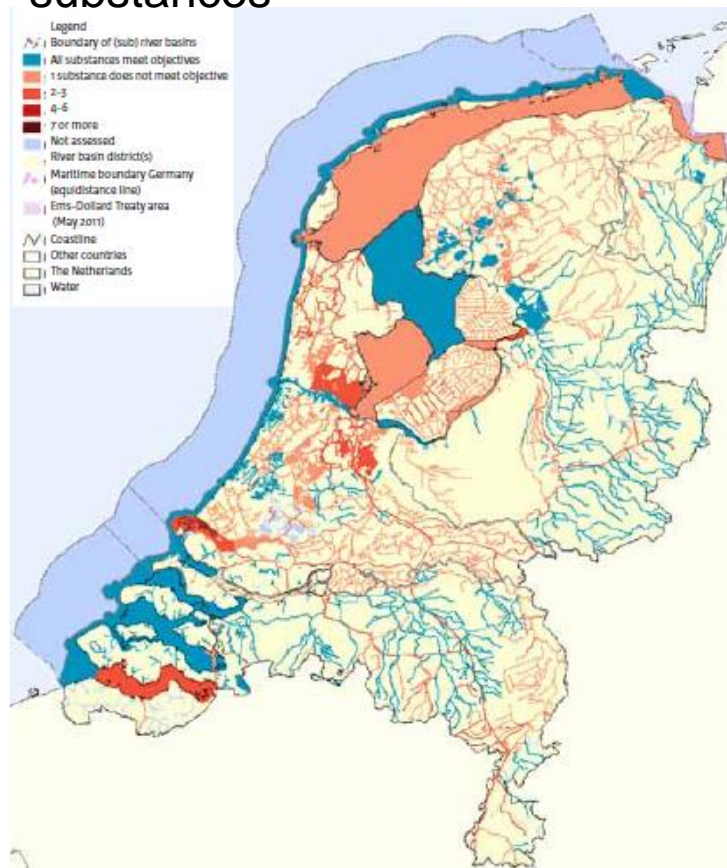


# The Netherlands

Map 3: groundwater quantity, status  
1 January 2015

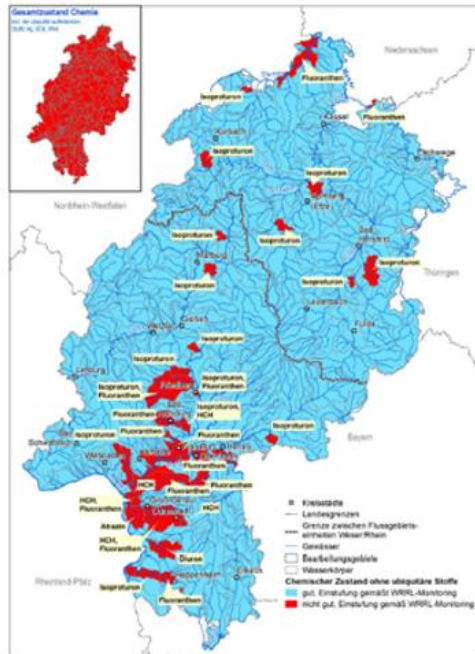


Chemical status for non-ubiquitous  
substances

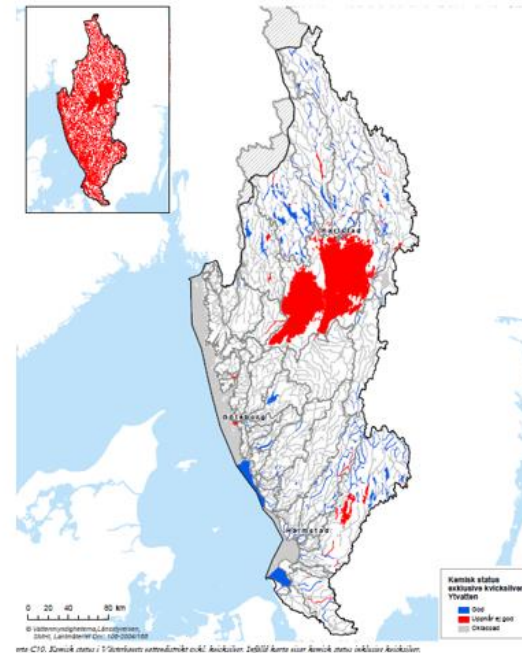


# Chemical status

## Chemical status (**with** and **without** ubiquitous substances)



## Sweden SE5 – with or without mercury



Source: Hesse (Germany) - chemical pressures

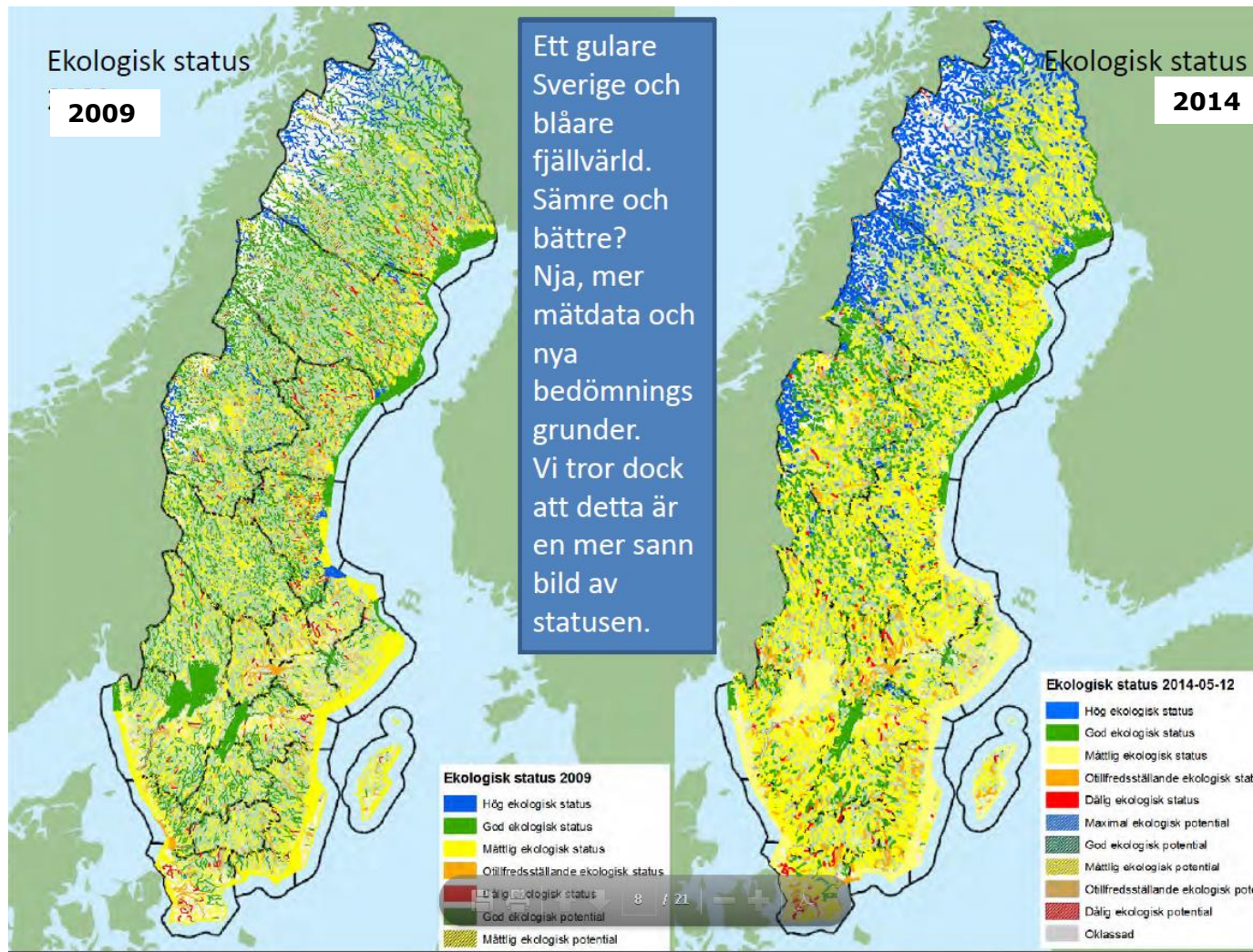




# Change in status

Good

Moderate



High

Moderate



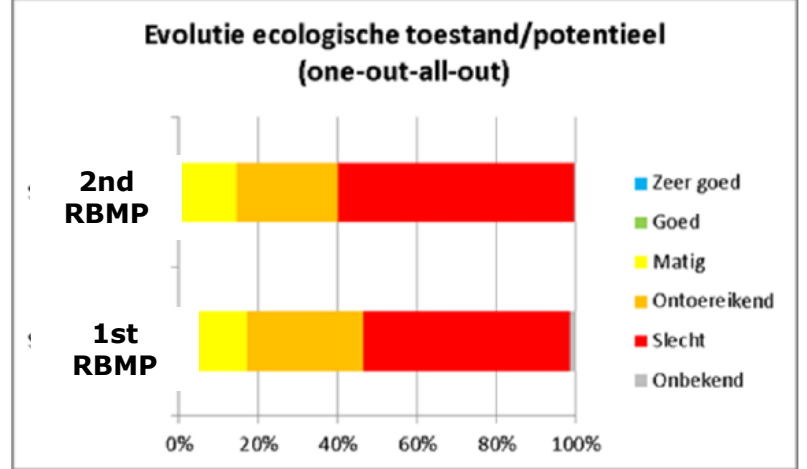


# Change in status

## Sweden change in status 2009 to 2014



## Scheldt Flanders RBD 177 river water bodies



Figuur 86: Evolutie ecologische toestand/potentieel in het SGD Schelde op basis van het one-out-all-out-principe (met n = aantal waterlichamen)

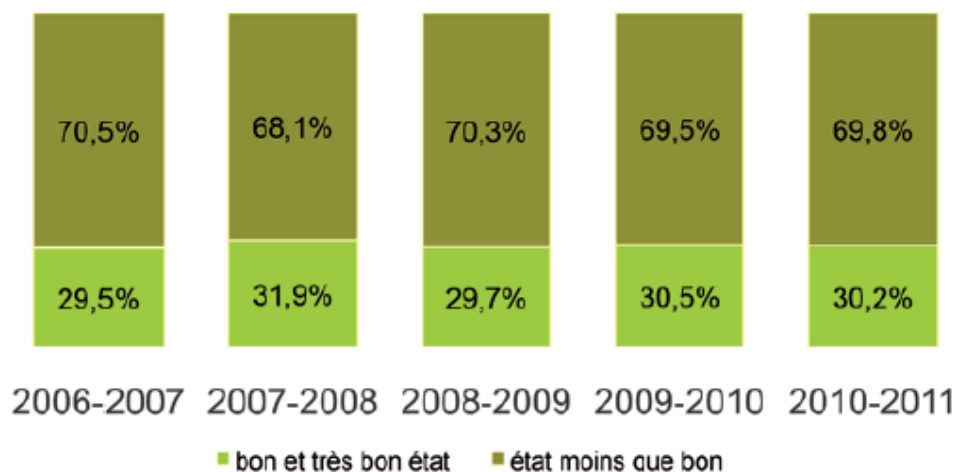
The river basin district of the Scheldt none of the 177 water bodies achieves good ecological status or ecological potential, based on the 'one-out-all-out' principle.

There is little evolution of the final assessment based on the one-out-all-out principle for all water bodies in the river basin district of the Scheldt (see Figure 86).

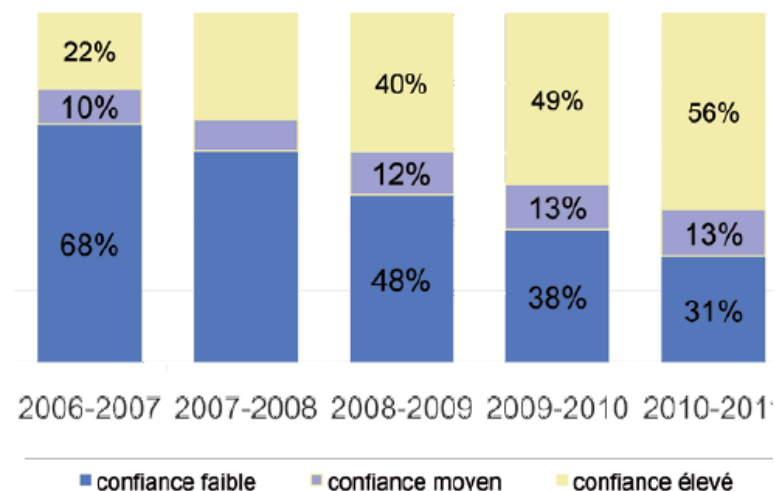
Because the individual elements in the quality RBMP 2016-2021 were evaluated in more bodies of water, each element that is less quality score, the well a negative influence on the final assessment. <google translation>

# Trend in ecological status and confidence

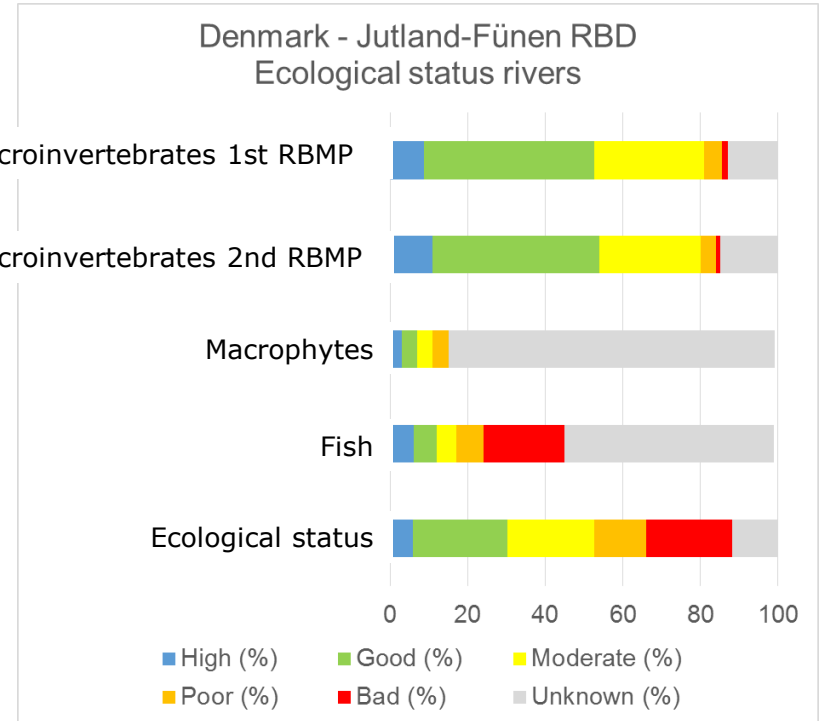
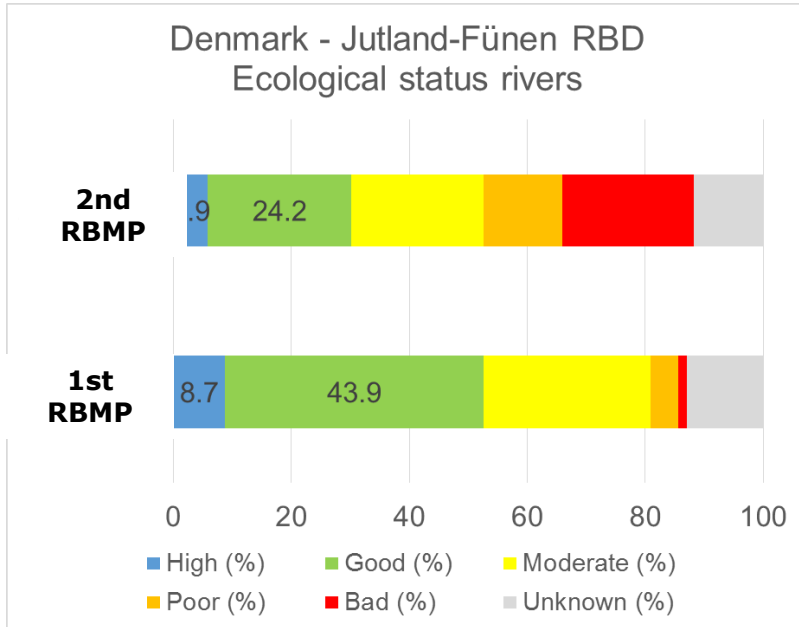
Évolution de l'état écologique des cours d'eau – Fig. III-10



Évolution des niveaux de confiance de l'évaluation des cours d'eau – Fig. III-11

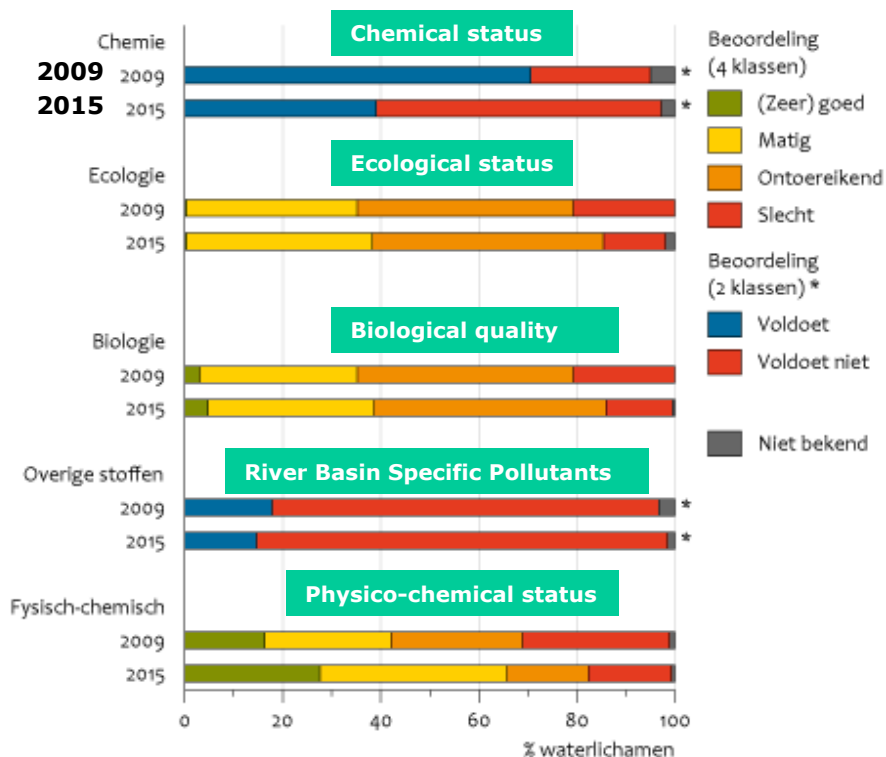


# River Ecological status/potential - DK1 Jutland & Funen RBD, Denmark – 15000 km river



# Dutch surface water bodies

Beoordeling kwaliteit oppervlaktewater volgens Kaderrichtlijn Water



- Deterioration in **chemical status** (*stricter standards and more priority substances monitored*)
- Slight improvement in **ecological status** – less water bodies with poor status.
- Improvement in **physico-chemical status**

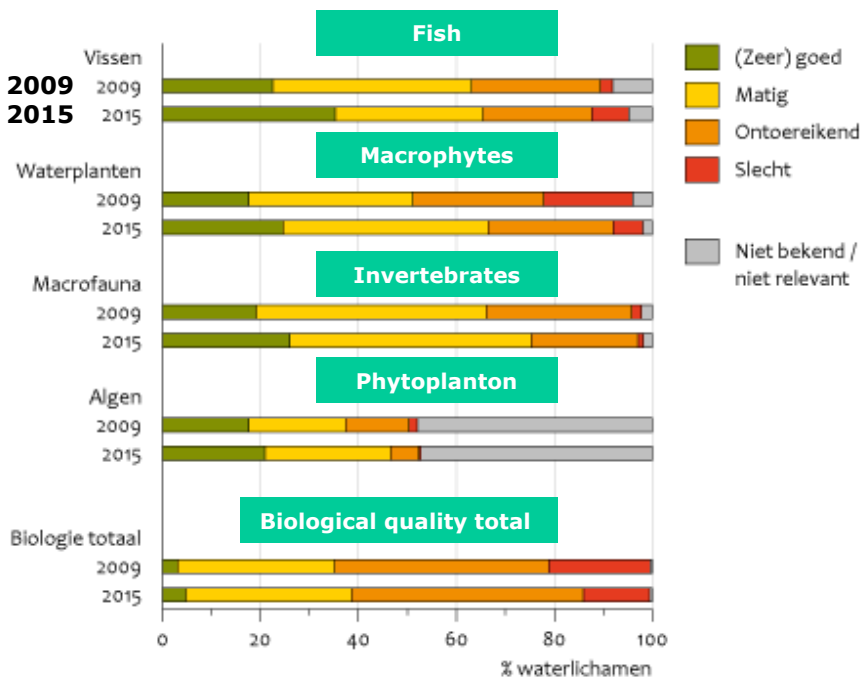
Bron: IHW (Waterschappen, RWS); bewerking PBL.

PBL/dec15  
www.clo.nl/nl143807



# Dutch biological status

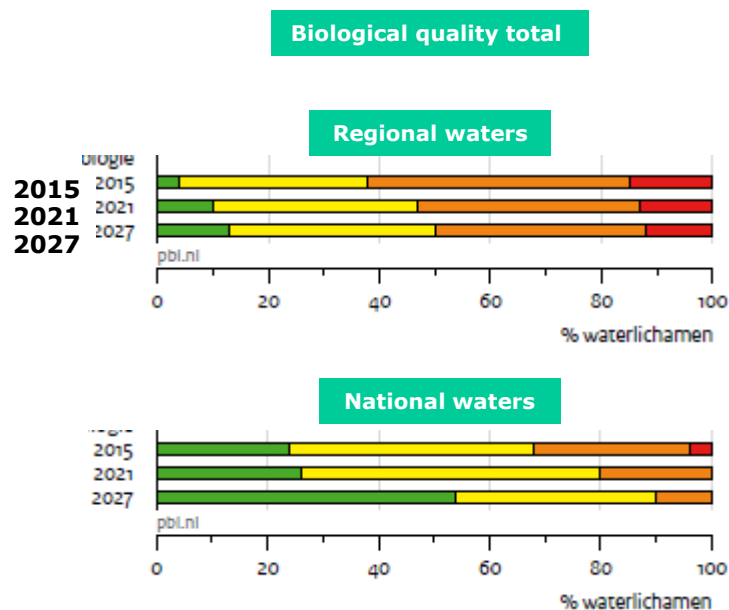
## Biologische kwaliteit van oppervlaktewater volgens Kaderrichtlijn Water



Bron: IHW (Waterschappen, RWS); bewerking PBL.

PBL/dec15  
www.dlo.nl/nl142003

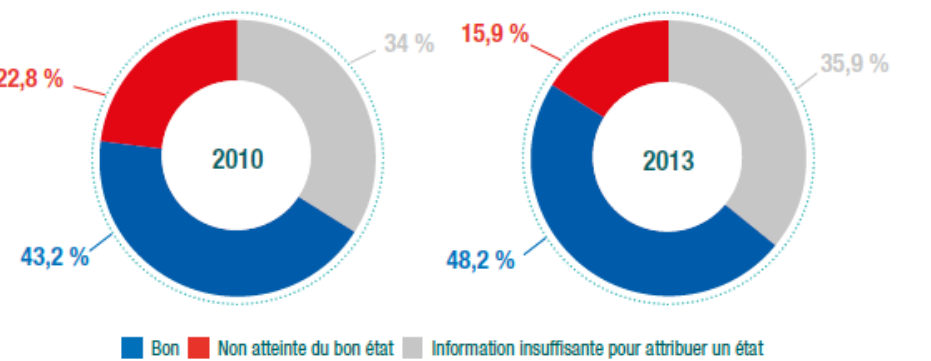
- Biological quality good at 34 out of 711 water bodies. From 3 % in 2009 to 5 % in 2015.



# France – chemical status surface waters

## Répartition des masses d'eau de surface (toutes catégories d'eau confondues) selon l'état chimique

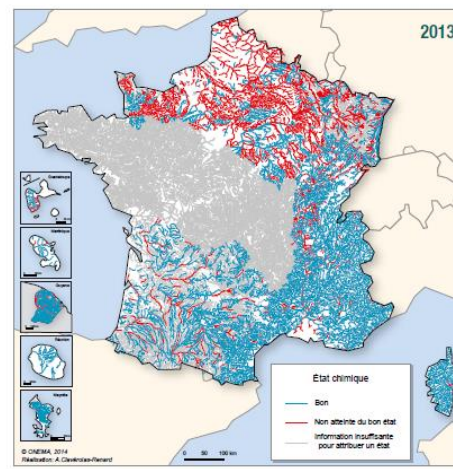
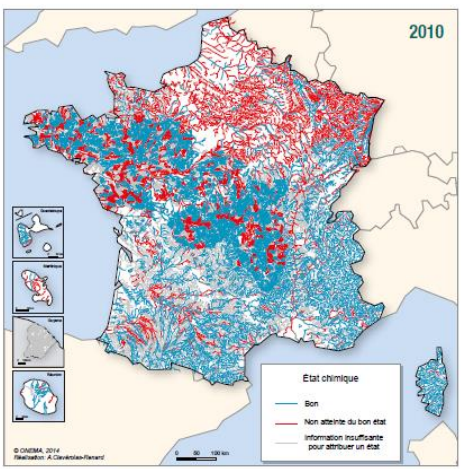
Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)



*Nota bene* : en 2013, le niveau de confiance est élevé pour 15,4 % des masses d'eau, moyen pour 21,6 % et faible pour 26,1 %.

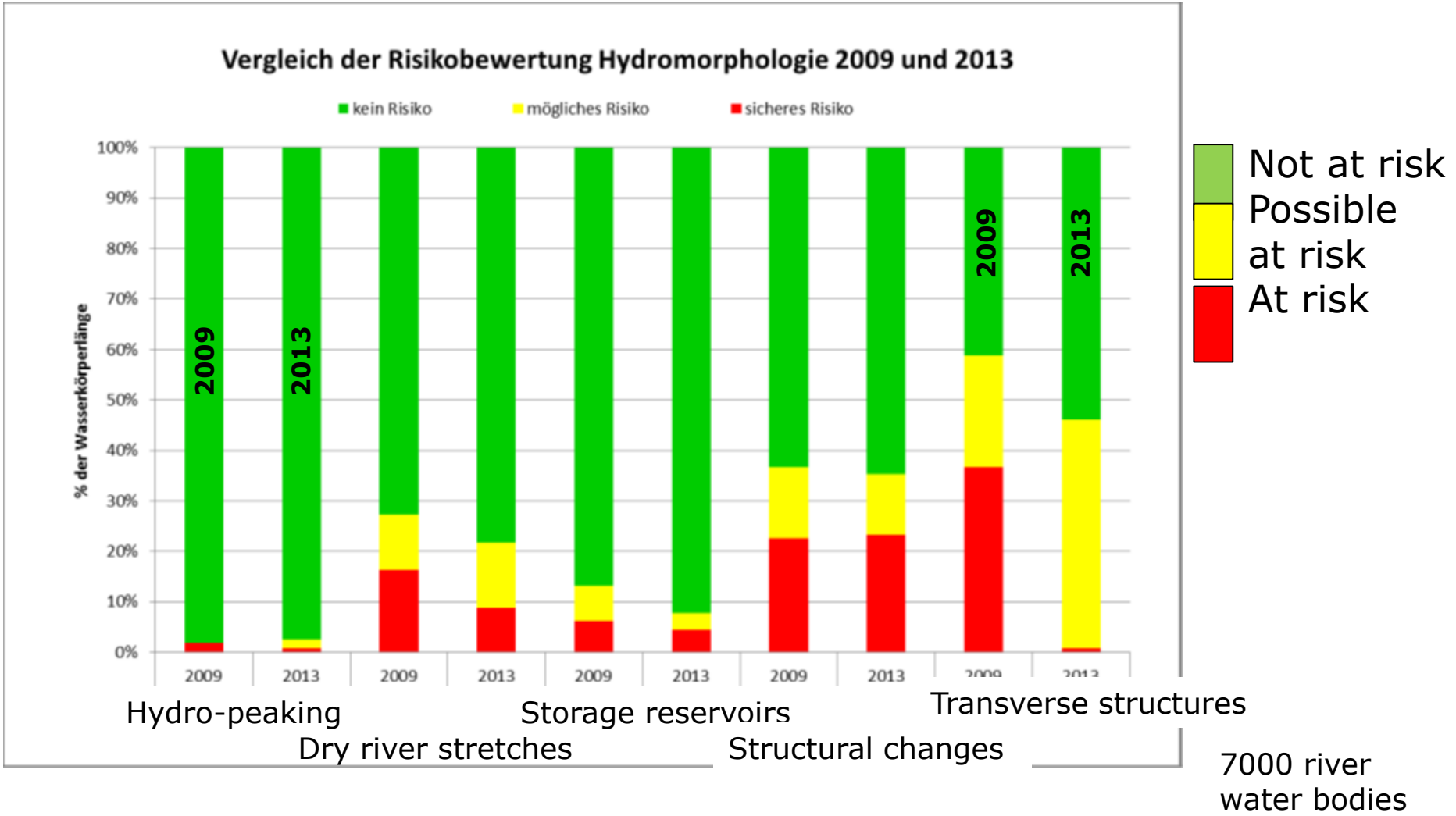
## Etat chimique des masses d'eau « cours d'eau »

Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)





# Austria – Hydromorphological pressures 2009/2013

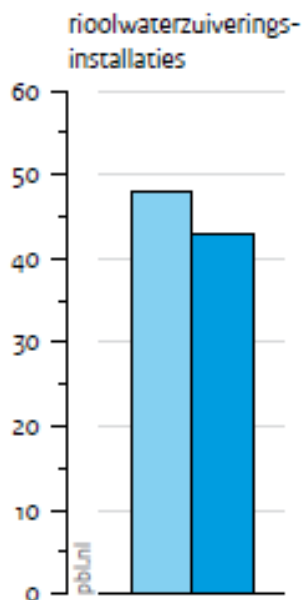


Source: Bundesministerium Für Land- Und Forstwirtschaft, Umwelt Und Wasserwirtschaft, 2014: EU Wasserrahmenrichtlinie 2000/60/EG Österreichischer Bericht der Ist-Bestandsanalyse 2013

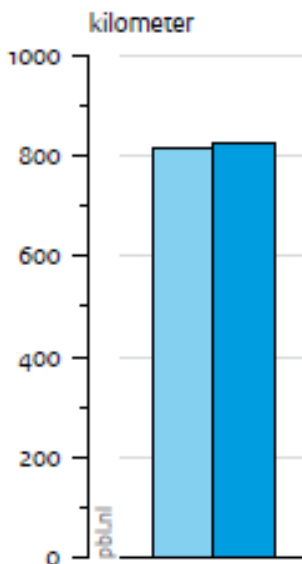


# Figuur 3.2 Maatregelen in eerste stroomgebiedbeheerplannen voor regionale wateren, 2009 – 2015

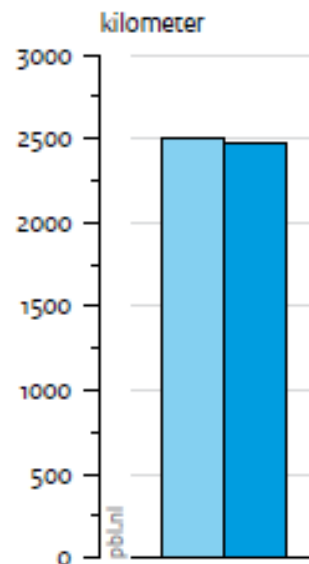
Point sources  
Verminderen belasting  
rioolwaterzuiverings-  
installaties



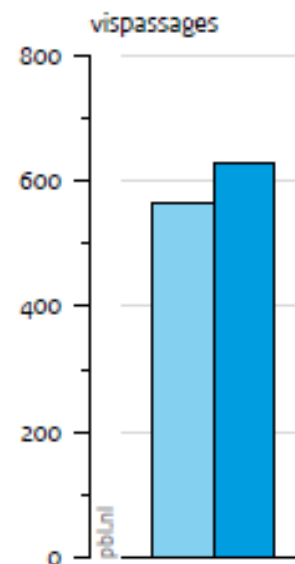
Diffuse sources  
Aanleggen van mest-  
en spuitvrije zones



Morphology  
Aanleggen van natuur-  
vriendelijke oevers /  
hermeanderen



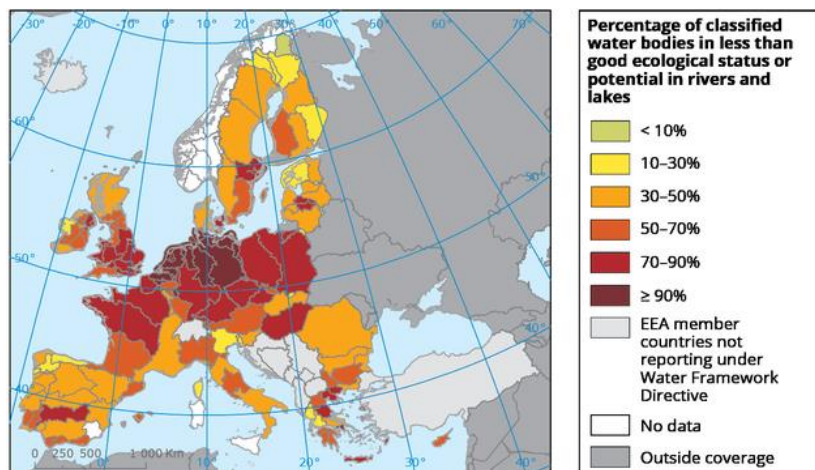
Fish passage  
Aanleg vispassages



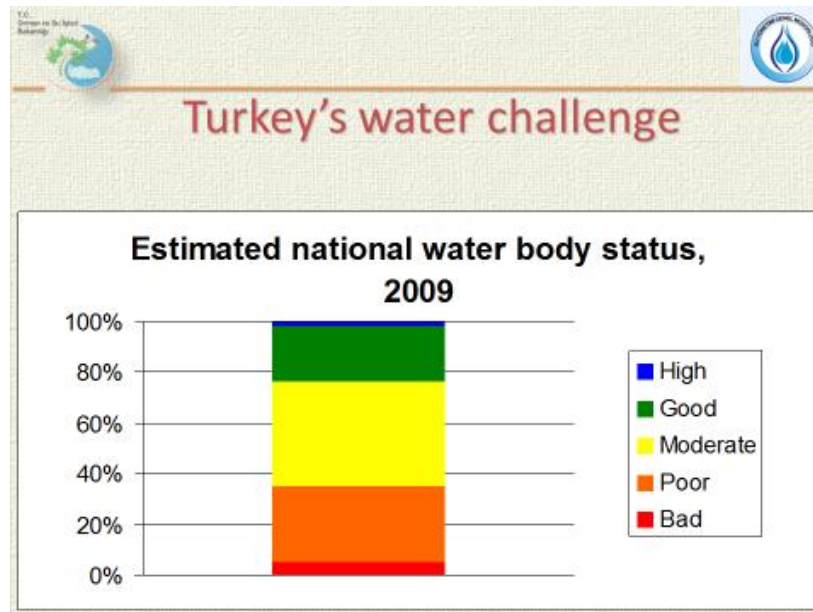
Gepland  
Gerealiseerd, 2014



Ensure that results from the Non-WFD countries are presented in EEAs 2017 State of Water assessment

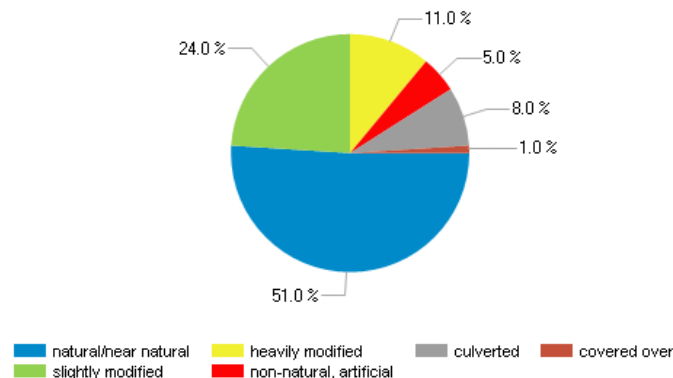


Results from non-WFD countries can probably not be included on WFD maps, but we will aim of finding ways of including results



Source: Bahim (?) Basin management in Turkey [Link](#)

CH Core Indicator Structure of watercourses



Source: FOEN [Link](#)

# Consultation with Member States/EEA member countries

- January 2017 consultation on status and pressure results (1-2 day WG DIS meeting/Eionet NRC consultation)
- May/June 2017 consultation on draft report – (1-2 days Eionet/DIS meeting)

We need your advice, expertise and comments on:

- How the European results on status and pressures are presented.
- Illustration of progress – comparison 1<sup>st</sup> and 2<sup>nd</sup> RBMP period
- Cause-effect relationship between status, pressures and measures implemented during the 1st RBMP period.
- Information on good case studies
- Inclusion of non-WFD countries (session 4 this afternoon)



Additional slides



# Standard output products

## Simple standard query

#	CountryCode	RBDCode	WaterBodyCode	Lenght	NaturalCode
1	PL	PL6000	PLRW60004121169	44.7	Natural
2	PL	PL2000	PLRW20002426829	11.5	Natural
3	PL	PL6000	PLRW6000211971	70.3	Heavily Modifie
4	PL	PL6000	PLRW60002042739	10.1	Heavily Modifie
5	PL	PL6000	PLRW60000456149	28.8	Heavily Modifie
6	PL	PL2000	PLRW2000192726999	27.4	Natural
7	LT	LT1100	LT100103901	12	Natural
8	LT	LT1100	LT120105901	5	Natural
9	LT	LT1100	LT100121205	4	Natural
10	LT	LT1100	LT100113941	22	Natural
11	LT	LT1100	LT100113722	4	Natural
12	BG	BG3000	BG3MA100R220	20.9	Natural
..	..	..	..	..	..
104000	DK	DK1	DK1_001	5.0	Artificial

### European overview

– Natural, HMWB & AWBs by category

Table, graph

### Member state overview

– Natural, HMWB & AWBs by category

Table, graph

### RBDs overview

– Natural, HMWB & AWBs by category and Member State

Table, graph, map

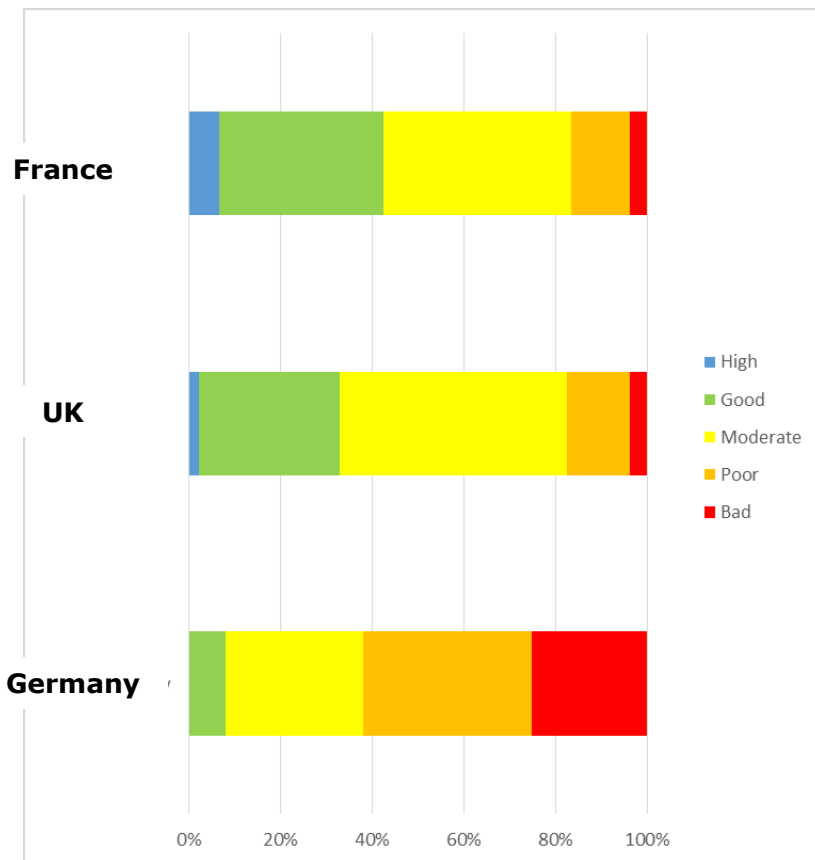
### Dashboard elements

– Natural, HMWB & AWBs

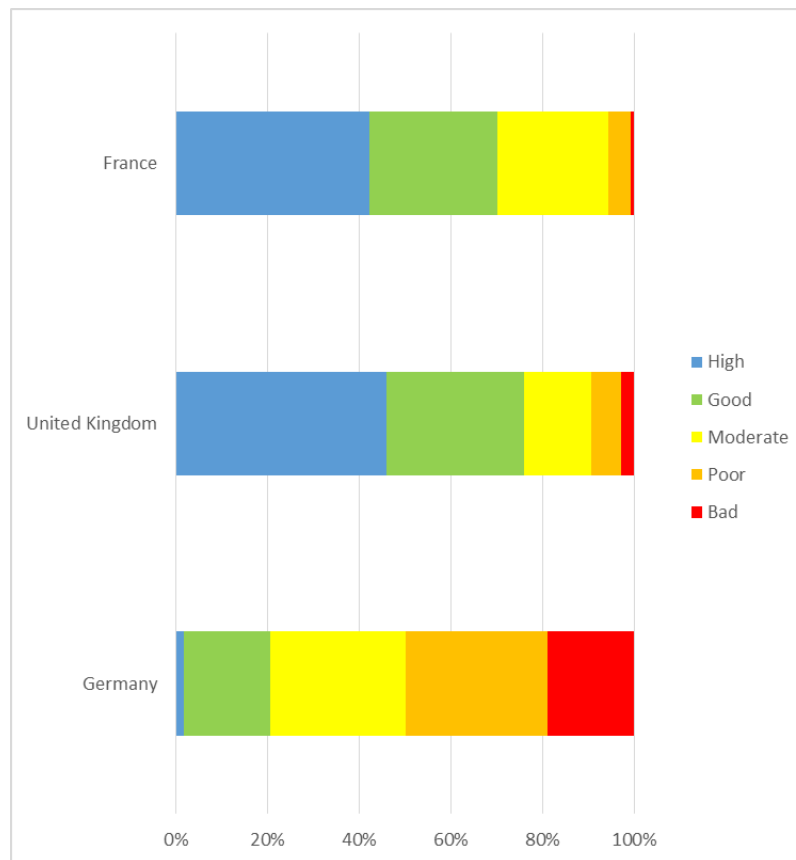
Table, graph

# 1st RBMPs Rivers ecological status/potential and status by macroinvertebrates

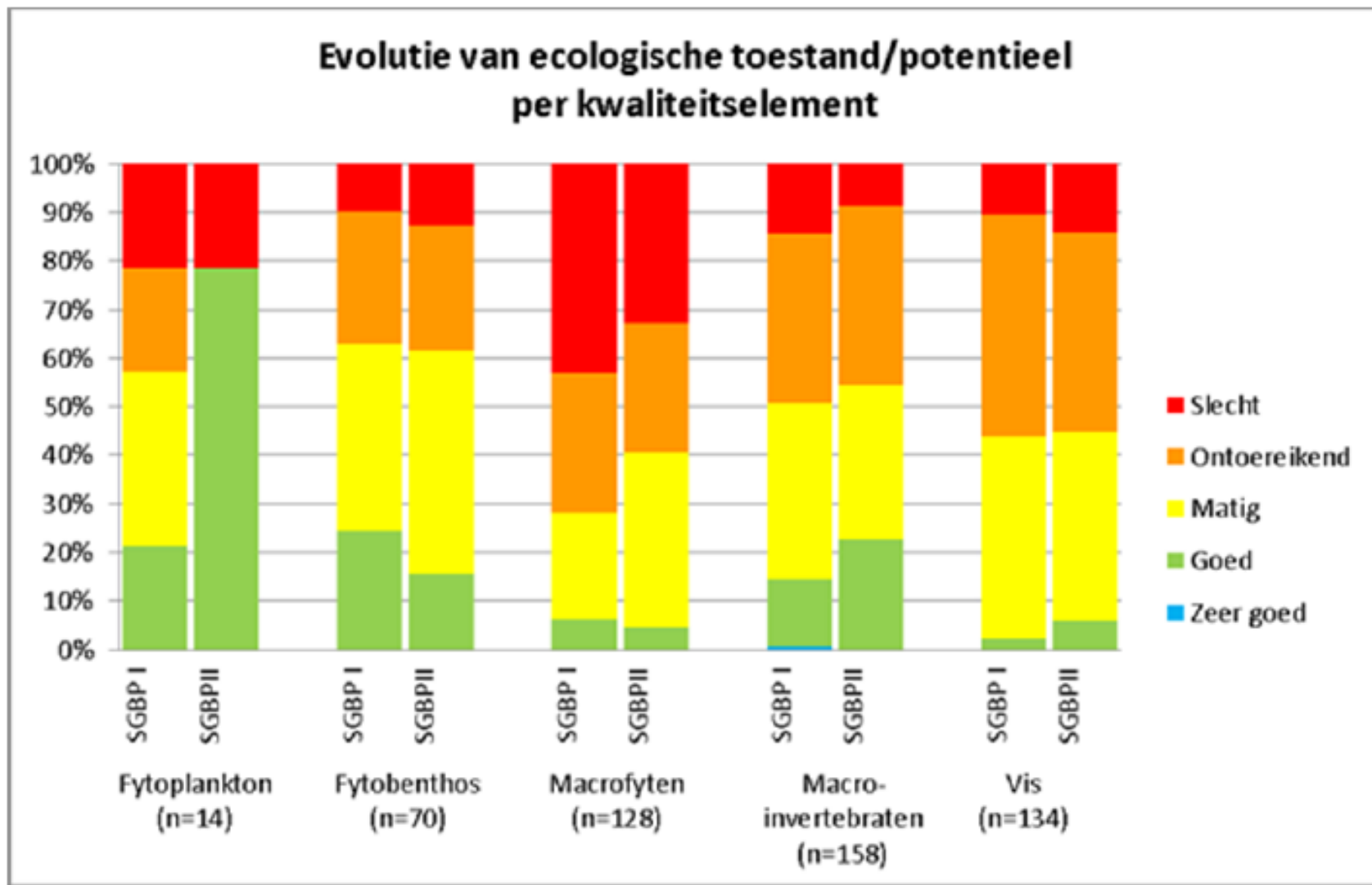
## Ecological status/potential



## Macroinvertebrates



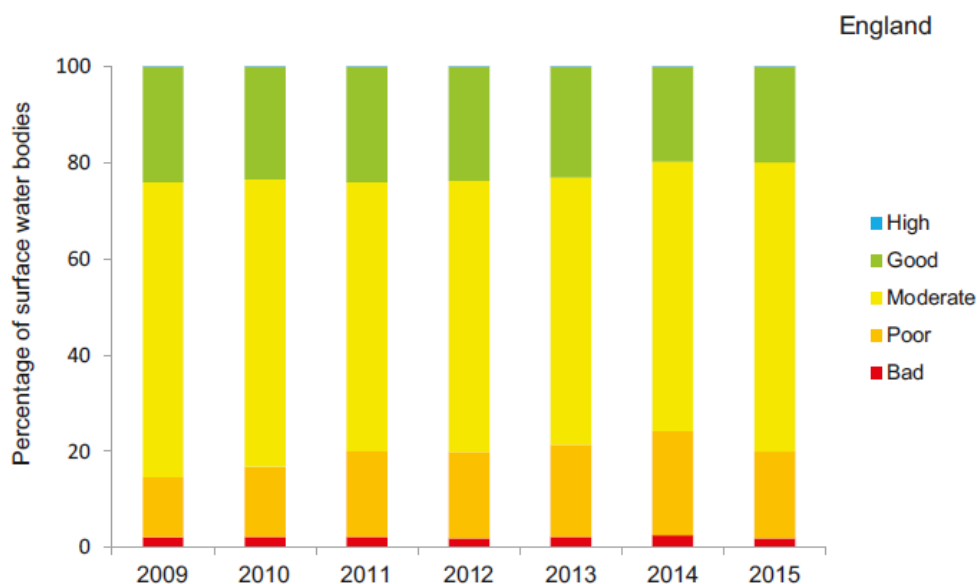
# Change in status by quality elements



**Figuur 88: Vergelijking toestandsbeoordeling per kwaliteitselement SGBP 2010-2015 ten opzichte van SGBP 2016-2021 voor het stroomgebieddistrict Schelde (met n = aantal bemonsterde waterlichamen)**



## Classification of surface water body status in England 2009-2015



Over 5 500 waterbodies were assessed in each year of the indicator, including rivers, canals, lakes, estuaries and coastal waters.

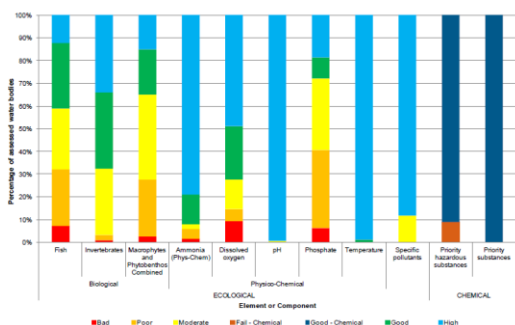
There was a **decrease** in the overall number of water bodies awarded high or good surface water status between 2010 and 2015.

In 2015, 20 % of surface water bodies assessed under WFD in England were in high or good status compared to 23 % in 2010

## Ecological status - England

### Current status

- **17% of surface water bodies** in England are at good or better ecological status or potential now.
- **79% of the elements** that define surface water ecological status are at good or better now.



### Predicted status (2021)

294 surface water bodies (**6.3%**) in England are predicted **to improve by at least one ecological status class by 2021**.

Of these 166 (**4 %**) are predicted to **improve to good or better ecological status by 2021**

860 ecological status elements (**2.6%**) are predicted to improve by at least one status class by 2021.

Of these 509 (**1 %**) are predicted to improve to good or better ecological status by 2021

677 surface water bodies (**14.5%**) in England have at least 1 ecological status element predicted to improve by at least 1 status class by 2021





# River Derwent

➔ Actions to reduce P and improve ecology

➔ Continuing to see element level improvements

Classification Year	Invertebrate Class	Diatom Class	Macrophyte Class	Phosphate Class	Ammonia Class
2009	High	Not Applicable	Moderate	Moderate	High
2010	Good	Poor	Good	Moderate	High
2011	Good	Poor	Good/High	Good	High
2012	Good	Poor	Good	Good	High
2013	High	Good	Good	High	High

Comparison of first and last year

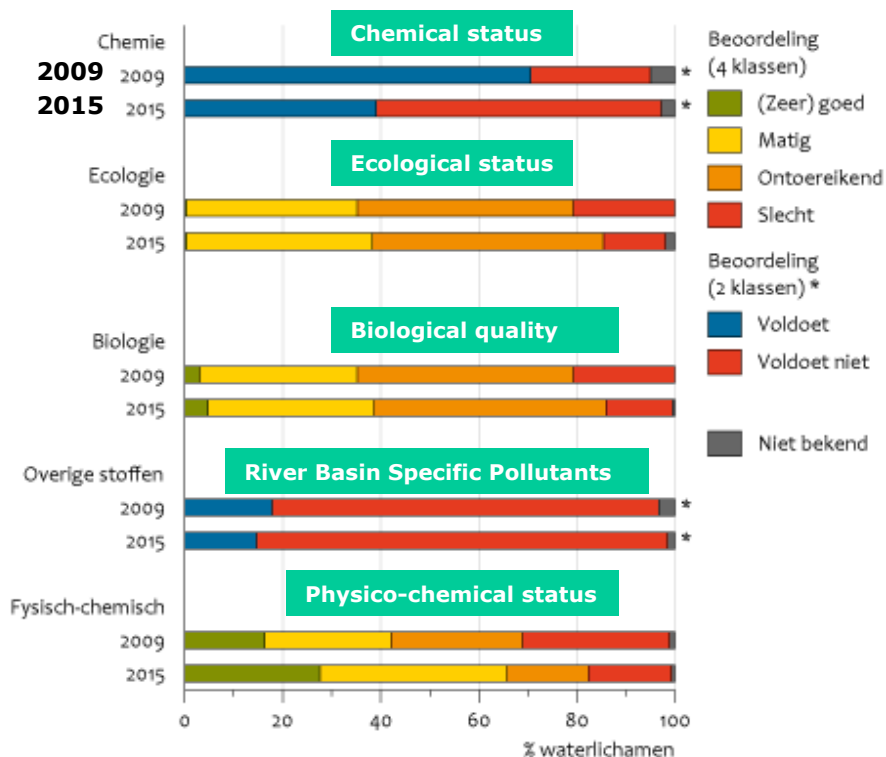
High/High No change	Poor/Good +2 classes	Mod./Good +1 class	Mod./High +2 classes	High/High No change
------------------------	-------------------------	-----------------------	-------------------------	------------------------

Overall improvement 5 classes,  
But high cannot be improved, and PO4  
and NH3 only from moderate to G/H



# Dutch surface water bodies

Beoordeling kwaliteit oppervlaktewater volgens Kaderrichtlijn Water



- Deterioration in **chemical status** (*stricter standards and more priority substances monitored*)
- Slight improvement in **ecological status** – less water bodies with poor status.
- Improvement in **physico-chemical status**

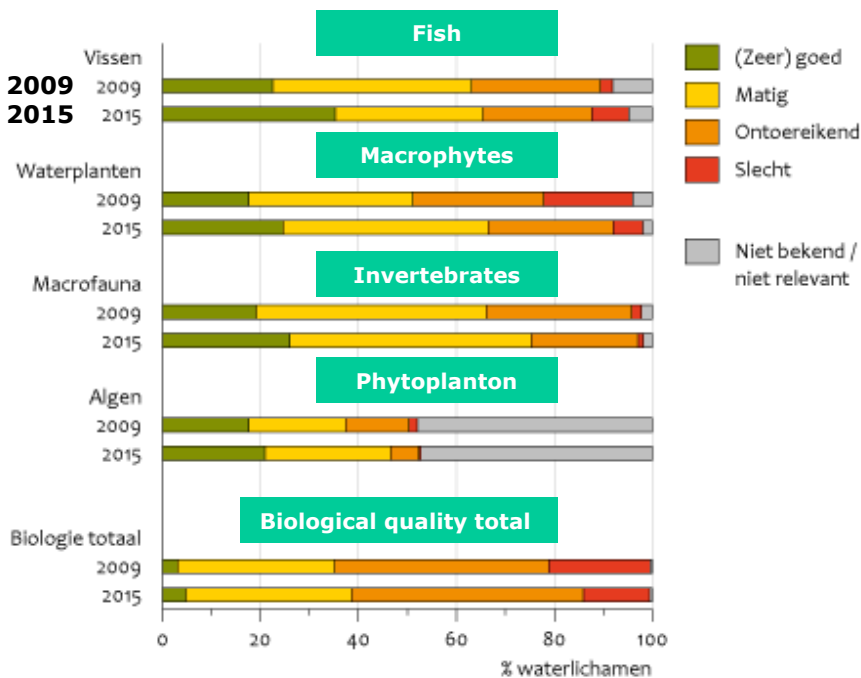
Bron: IHW (Waterschappen, RWS); bewerking PBL.

PBL/dec15  
www.clo.nl/nl143807



# Dutch biological status

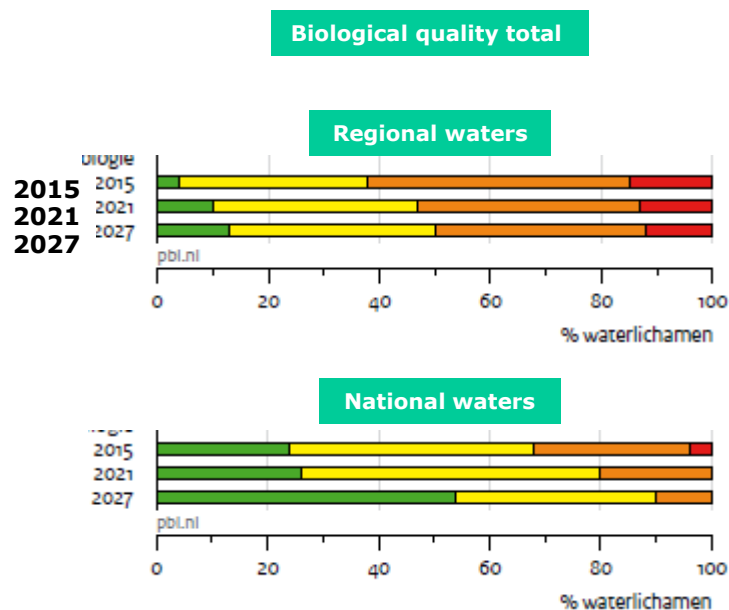
## Biologische kwaliteit van oppervlaktewater volgens Kaderrichtlijn Water



Bron: IHW (Waterschappen, RWS); bewerking PBL.

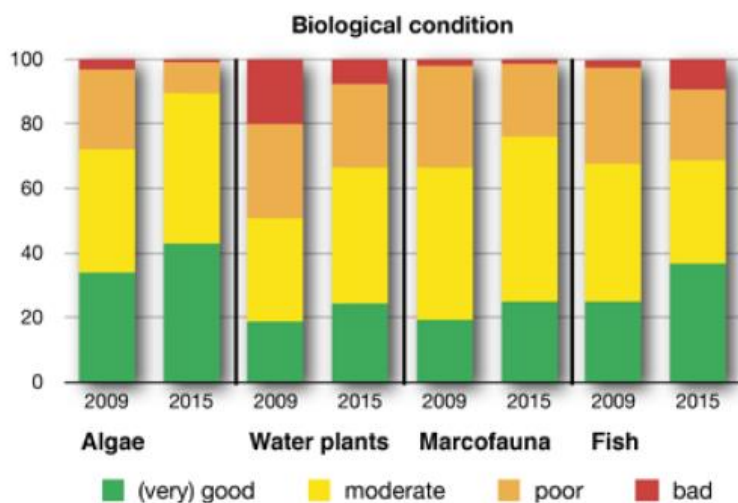
PBL/dec15  
www.dlo.nl/nl142003

- Biological quality good at 34 out of 711 water bodies. From 3 % in 2009 to 5 % in 2015.

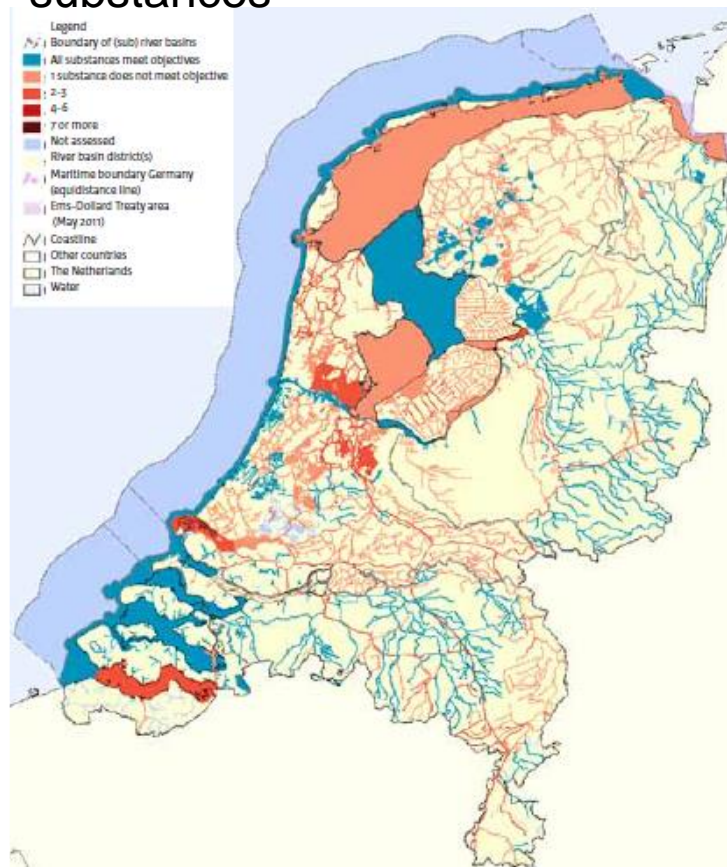


# The Netherlands

Water bodies with assessment of the four biological quality elements in 2009 and 2015



Chemical status for non-ubiquitous substances

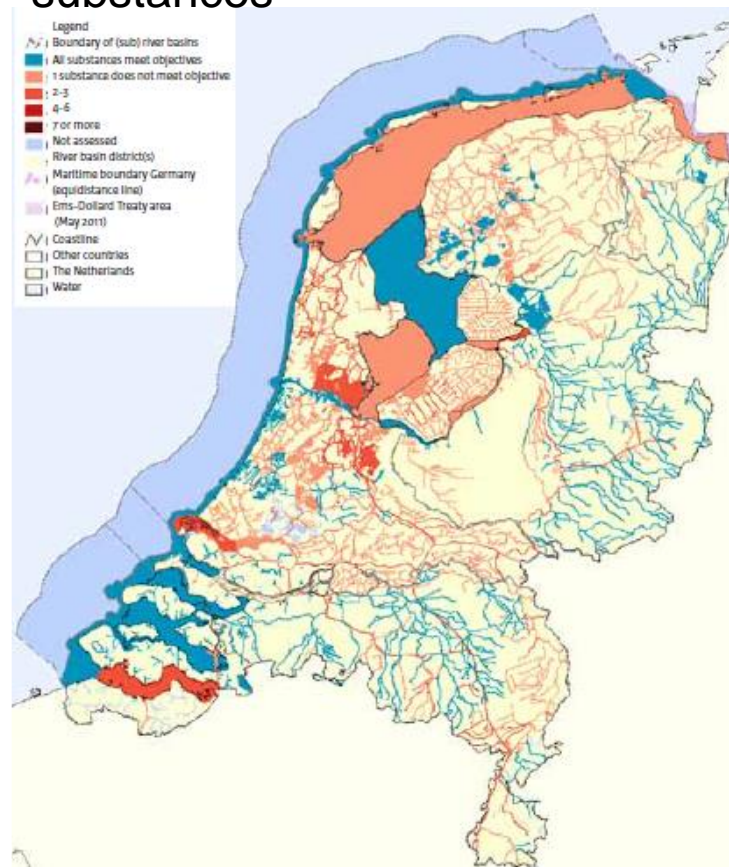


# The Netherlands

Map 3: groundwater quantity, status  
January 2015



1 Chemical status for non-ubiquitous substances





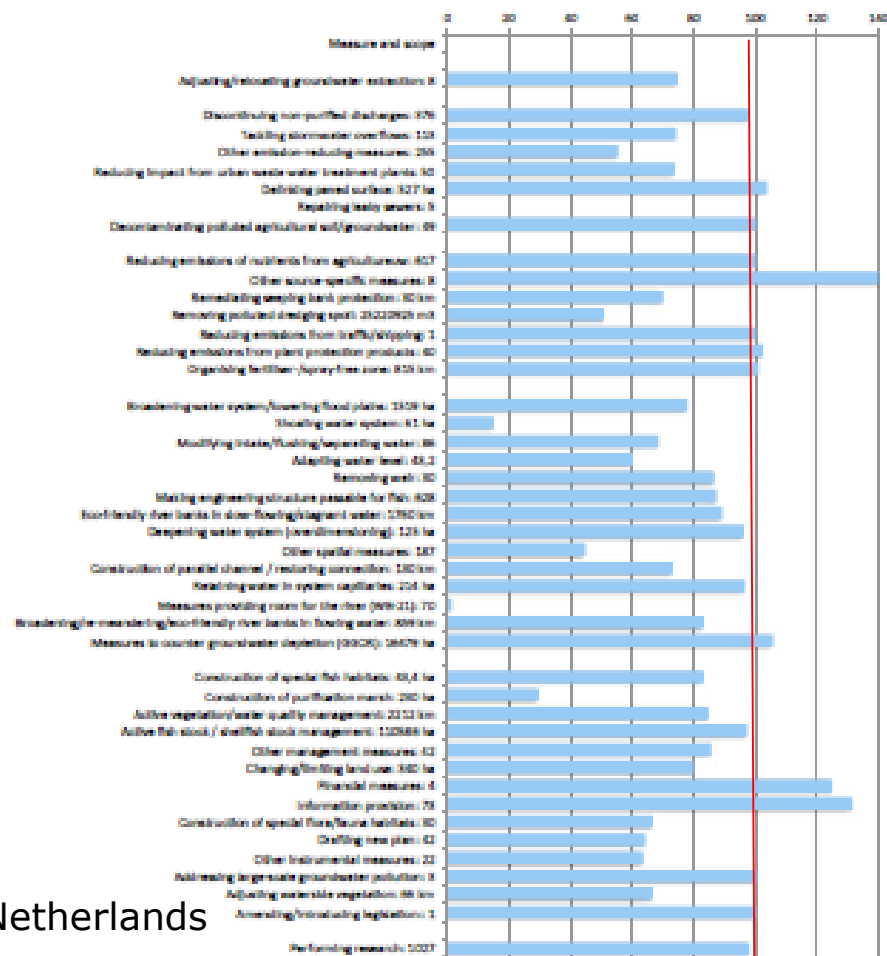
# The Netherlands II

Map 3: groundwater quantity, status 1 January 2015



Progress of implementation of River basin management plan 2010-2015, prognosis July 2015 of measures finished on 31 December 2015.

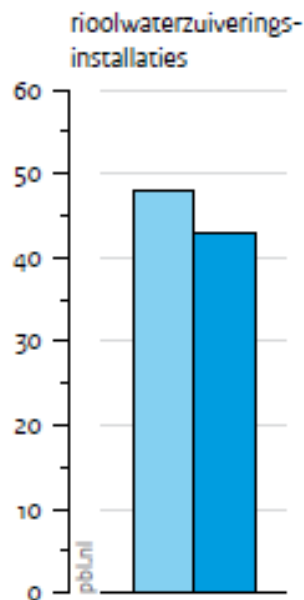
Measures being implemented or completed, the Netherlands (%)



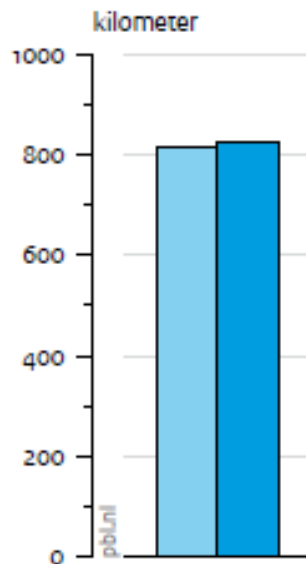


# Figuur 3.2 Maatregelen in eerste stroomgebiedbeheerplannen voor regionale wateren, 2009 – 2015

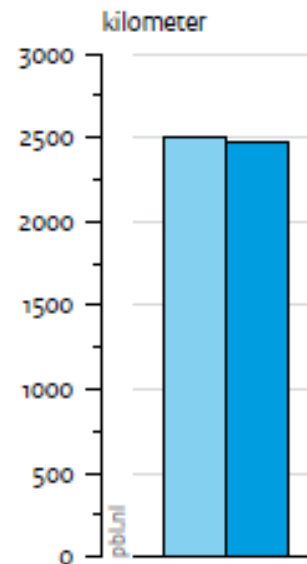
**Puntbronnen:**  
Verminderen belasting  
rioolwaterzuiverings-  
installaties



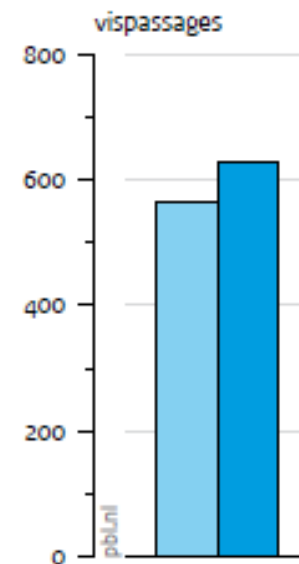
**Diffuse bronnen:**  
Aanleggen van mest-  
en spuitvrije zones



**Hydromorfologie:**  
Aanleggen van natuur-  
vriendelijke oevers /  
hermeanderen



**Inrichting:**  
Aanleg vispassages

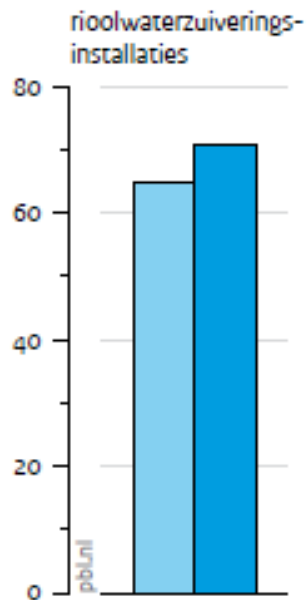


Gepland  
Gerealiseerd, 2014

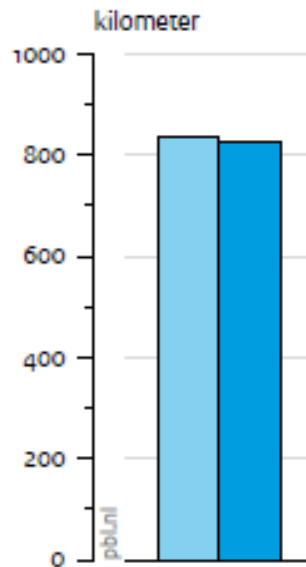


# Figuur 4.3 Maatregelenpakket in stroomgebiedbeheerplannen voor regionale wateren, 2009 – 2027

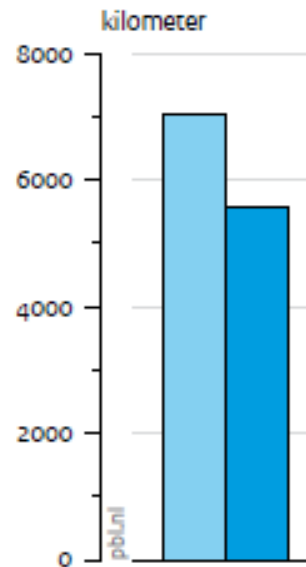
**Puntbronnen:**  
Verminderen belasting  
rioolwaterzuiverings-  
installaties



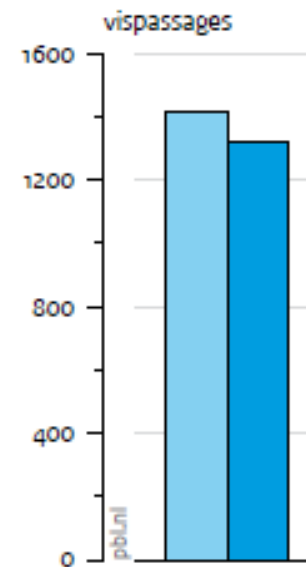
**Diffuse bronnen:**  
Aanleggen van mest-  
en spuitvrije zones





**Hydromorfologie:**  
Aanleggen van natuur-  
vriendelijke oevers /  
hermeanderen



**Inrichting:**  
Aanleg vispassages



 Eerste stroomgebiedbeheerplannen  
 Tweede stroomgebiedbeheerplannen

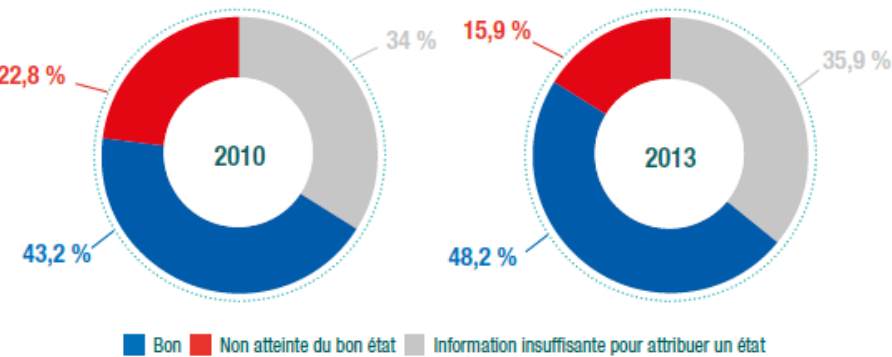
Bron: IHW, bewerking PBL



# France – chemical status surface waters

## Répartition des masses d'eau de surface (toutes catégories d'eau confondues) selon l'état chimique

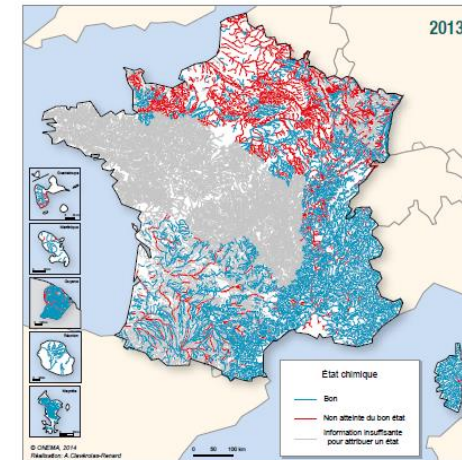
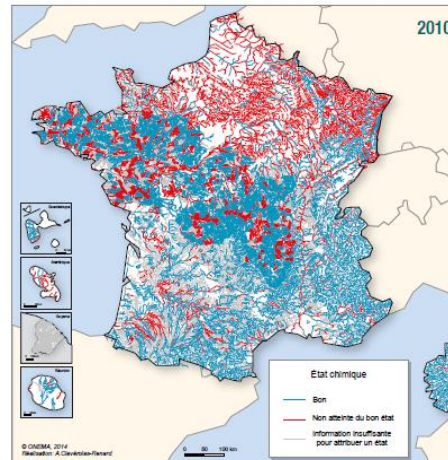
Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)



*Nota bene* : en 2013, le niveau de confiance est élevé pour 15,4 % des masses d'eau, moyen pour 21,6 % et faible pour 26,1 %.

## Etat chimique des masses d'eau « cours d'eau »

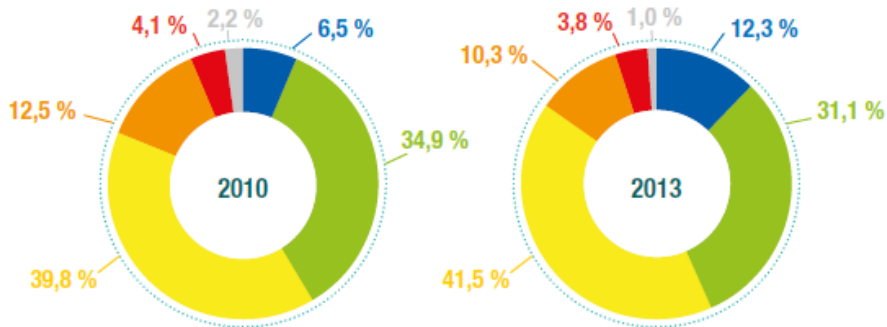
Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)



# France – ecological status surface waters

## Répartition des masses d'eau de surface (toutes catégories d'eau confondues) selon l'état écologique

Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)

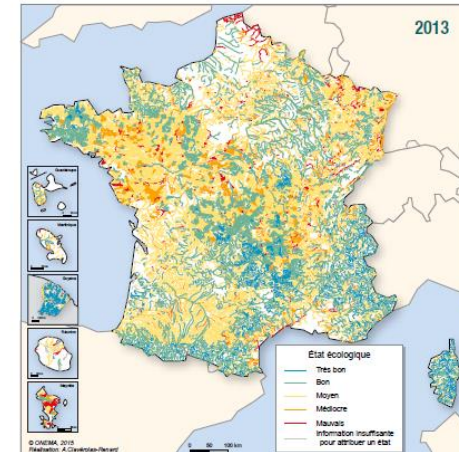
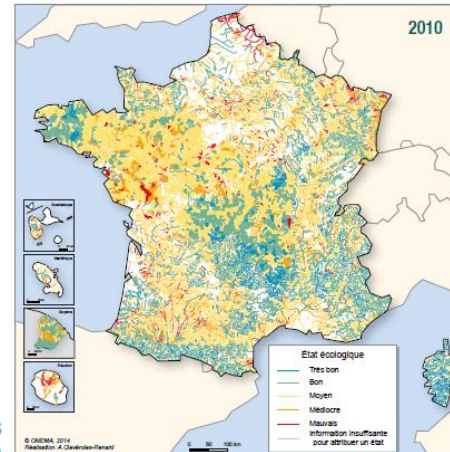


■ Très bon ■ Bon ■ Moyen ■ Médiocre ■ Mauvais ■ Information insuffisante pour attribuer un état

*Nota bene* : le niveau de confiance s'est nettement amélioré en passant de 33,2% en 2010 à 46,1% en 2013 pour les niveaux élevé et moyen. Cette évolution est due à l'important effort d'acquisition de données résultant de l'augmentation de la surveillance et de l'amélioration des méthodes, comme le développement de nouveaux outils de bio-indication.

## Etat écologique des masses d'eau « cours d'eau »

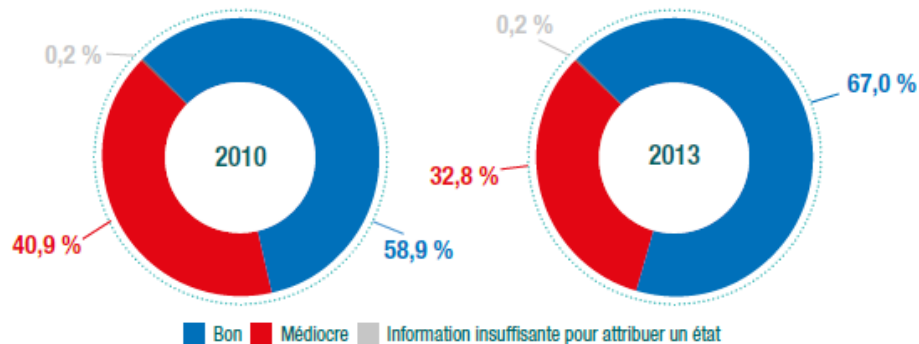
Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)



# France – chemical and quantitative status groundwater

## Répartition des masses d'eau souterraine selon l'état chimique

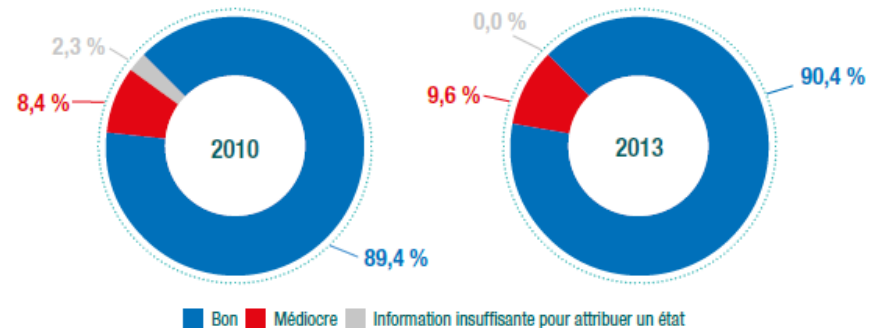
Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)



*Nota bene* : le niveau de confiance n'est pas précisé car ces informations ne sont pas systématiquement demandées.

## Répartition des masses d'eau souterraine selon l'état quantitatif

Source : Rapportage mars/octobre 2010 / États des lieux 2013 - Données transmises par les secrétariats techniques de bassin (STB)



*Nota bene* : le niveau de confiance n'est pas précisé car ces informations ne sont pas systématiquement demandées.

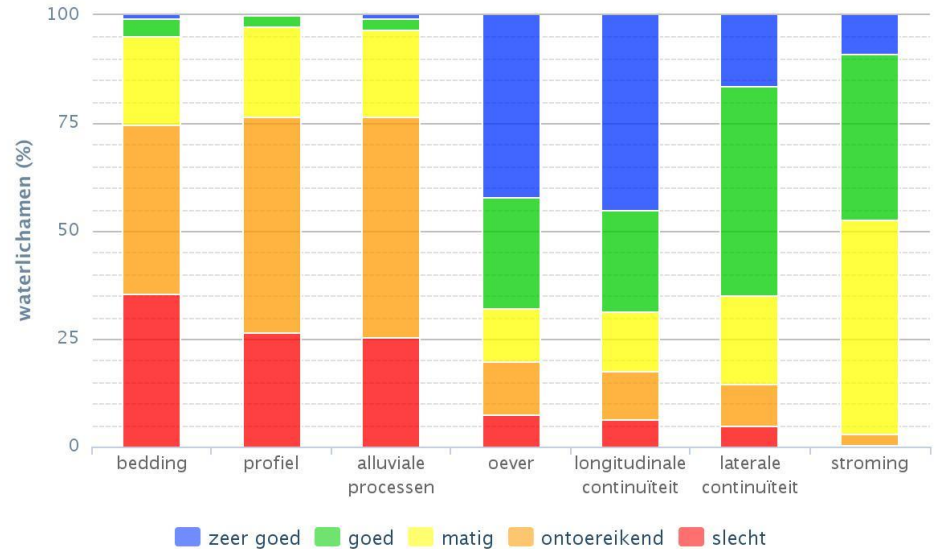


# Flanders – hydromorphology quality 2000-2013

Hydromorfologische kwaliteit



Deelscores hydromorfologie



bed , alluvial processes banks , longitudinal continuity, lateral continuity, and the flow ,

