

German Environment Agency

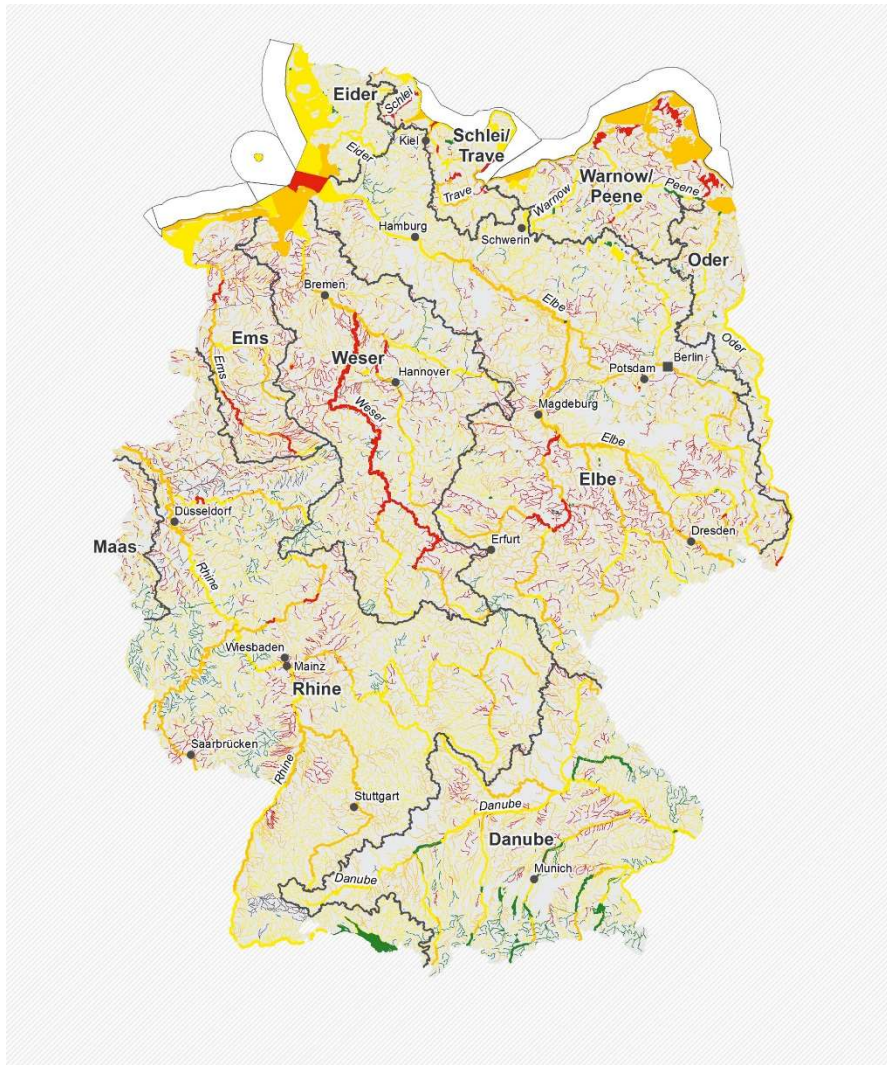
Umwelt 
Bundesamt

Status of nutrient input into waters in Germany

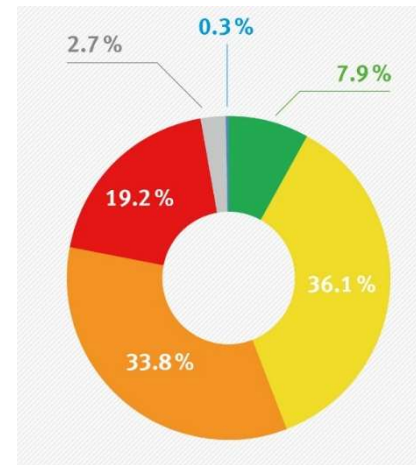
Jeanette Völker, Section Inland Waters

4th Coastal Biogas Conference, 9th December 2020, online

Results of the Water Framework Directive in Germany, 2015



Ecological status/potential



■ high
 ■ good
 ■ moderate
 ■ poor
 ■ bad
 ■ not assessed

- Failure caused by
 - Too much nutrients (No 1 for lakes & Coastal waters)
 - Hydromorphological modifications (No 1 for rivers)
 - Hazardous substances
- None of the coastal and transitional waterbodies reach high or good ecological status/potential caused by nutrient conditions

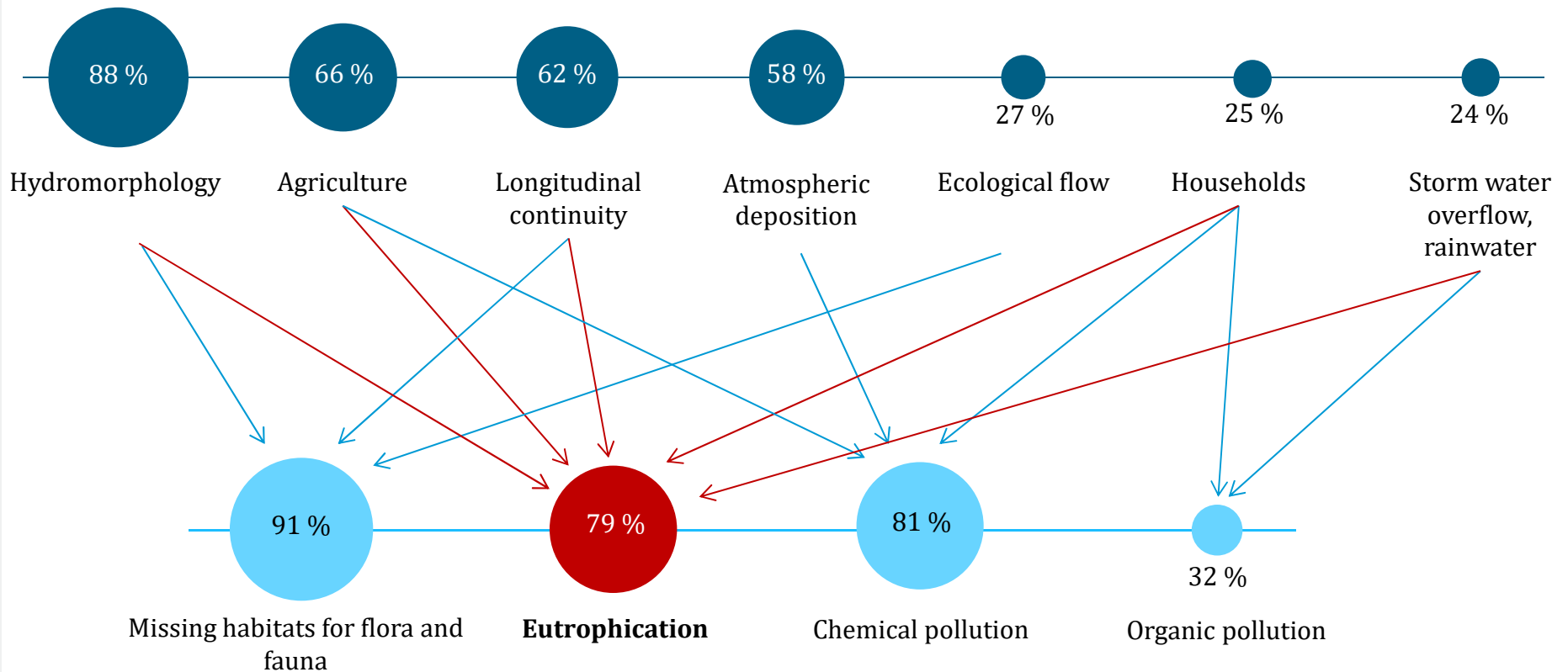
■ high
 ■ good
 ■ moderate
 ■ poor
 ■ bad
 ■ not assessed
 no ecological status assessment necessary

Spatial base data: Geo-Basis-DE/BKG 2015

Technical data: Berichtsportal WasserBLICK/BFG; Last updated 23.03.2016; Adaptation/editing: Umweltbundesamt, based on Bund/Länder-Arbeitsgemeinschaft Wasser (LAWA) data.

Source: BMU/UBA 2016

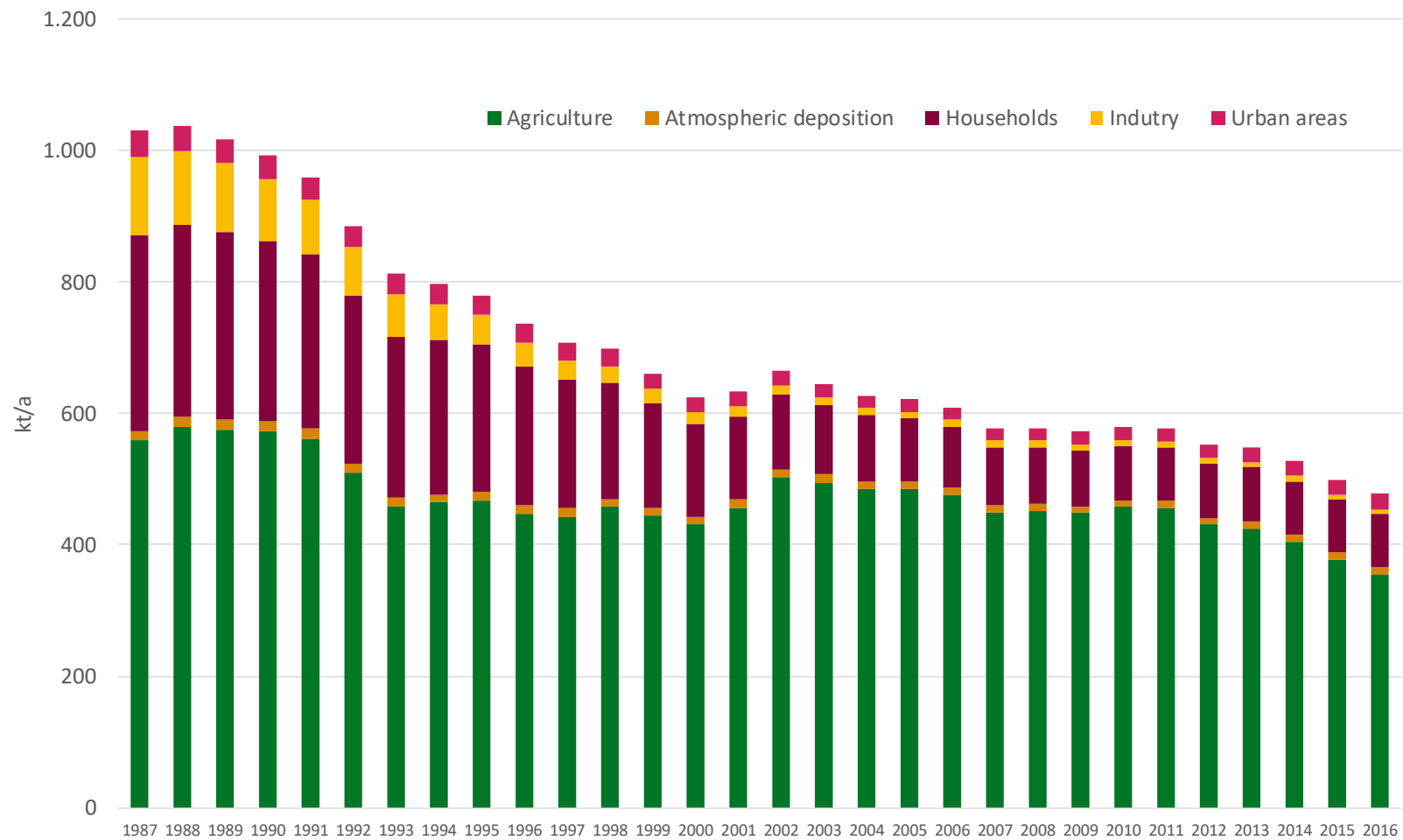
Water Framework Directive - drivers, pressures and impacts



Technical data: Berichtsportal WasserBLiCK/BfG; last updated 23 March 2016. Adaptation/editing: Umweltbundesamt, based on Bund/Länder-Arbeitsgemeinschaft Wasser (LAWA) data.

Datenquelle: Berichtsportal WasserBLiCK/BfG, Stand: 23.03.2016. Völker (2017), unveröffentlicht

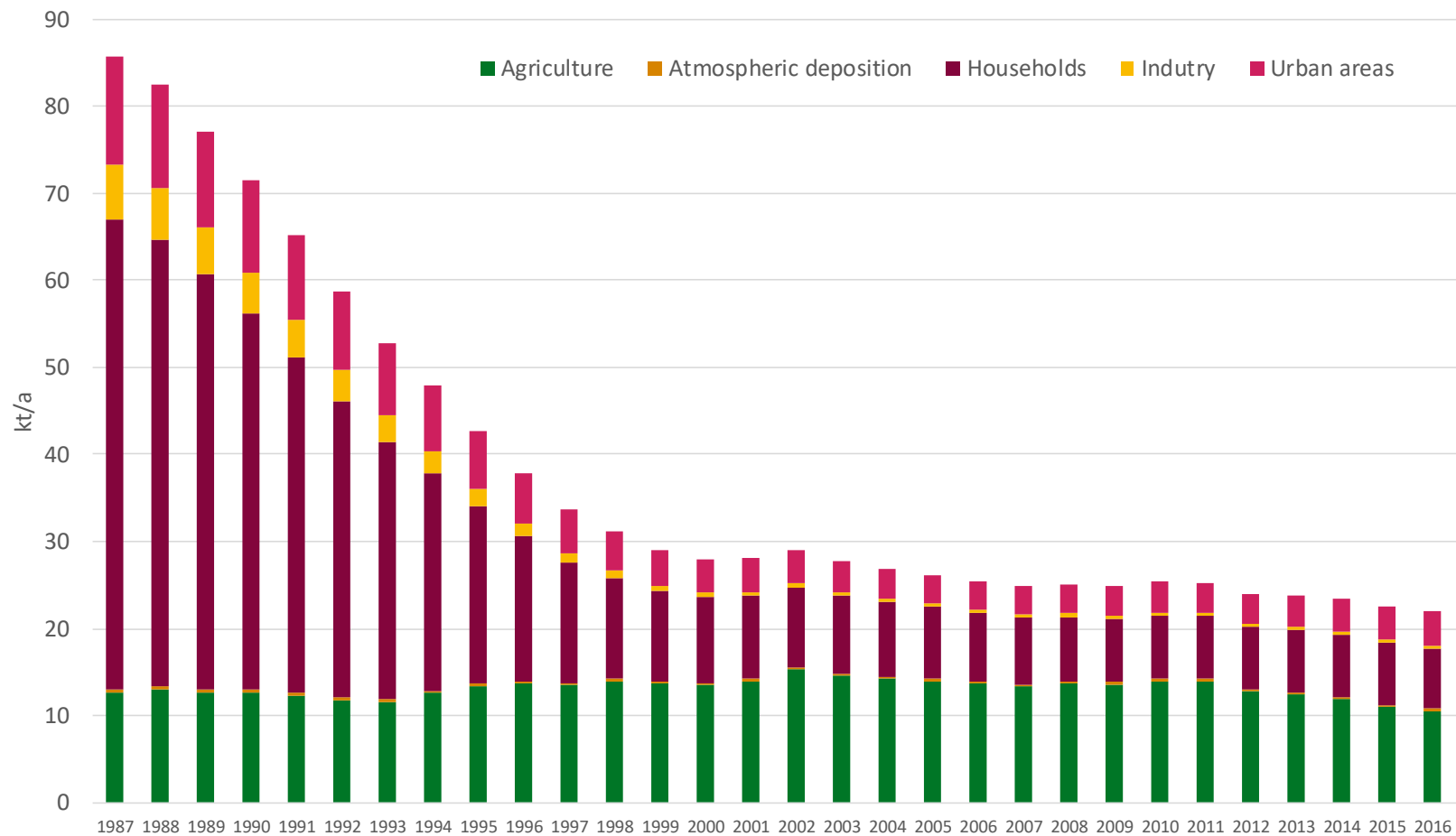
Nitrogen_(tot.) input into surface waters in Germany



Data as 5-year average; Values rounded

Umweltbundesamt 2020

Phosphorus (tot.) input into surface waters in Germany



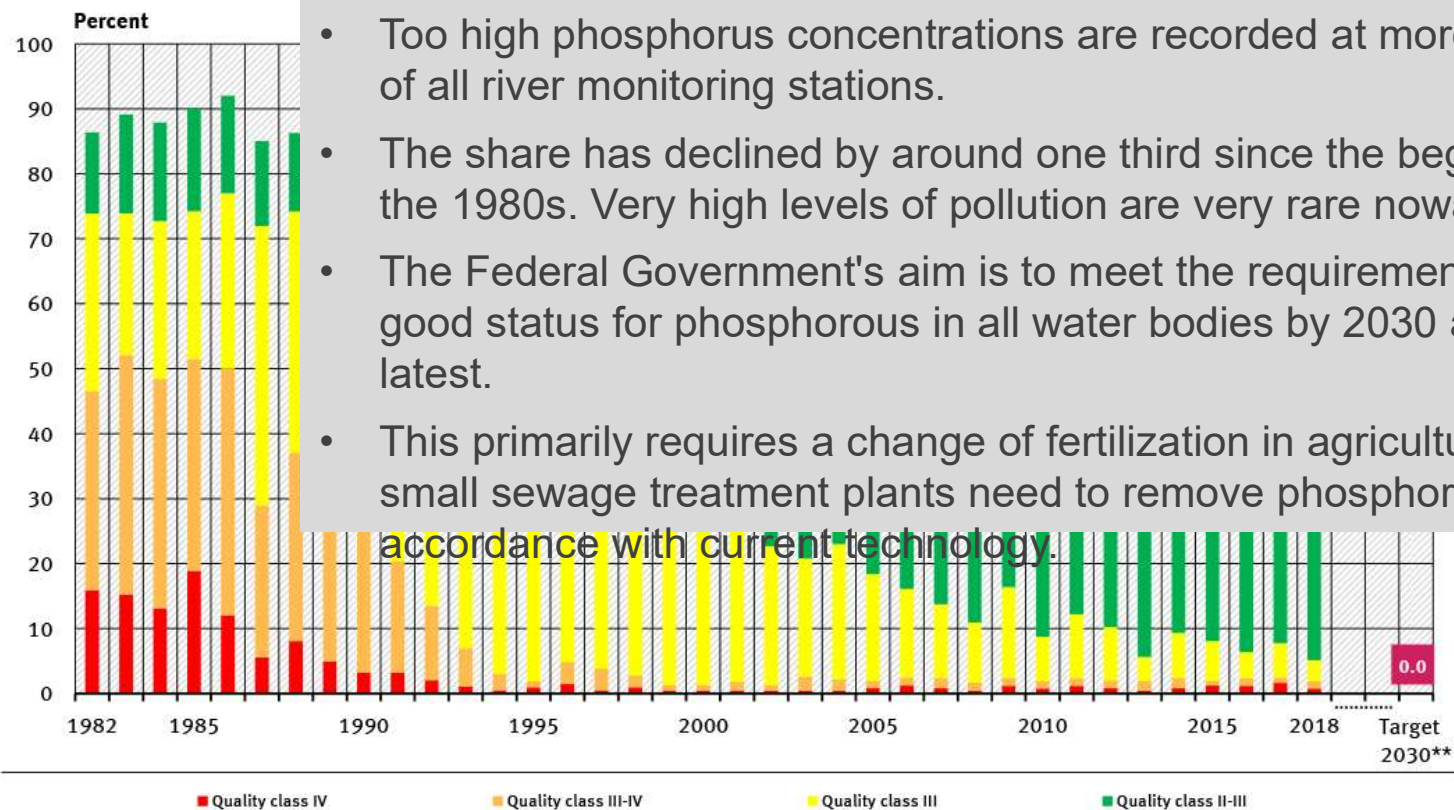
Data as 5-year average; Values rounded

Umweltbundesamt 2020

Eutrophication – phosphorus in rivers

Sampling sites which exceed the requirement for good status for total phosphorus in rivers

Percentage of sampling sites of quality class II-III and worse*

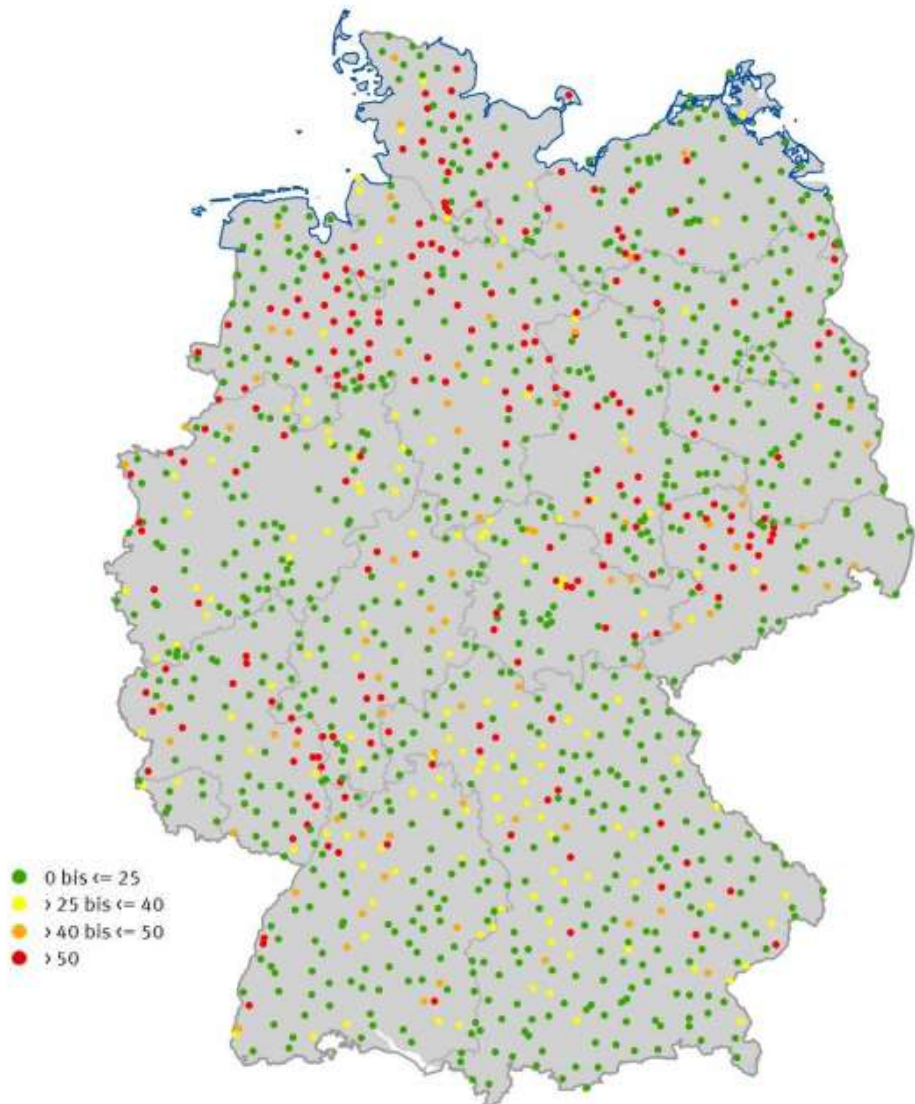


- Too high phosphorus concentrations are recorded at more than half of all river monitoring stations.
- The share has declined by around one third since the beginning of the 1980s. Very high levels of pollution are very rare nowadays.
- The Federal Government's aim is to meet the requirements for good status for phosphorous in all water bodies by 2030 at the latest.
- This primarily requires a change of fertilization in agriculture. Also, small sewage treatment plants need to remove phosphorus in accordance with current technology.

* The specific requirement for good status for different types of water bodies is exceeded if the water quality class for total phosphorus is "II-III" or worse. The indicator shows the percentage of sampling sites which exceed the target value compared to
 ** Target of the German Sustainable Development Strategy

Source: Prepared by the German Environment Agency from data provided by the German Working Group on water issues of the Federal States and the Federal Government 2019

Implementation of Nitrate Directive - groundwater



Mean nitrate concentrations at monitoring sites in time period 2016 to 2018 [mg/l]

- Approx. 1 200 monitoring sites

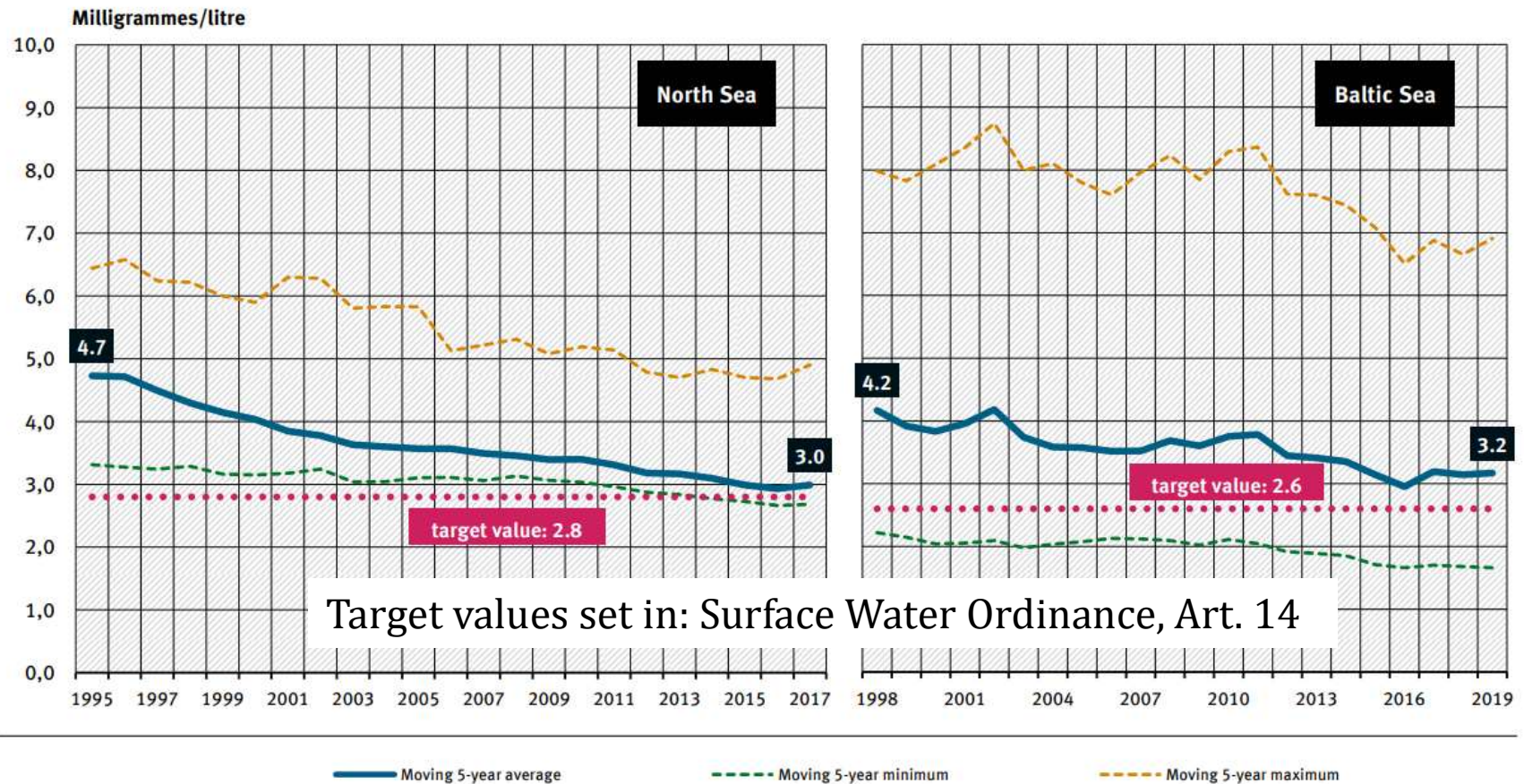
Nitratklassen	Anteile der Messstellen 2016-2018
≤ 25 mg/l	65,0 %
> 25 bis ≤ 40 mg/l	11,4 %
> 40 bis ≤ 50 mg/l	6,3 %
> 50 mg/l	17,3 %

Nitrate-report with map viewer (only in German language):
<https://gis.uba.de/maps/resources/apps/nitratbericht/>

BMEL, BMU, UBA 2020

Eutrophication – nitrogen in North Sea and Baltic Sea

Outflow-weighted mean of the total nitrogen concentration of the North Sea and Baltic Sea inlets



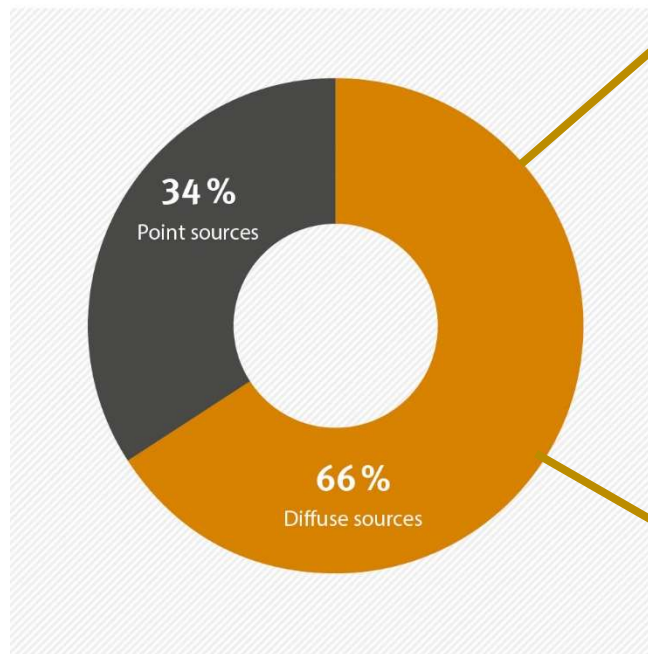
Rivers included North Sea: Rhine (to Bimmen), Elbe, Ems, Weser, Eider, Treene, Arlau, Bongsieker Kanal, Miele. Baltic Sea: Peene, Warnow, Trave, Uecker, Schwentine and 19 other rivers.
 Due to different data provision periods, data are available for the Baltic Sea until 2019 and for the North Sea until 2017.

Source: German Environment Agency 2020 according to information from the federal states and river basin communities

German Environment Agency, 2019

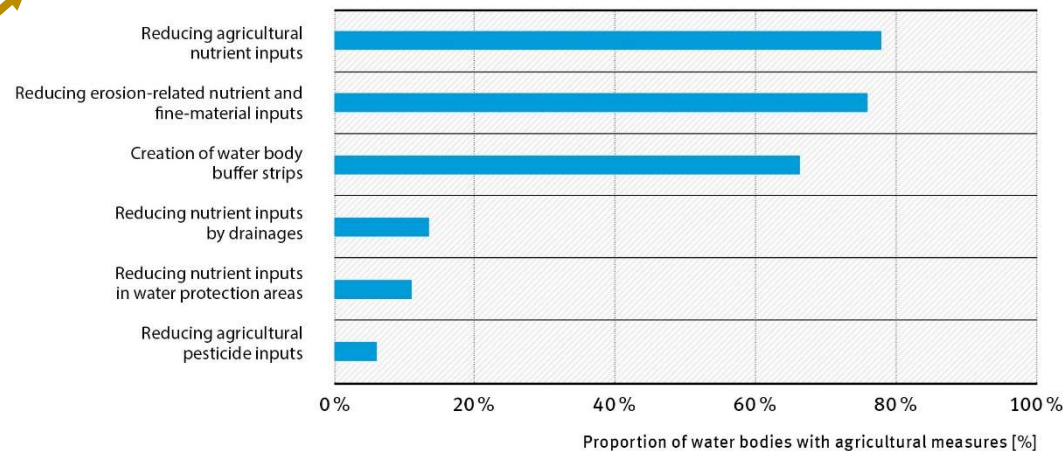
Measures to reduce eutrophication

Proportion of planned eutrophication reduction measures for the current management cycle.



Technical data: Berichtsportal WasserBLiCk/BfG; last updated 23 March 2016. Adaptation/editing: Umweltbundesamt, based on Bund/Länder-Arbeitsgemeinschaft Wasser (LAWA) data.

Proportion of planned agriculture pressure reduction measures for the current management cycle (n = 6,300).



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Revised Fertilization Ordinance 2020, e.g.

- Lower doses in red zones (areas with high nutrient pollution)
- Stricter checks of nutrient contents of organic fertilizers
- Stricter implementation of buffer zones

Summary

- Failure of Environmental goals caused by (*inter alia*) nutrient surplus.
- Eutrophication was identified as a one of the main impacts to German surface waters.
- Phosphorus concentration significantly decreased since the late 1980's and also nitrogen. This is mainly due to improvement at urban waste water treatment.
- There is rather no decreasing trend of nutrient input from agriculture over time.
- The threshold of 50mg/l for nitrate in groundwater is exceeded at almost one in five measuring points.
- In order to fulfil the targets of Baltic Sea and North Sea , it is necessary that each river achieves the targets of the Surface Water Ordinance (Art. 14)
- In order to achieve further reductions in nutrient concentrations, measures

**Thank you for your
attention!**

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