

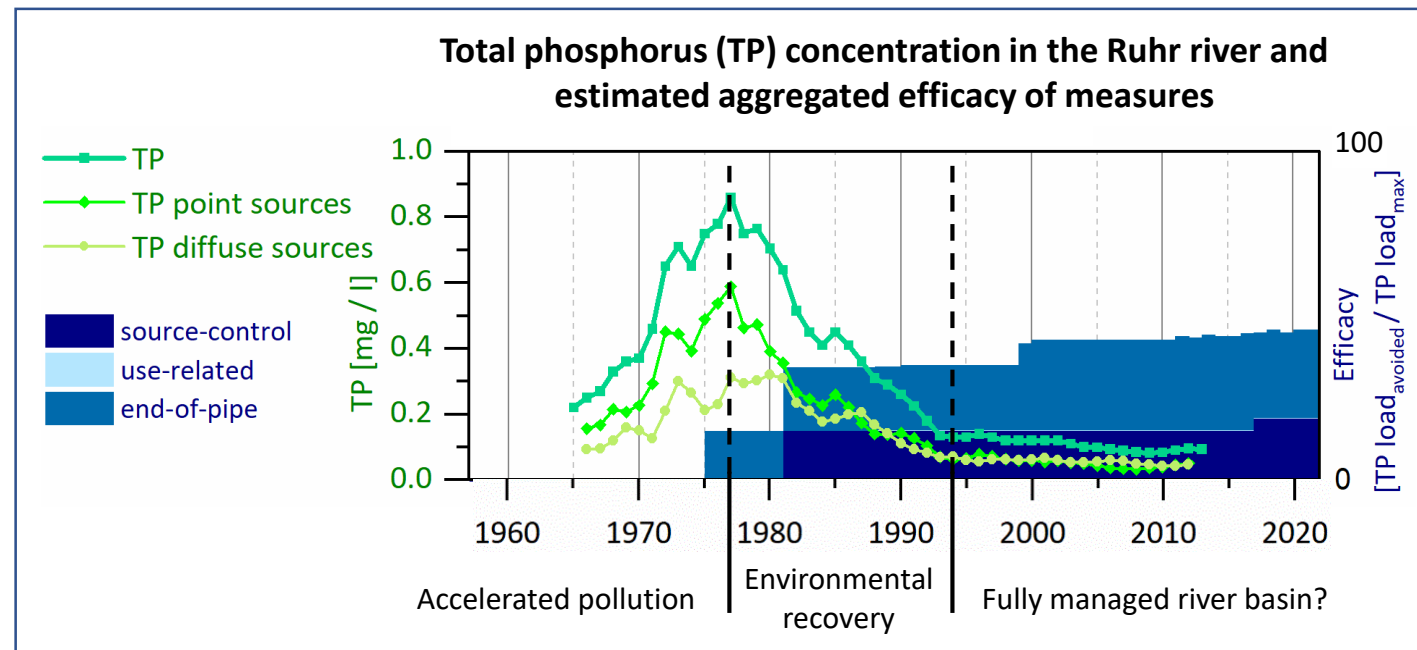
Efficacy of source-control, use-related, and end-of-pipe management on river water quality: a 50-year trajectory of a German catchment

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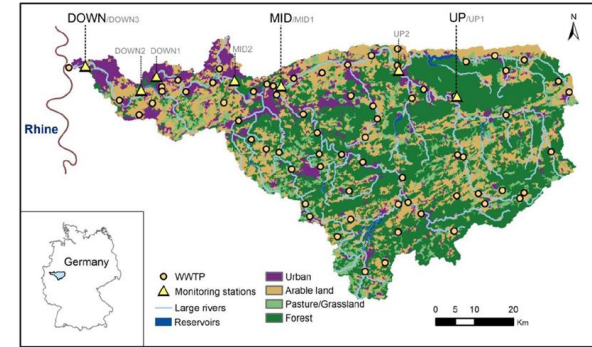


(provisional figure)

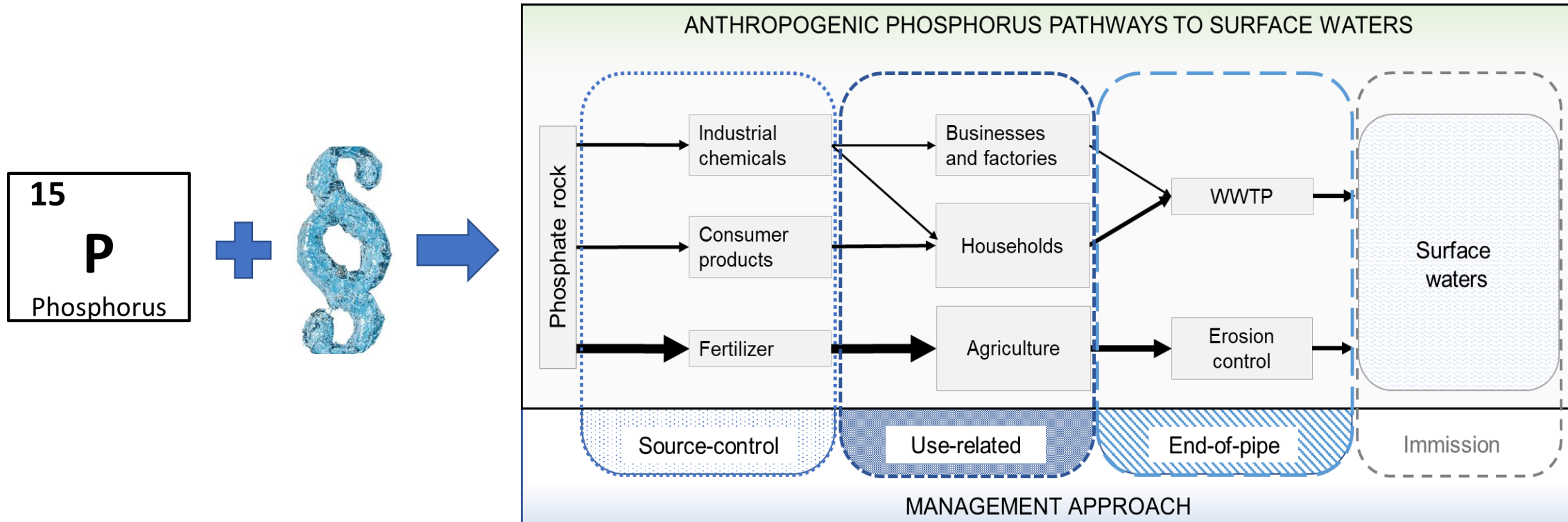
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HS1.1.2 'Role of hydrology in policy, society and interdisciplinary collaborations: across disciplines and beyond scientists'

Combination of a river water quality trajectory, legislative measures and their implementation

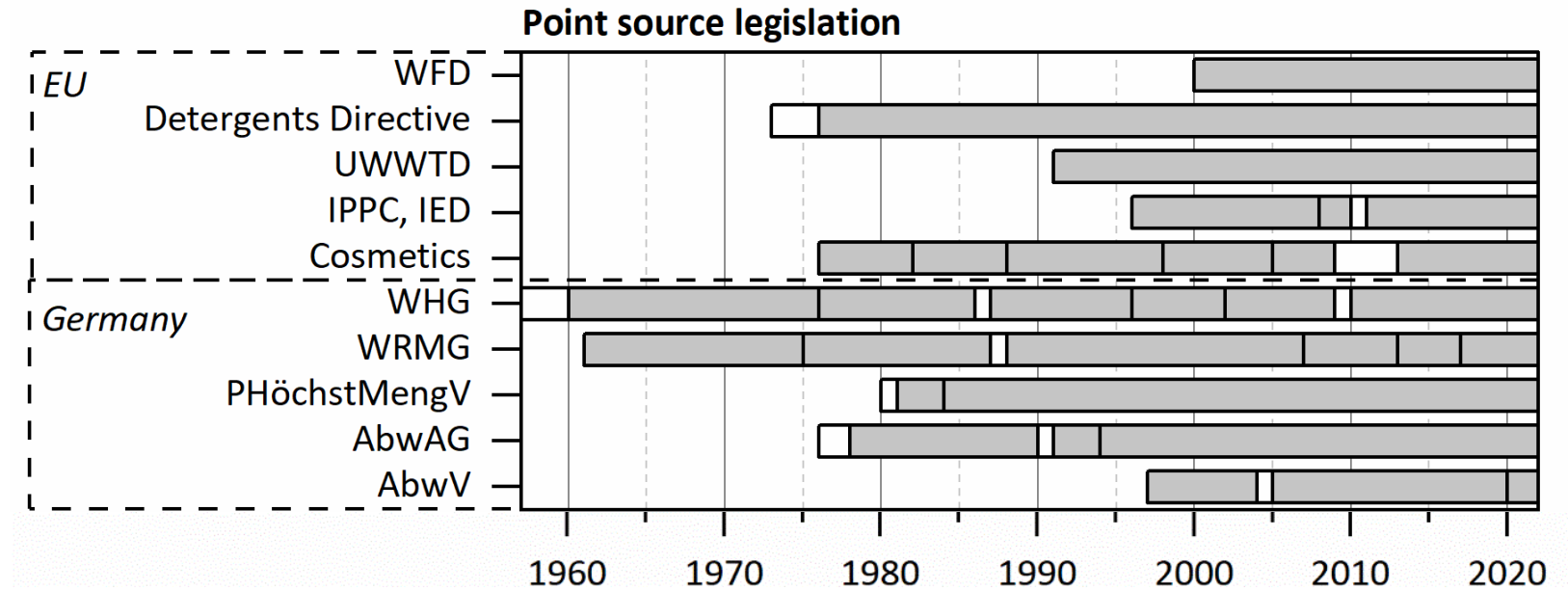
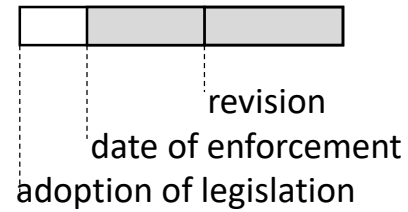


(Westphal et al. 2019)

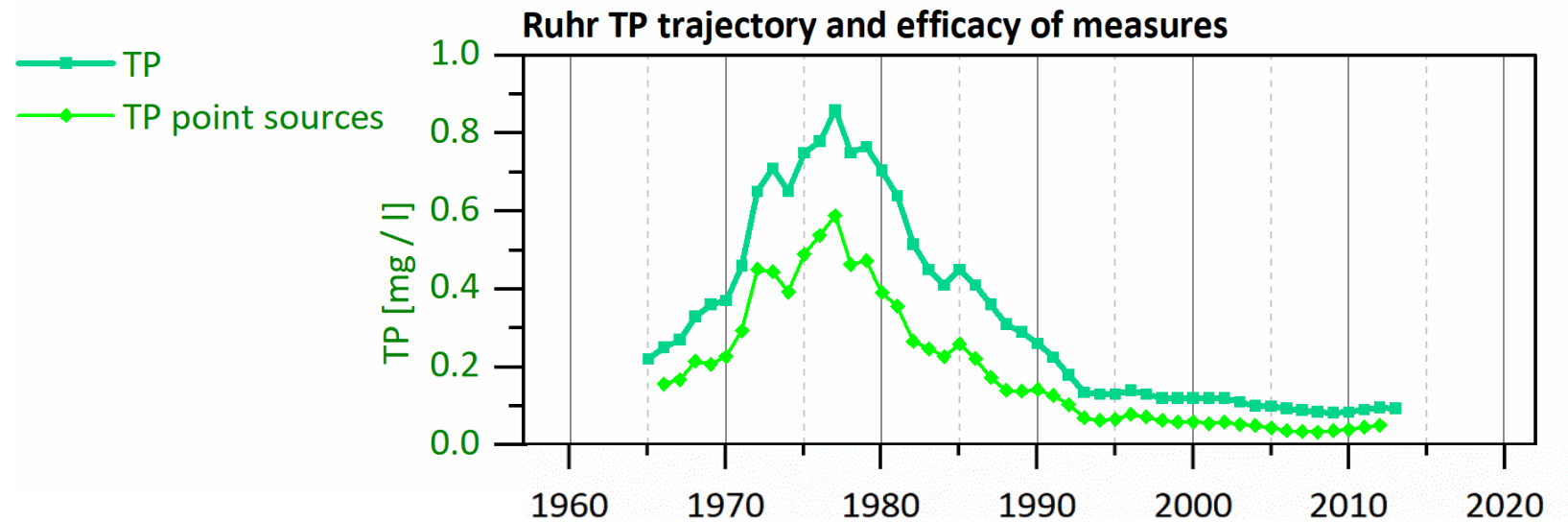
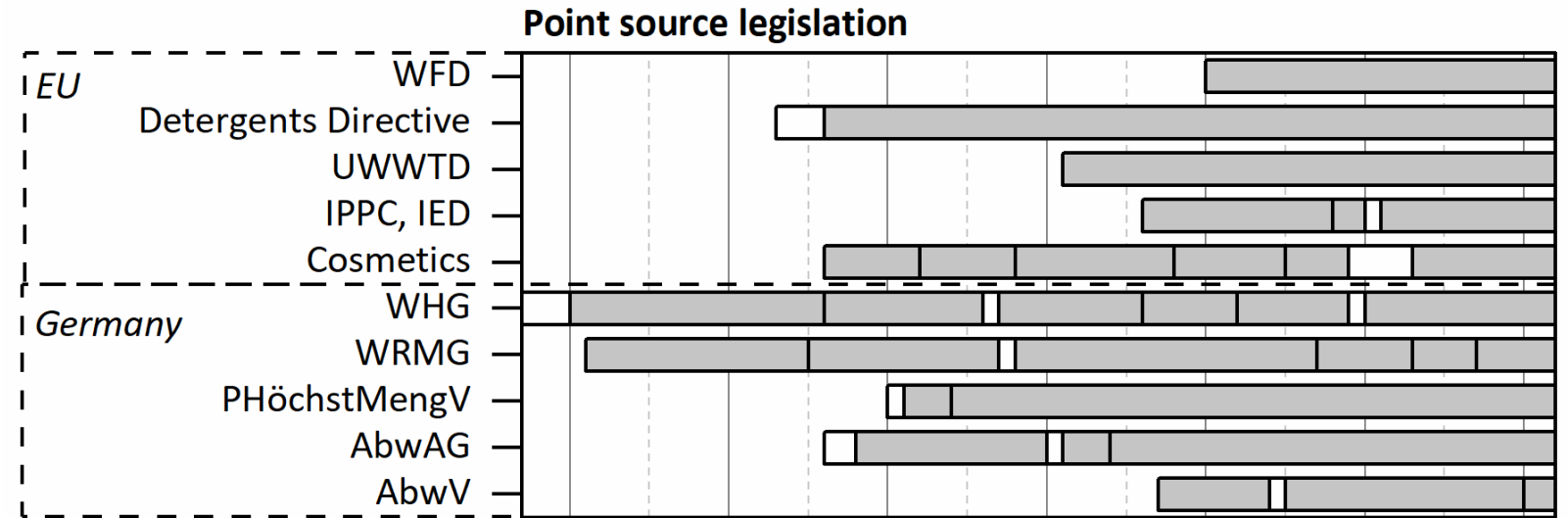
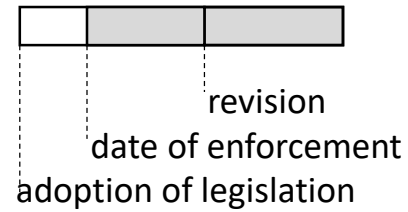


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EU and national legislation regarding: P point sources

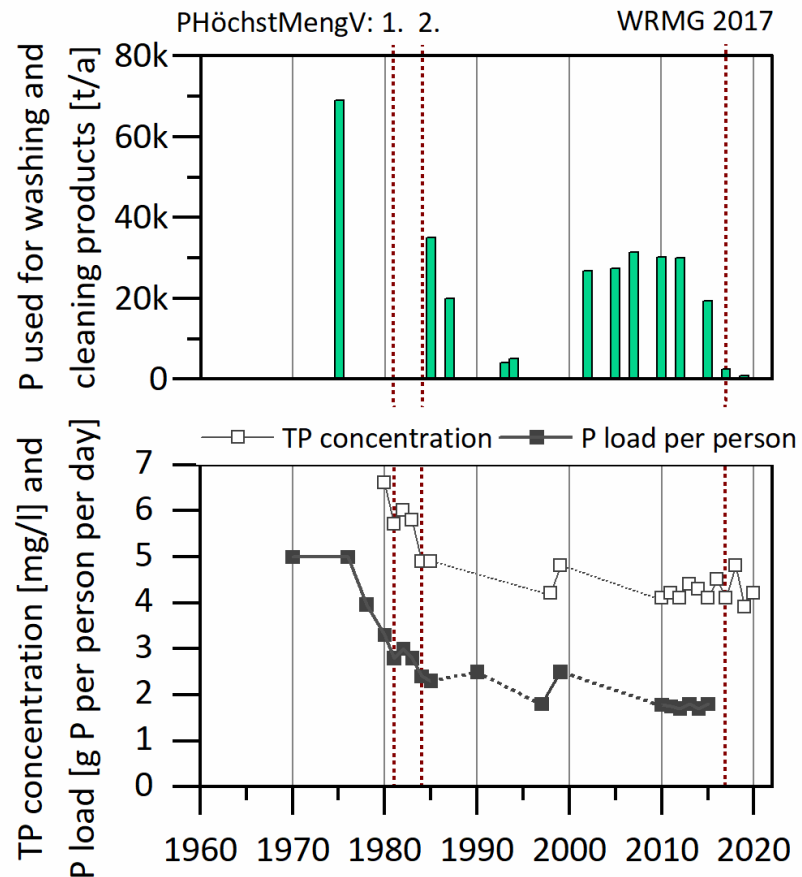


EU and national legislation regarding: P point sources



Phosphorus from point sources: legislative approaches and implementation

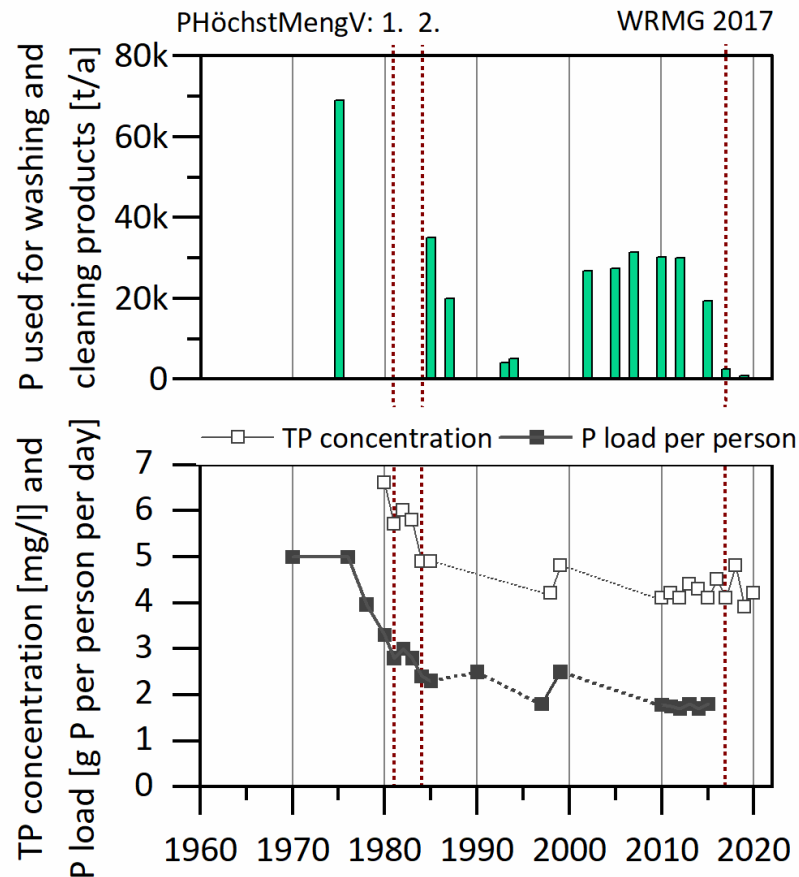
Source-control



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Phosphorus from point sources: legislative approaches and implementation

Source-control



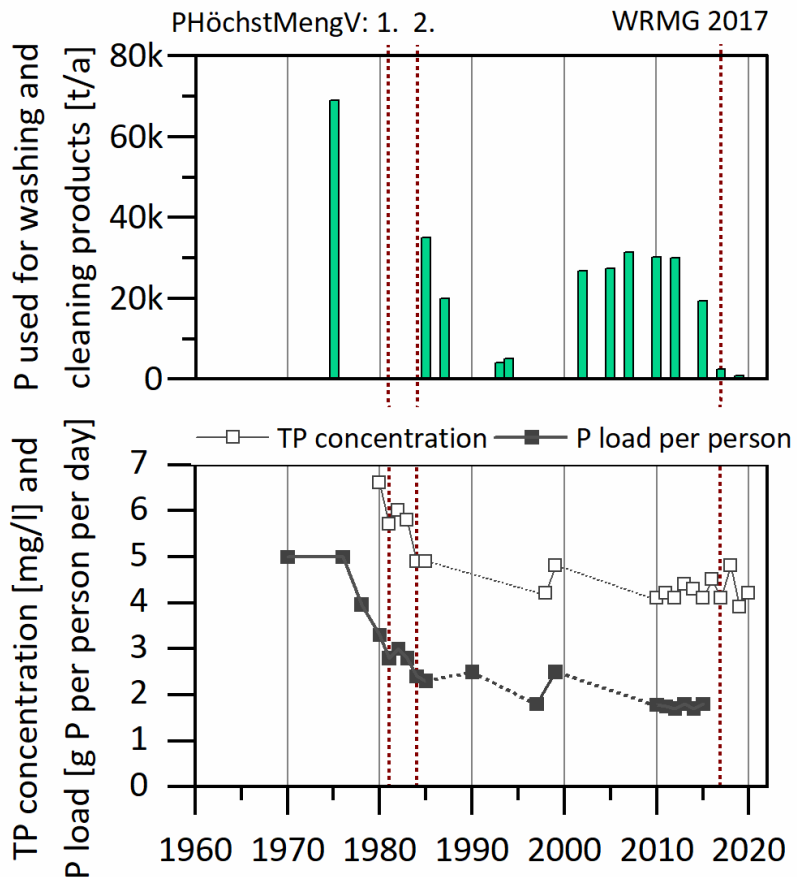
Use-related

- ▶ product labelling with dosage recommendations 1975
- ▶ factor in the preservation of water resources and the product's efficiency 1987

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Phosphorus from point sources: legislative approaches and implementation

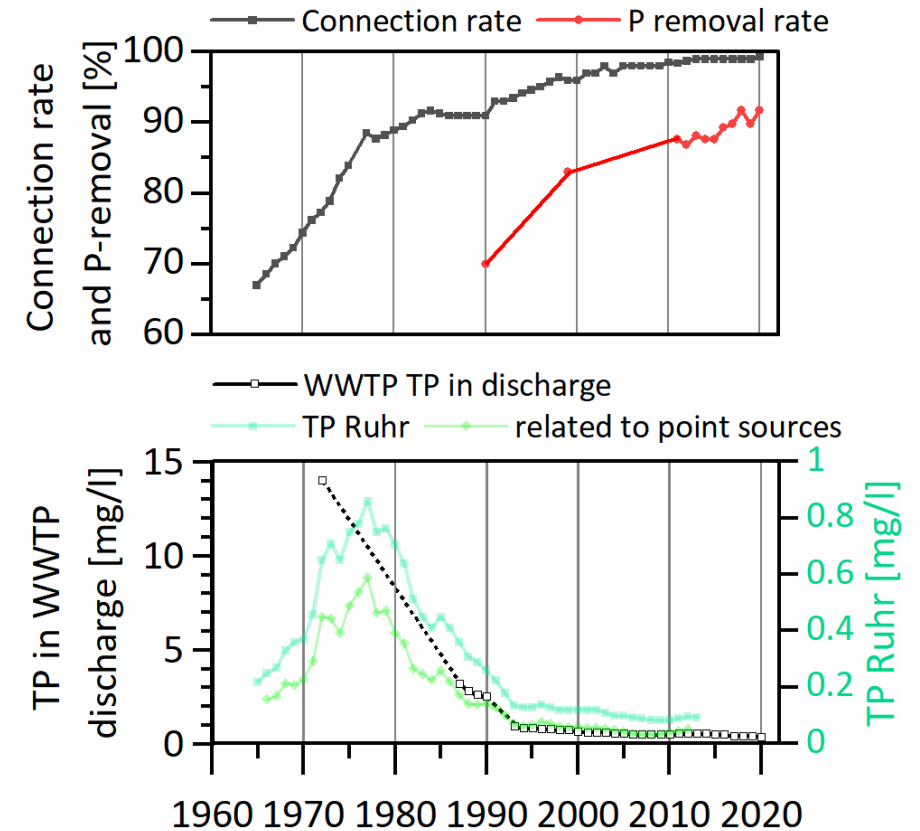
Source-control



Use-related

- ▶ product labelling with dosage recommendations 1975
- ▶ factor in the preservation of water resources and the product's efficiency 1987

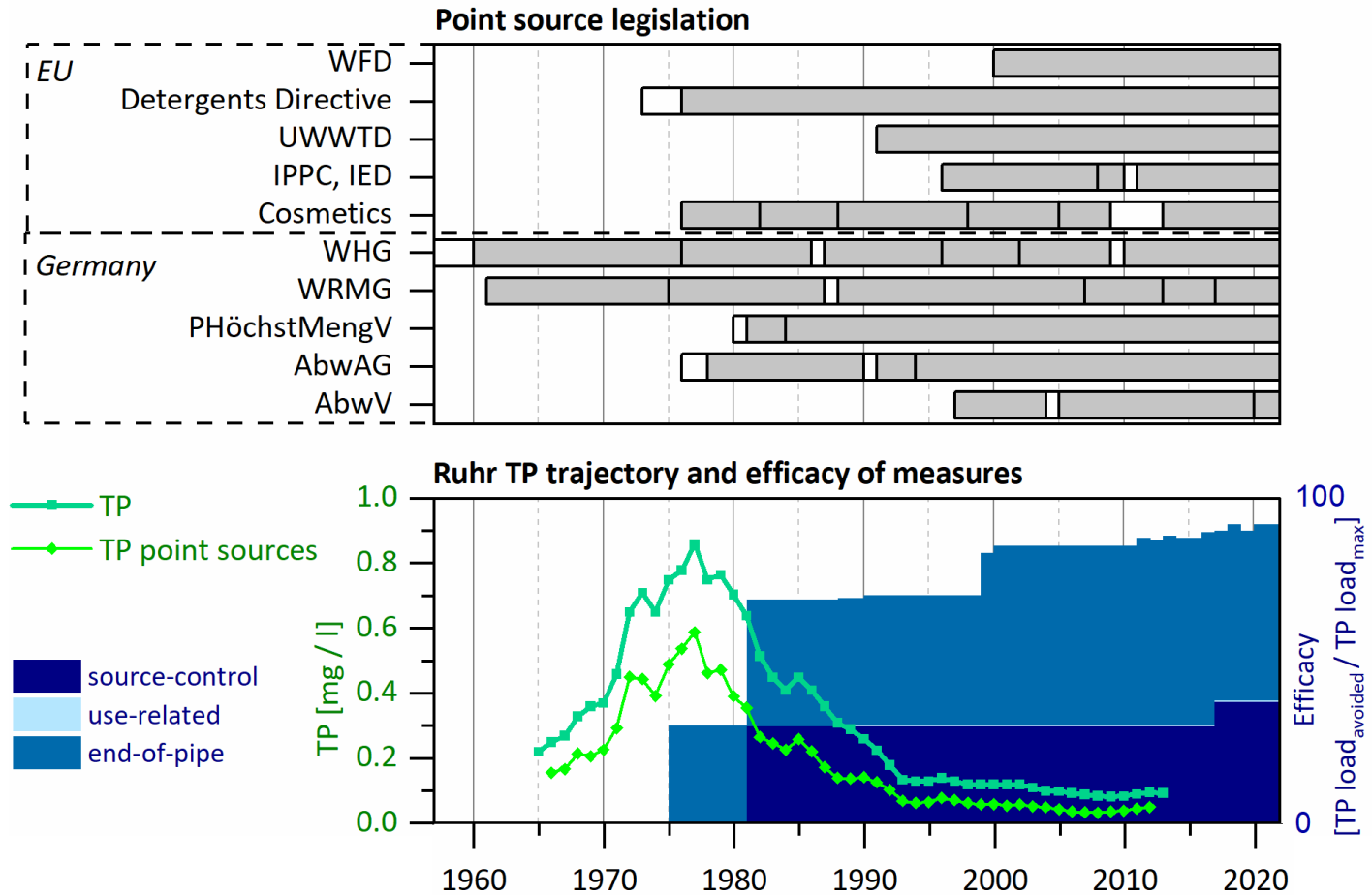
End-of-pipe



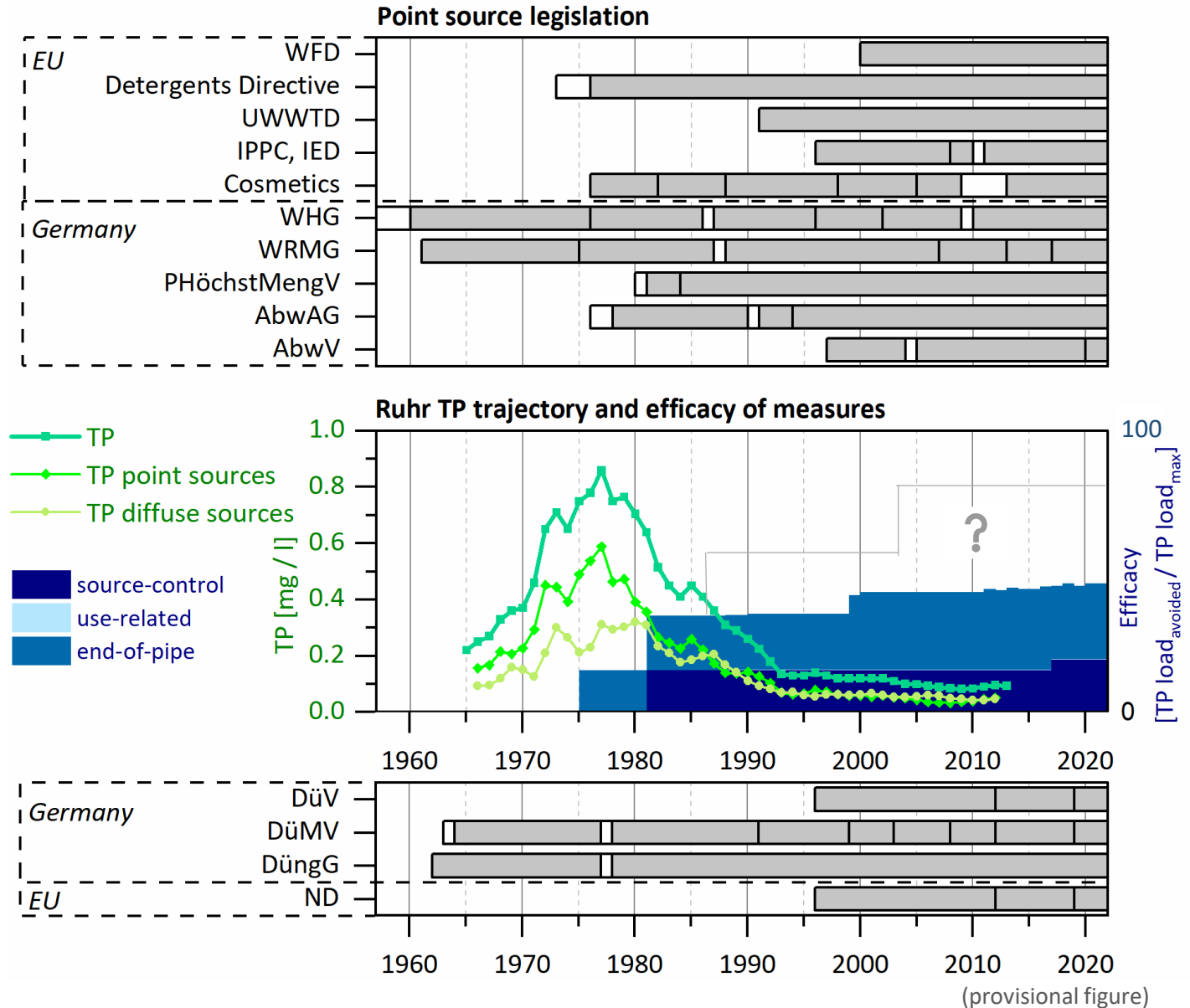
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Phosphorus from point sources: efficacy of measures

- ▶ Peak pollution of total phosphorus (TP) from point sources decreased from 0.6 - 0.05 mg/l TP
- ▶ Source control became immediately effective, reducing TP in municipal wastewater by 30%
- ▶ End-of-pipe control increased stepwise, with TP nowadays being eliminated by WWTPs by 91%



Phosphorus from point and diffuse sources: efficacy of measures



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Thank you for your attention!



Wastewater treatment plant Essen-Recklinghausen, and the Ruhr river. Source:
https://media04.lokalkompass.de/article/2018/03/21/2/504462_XL.jpg?1563401361

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