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Joint Research Centre

Water purification: economic valuation and accounting

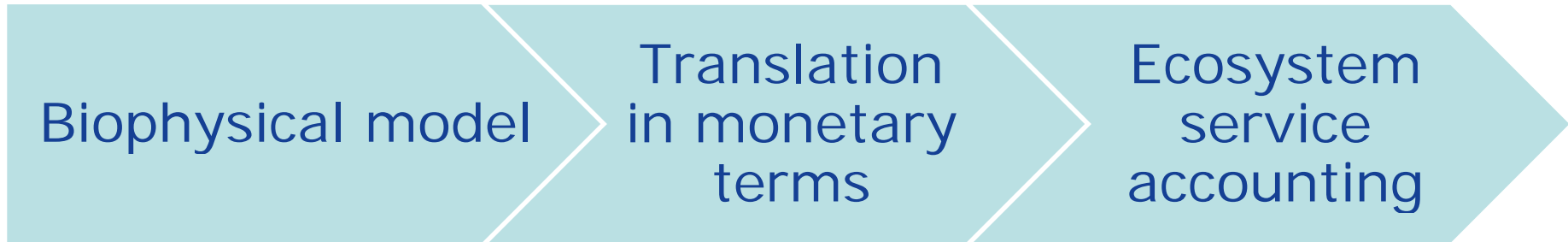
Presenter: Alessandra La Notte

Contributors: Sara Vallecillo, Joachim Maes

Bonn, 24-26 April 2018



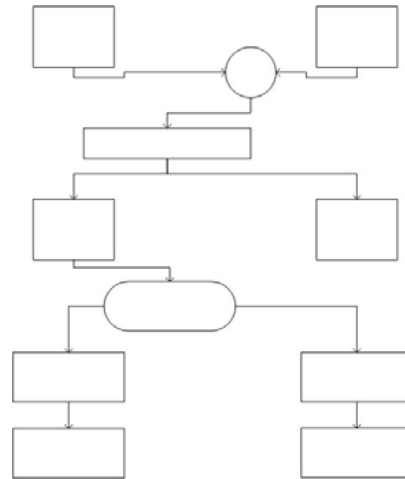
JRC approach for Ecosystem Service Accounting



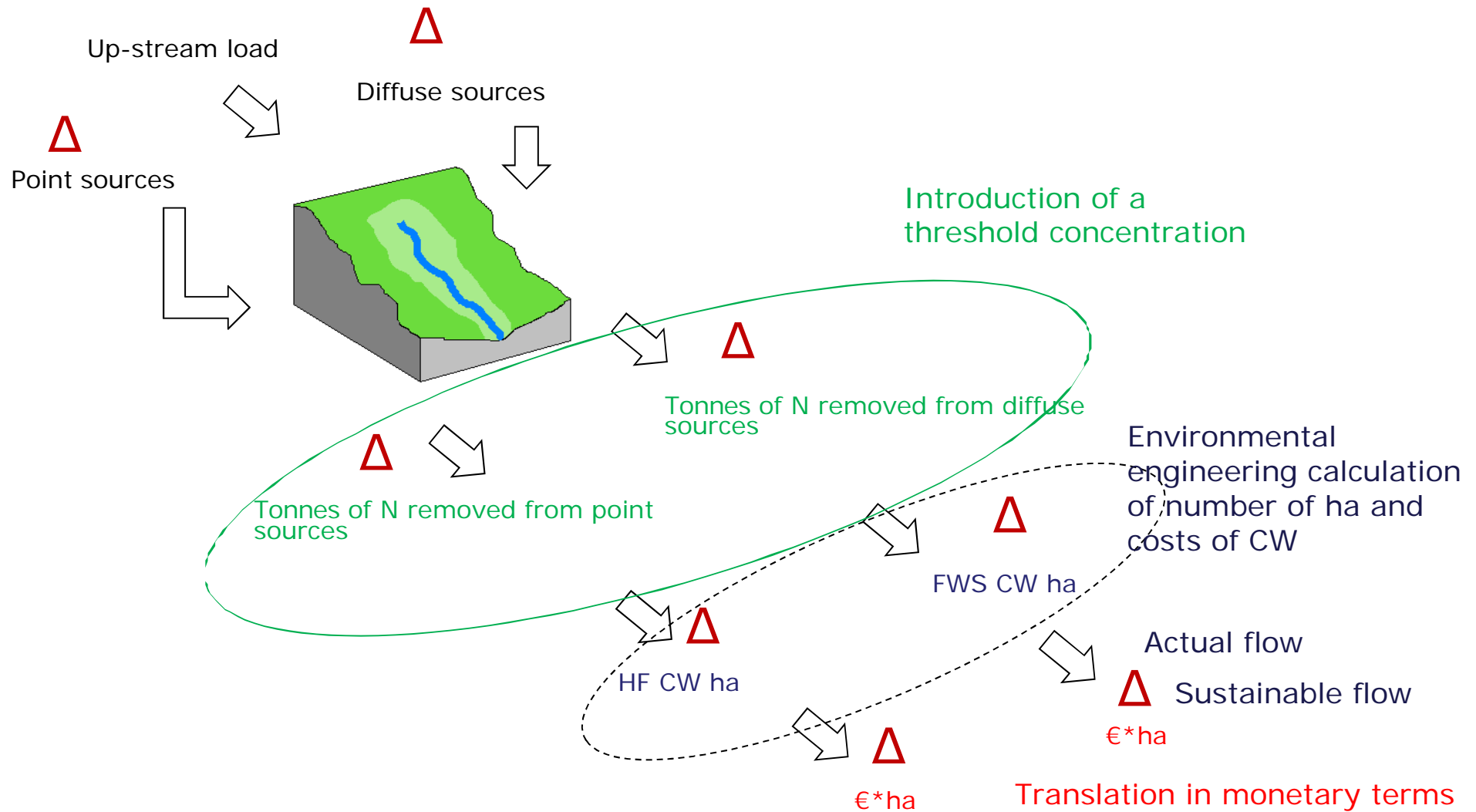
Spatially explicit

Potential flow
Enabling actors } Use (actual flow)

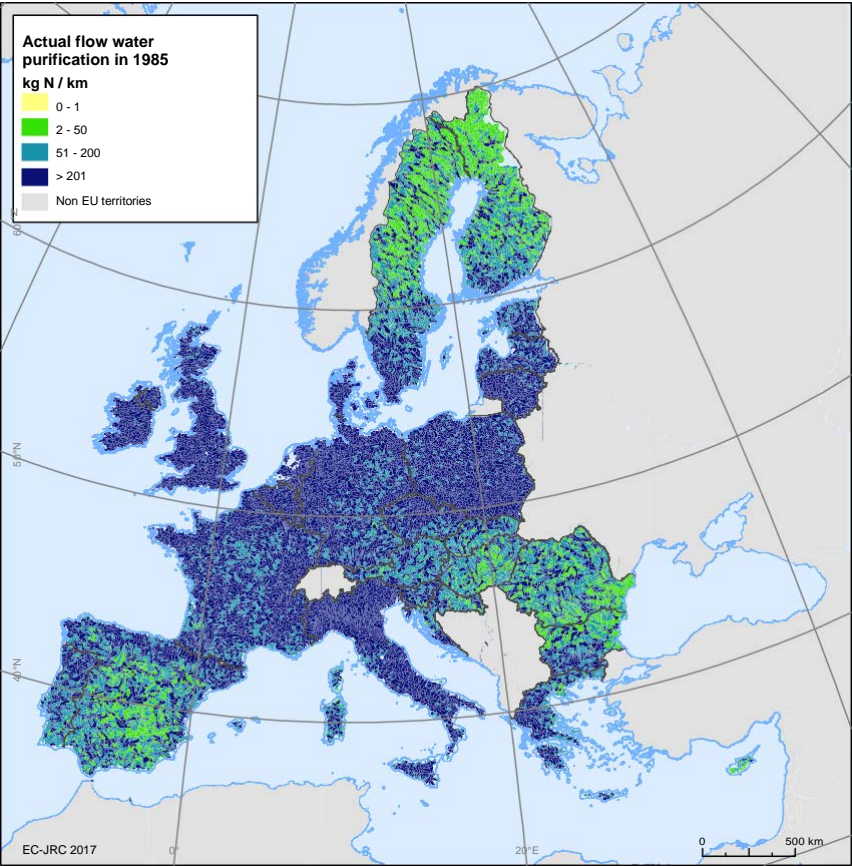
Critical variables of the biophysical model



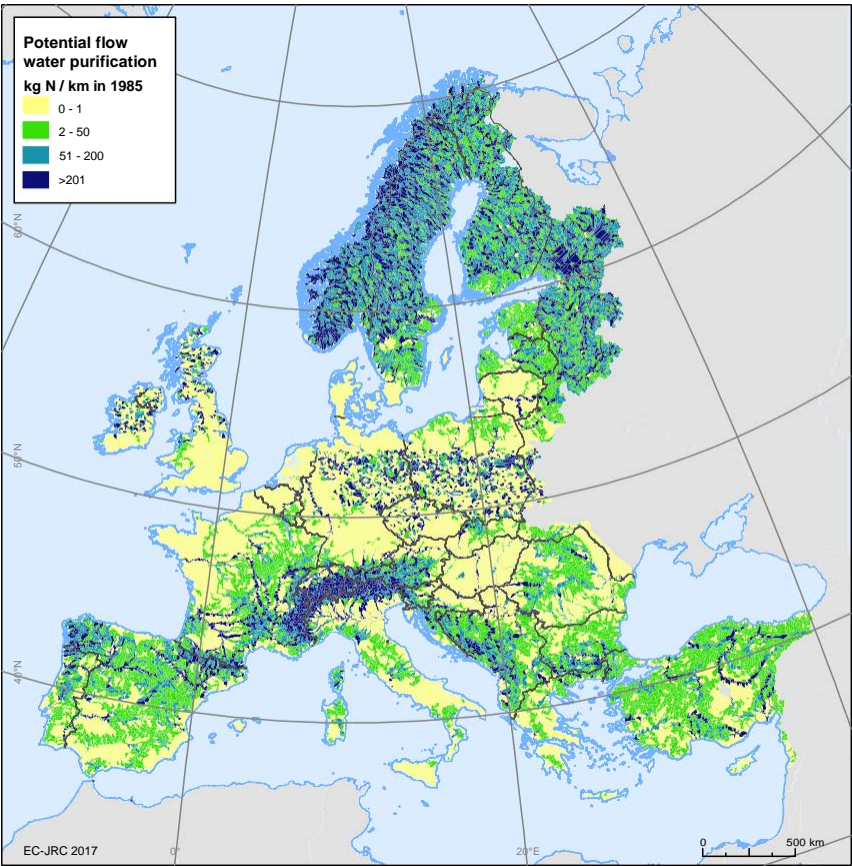
Graphical simplification of the procedure



Actual flow



Potential flow



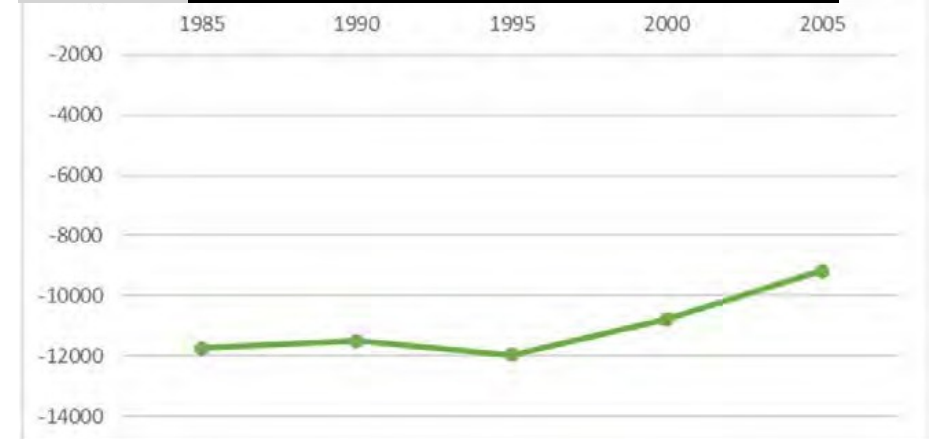
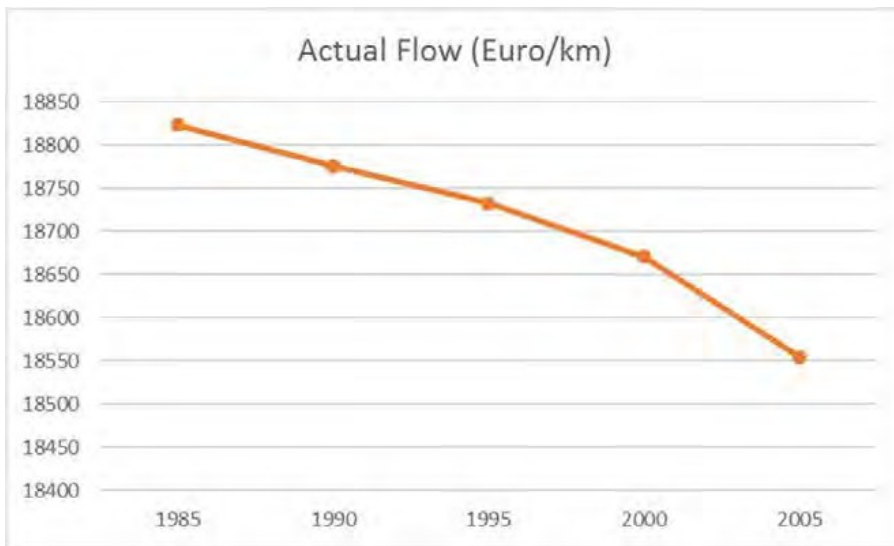
Considering a threshold of 1mg/l

Role of enabling actors: who drives changes in the actual flow...

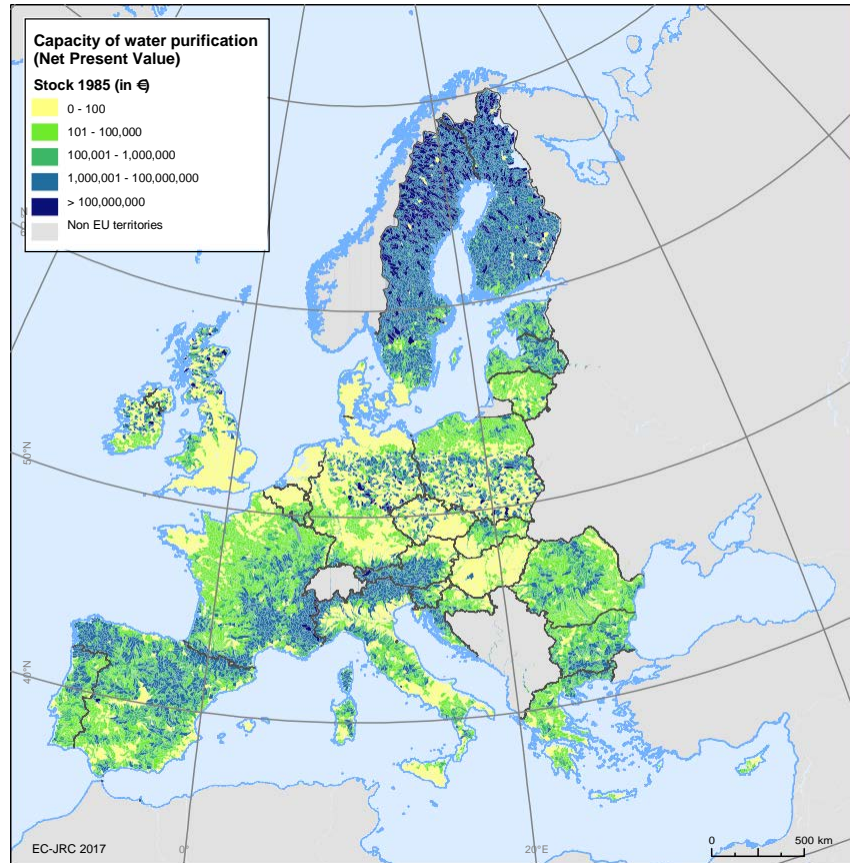
...what is the impact of these changes?

EU 25					
Agriculture	18,467.93	18,417.70	18,372.09	18,317.43	18,223.31
Other sectors	355.71	357.98	360.24	353.31	331.71

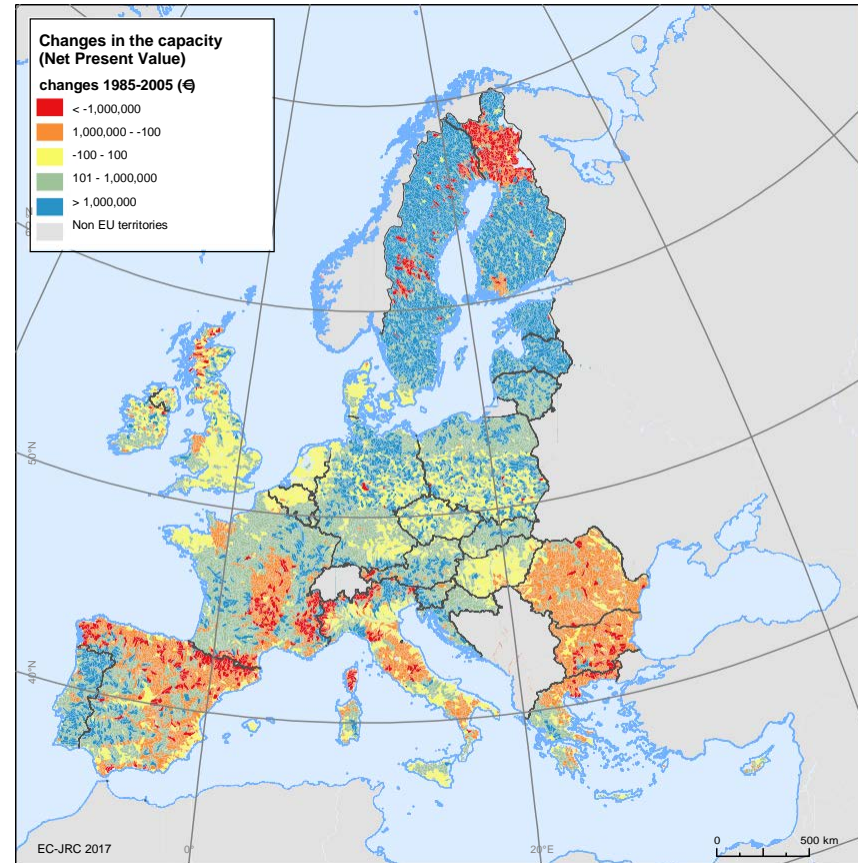
water bodies	-11,737.75	-11,494.03	-11,943.97	-10,777.94	-9,165.49
other land	-	-	-	-	-



Water purification capacity (NPV)

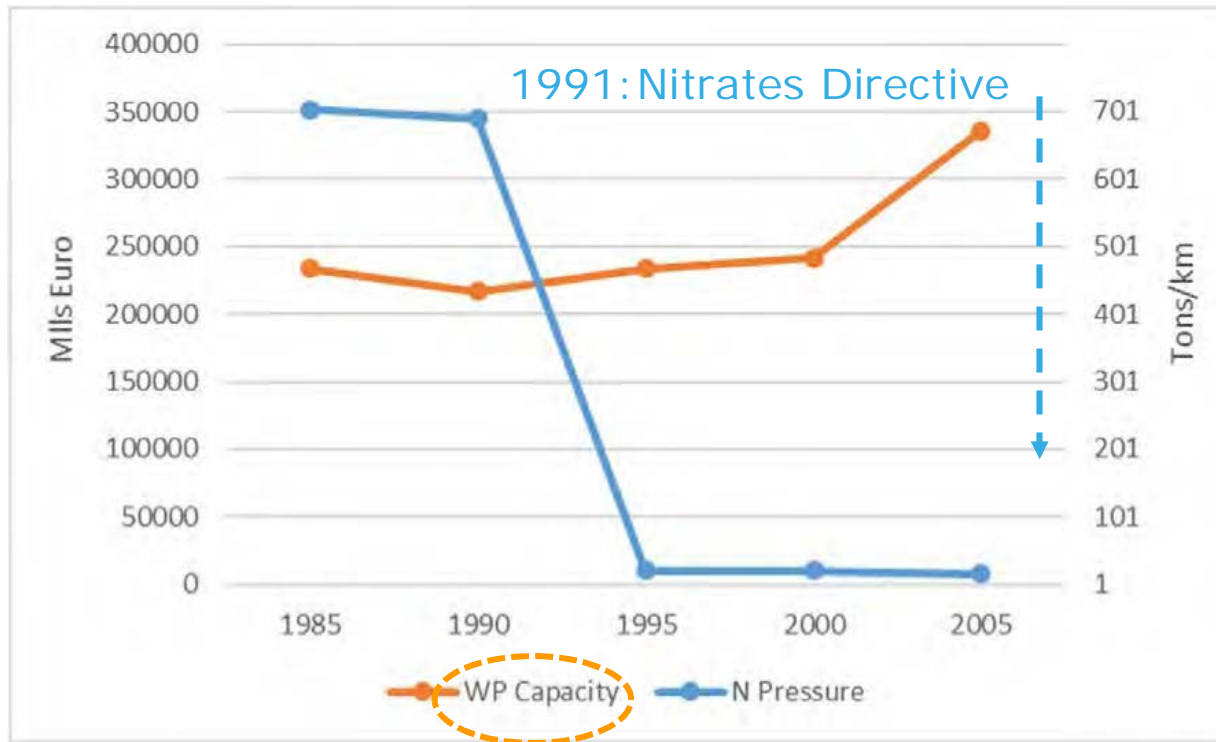


Capacity trend 1985 - 2005



How much is it worth to decrease N inputs?

EU-27 (no Malta)



Long term ability to generate water purification

Issues that need to be discussed

- Motivations for the use of replacement cost
- Motivations for the use of CW as replacement cost
- NPV: lifetime (T)? Interest Rate?
- Approach for application in time series:

If there is only one reference monetary value

- CPI?
- Constant prices /current prices?
- Exchange rate?

*If there are more reference monetary values but
not for all the time series*

8

- How to “mix” the values

References

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Physical and monetary ecosystem service accounts for Europe: A case study for in-stream nitrogen retention



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al Assessment and Monetary of Ecosystem Services

services accounts

Report under phase 2 of the knowledge innovation project on an integrated system of natural capital and ecosystem services accounting in the EU

Alessandra La Notte, Sara Vezzillo, Chiara Pisco, Grazia Zuliani, Joachim Maes

Scenario analysis for the case of water purification in Europe

Alessandra La Notte, Joachim Maes, Vincent Thieu, Fayçal Bouraoui, Fabio Masi

One Ecosystem : Research Article



2017

The role of enabling actors in ecosystem service accounting

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