Nutrient recycling and processed manure in the Nitrates Directive

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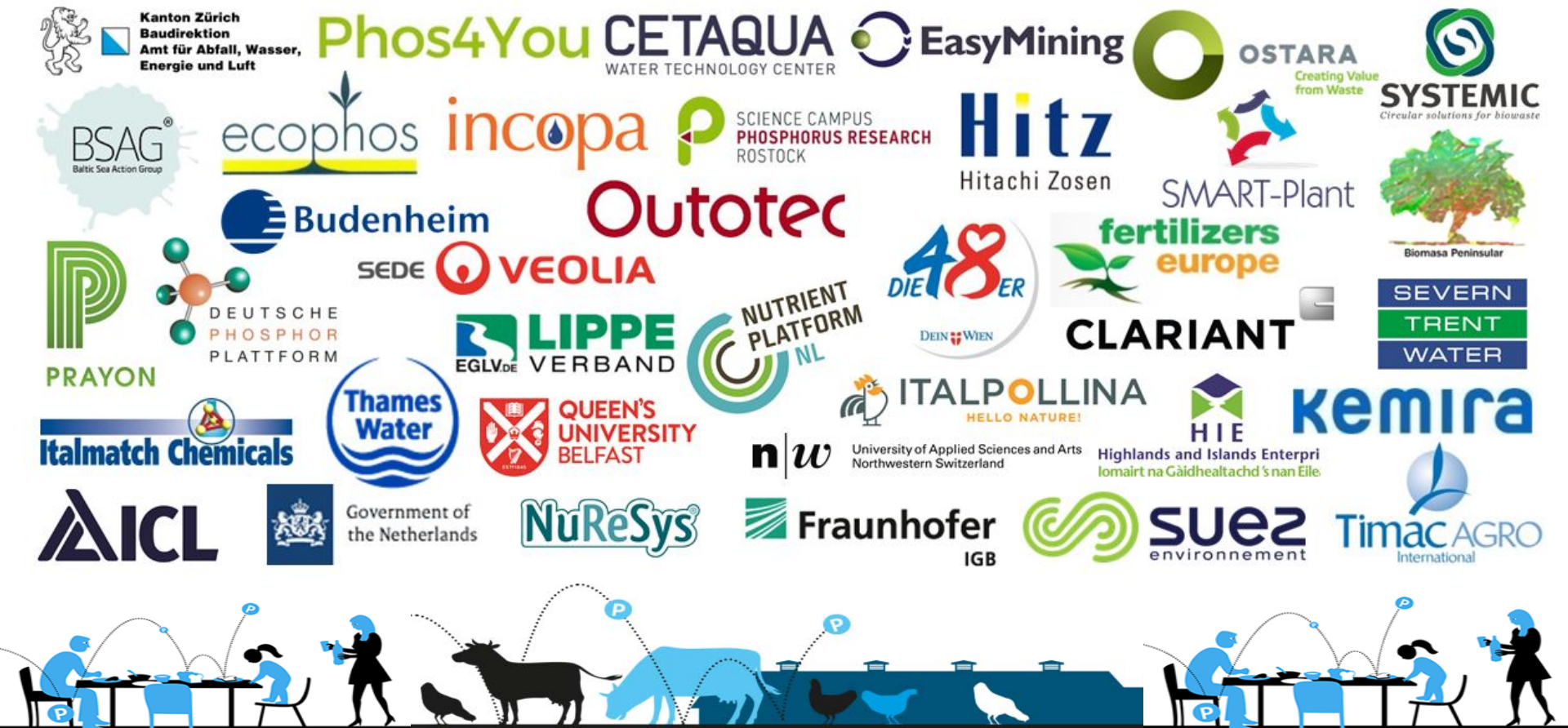


The EU Nitrates Directive 1991/676/CE

The Nitrates Directive is a key part of EU water policy

Integrated into Water Framework Directive 2000/60/CE

- Concerns "Nitrate Vulnerable Zones (NVZ): 40% of EU territory
  - complete upstream catchment ("drain into")
  - of any ground or surface water "affected by pollution and waters which could be affected by pollution if action … is not taken"
  - "pollution" refers only to nitrogen (N) from agricultural sources
- In NVZs, Member States must define "Action Plans"
  - the word "phosphorus" does not occur in the Nitrates Directive
  - but Action Plans increasingly also limit phosphorus application

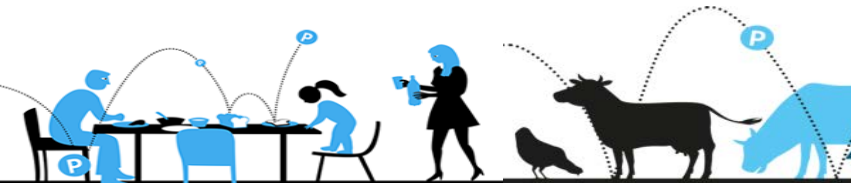
→ successful: 70% of surface / 66% of groundwaters are improving*

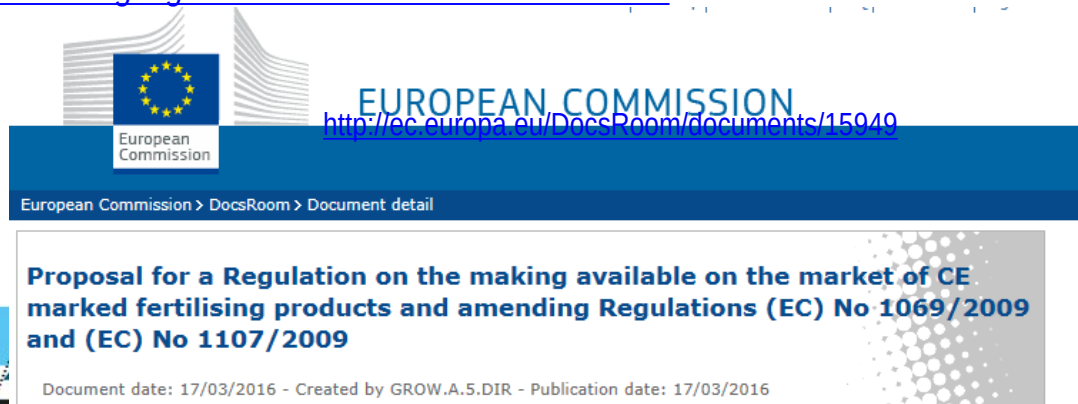
* EU COM factsheet online (2010) http://ec.europa.eu/environment/pubs/pdf/factsheets/nitrates.pdf

The EU Fertiliser Regulation

- *European Parliament position adopted* 24/10/17, Council pending, then goes to trilogue … implementation expected 2019 onwards*
- *Will specify cut-off points for organic carbon (C_{-org}) in EU Fertilisers*
- *Cross industry proposal (ESPP – mineral fertilisers industry – organic fertilisers industry) – taken into EP amendments*
  - *→ "mineral" fertiliser = < 1% organic carbon (C_{-org})*
  - *→ "low carbon fertiliser" = < 7,5% (or 15%) C_{-org}*
- *STRUBIAS : current JRC proposal for "phosphate salts" = < 3% C_{-org}*

* http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2017-0392





http://ec.europa.eu/DocsRoom/documents/15949

The EU Fertiliser Regulation

Key aspect is "EU Fertiliser" status = End-of-Waste

But Regulation does not give Animal By Product (ABP) End-Point

- *Key issues unresolved → cross industry-stakeholder position 22/11/17**
- *Status of manure & ABPs still unclear:*
  - "double sanitisation" required BEFORE composting or anaerobic digestion?

* www.phosphorusplatform.eu/regulatory

Joint statement on the EU Fertilising Products Regulation

20th November 2017

Our organisations jointly underline the importance of addressing a number of **important outstanding issues in the proposed EU Fertilising Products Regulation**, including those indicated below. Not all of our organisations are directly concerned by all of the points listed, but we consider that they require attention to achieve a final regulatory text which is workable in implementation, which will facilitate innovation and development of the nutrient circular economy and nutrient stewardship, whilst ensuring the protection of

Nitrates Directive challenge for nutrient recycling

In NVZs (Nitrate Vulnerable Zones) only:

- Annex III specifies that Action Plans must limit application of:
  - total nitrogen "consistent with good agricultural practice"

  but also:

  - nitrogen from livestock manure (including from animals on fields)

    → specific limit to 170 kg/ha (within, not additional to, the total N limit)

    NOTE: derogation can be given by the European Commission

- Art. 2(g) "livestock manure: means waste products excreted by livestock or a mixture of litter and waste products excreted by livestock, even in processed form"

→ Limits use of manure derived recycled nutrient products (in NVZs)

See www.phosphorusplatform.eu/scope100

Nitrates Directive challenge for nutrient recycling

Use of manure recycled fertiliser products is limited in NVZs (lower use limits than for virgin mineral fertilisers)

- *Case by case derogations (to the 170 kgN/ha limit) and different interpretations of what is/is not "processed manure" in different Member States*
  - *→ no single market*
  - *→ obstacle to EU roll-out of recycling technologies*
- *In some Member States, products (e.g. digestates) are classed as "processed manure" even if only trace (>0) of input is manure*
  - *→ prevents flexibility in processing plants*
  - *→ absence of visibility for operators and investors*

How to move forward? QUESTIONS for discussion:

- *"Mineral" CE Fertiliser (< 1% C_{-org}) ?*
  → agronomically irrelevant whether from manure or not ?
- *Other products (>1% C_{-org}) → need to demonstrate plant uptake & eutrophication loss vs. virgin mineral fertiliser?*
- *Need to demonstrate for manure-based recycled nutrient products:*
  - other environmental impacts: climate/energy, atmospheric emissions, … ?
  - LCA: for recycling process; for local use vs. transport out of NVZ ?
- ***Ensure that ↑N use limit does not mean ↑P** application ?*
  … but this depends on each regional Action Plan?
- *Nitrates Directive de-classification as "processed manure" is independent from Animal By Products End-Point*
  → maintain ABP traceability? / or CE Fertiliser?

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Summary 2011 DG ENVI report on manure processing

- Total EU manure = 1.4 billion tonnes/year
- <8% processed
- Anaerobic digestion (AD) = main route (6.5%)
- AD opens door for other advanced processing
- Need for regulatory framework for trade of end products
- Phosphorus application should be limited for livestock farms
- Only 3 end-products currently have a market:
  - separation solids, manure compost, dried manure
- 4 other end-products have potential market
  - thermal/chemical treated manure, digestate, ash & charcoal, concentrates

CONCLUSIONS OF DISCUSSIONS:

Possible criteria for defining products eligible for exemption to 170 kgN/ha limit in NVZs – getting the study scope right

- *Agronomy: nutrient efficiency, losses to eutrophication, comparable to mineral ferts.*
- *C-org content?*
- *Other impacts: carbon/GHG, ammonia emissions, contaminants, soil carbon, impact overall N cycle … LCA (boundaries ?) ?*
- *Use conditions of product*
- *Indirect consequences: resulting increase of N or P application*
- *Impact on livestock concentration*
- *Generation of other sidestreams from processing (fate, impacts)*
- *Does the processing aim to produce a product or just "remove" the waste?*

Implementation → – guidelines ? – Surveillance?

Need for data input, existing research on agronomic & environmental behaviour of product, leaching factors, different soils - Need for experts

Roadmap of process – needed for stakeholders to prepare input

Issues with the time it takes

Action – stakeholders liaise with Member States reps in Nitrates Working Group