Regulatory and policy initiatives on phosphorus recycling

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European Sustainable Phosphorus Platform

Launched 2013

- P resources, mining, processing
- P recycling
- P use efficiency in crop & animal production
- Environmental impacts of P-losses
- Sustainable and safe food chain, farm to diet
- Bio-nutrients circular economy

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**ESPP: a coalition for action**

- Bring together industry, R&D, public authorities, stakeholders
- Share vision for sustainable phosphorus in Europe
- Dialogue & network expertise and experience
- Build awareness
- Assess and propose policy & regulatory developments
- Disseminate innovation, business cases, value chains
Other nutrient platforms

Baltic Sea Action Group [www.bsag.fi](http://www.bsag.fi)
Netherlands 2010 [www.nutrientplatform.org/](http://www.nutrientplatform.org/)
Germany 2015 [www.deutsche-phosphor-plattform.de](http://www.deutsche-phosphor-plattform.de)

Projects:
UK
France
Czech Republic
Spain / Portugal
...

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EU Circular Economy Package

• **Public consultation (closed 20/8/2015)**
  Of 1281 respondents to the consultation:
  • 30% identified bio-nutrients as “secondary materials the EU should target first”
  • In total, 54% cited bio-nutrients or phosphorus in their response (all questions)

• **Revised Package published 2/12/2015**
  “Recycled nutrients are a distinct and important category of secondary raw materials”
  → confirms revision of EU Fertiliser Regulation to include recycled nutrients
  → underlines need for data on raw material flows
  → nutrient recovery included in Bio-Based Industries Joint Undertaking roadmap
  → absence of food waste recycling targets or collection obligation
**FIGURE 29  STRUCTURAL WASTE IN THE FOOD SYSTEM**

**FOOD WASTE**  
31% of food produced is lost or wasted

**FERTILISER UTILISATION**  
95% of fertilisers do not provide nutrients to human body

- Not absorbed by human body
- Used by inedible part of crop
- Releasing GHG emissions and causing eutrophication and drink water pollution
- Not taken up by crops (up to 70%)
- Lost or wasted vegetables

**MALNUTRITION DEATHS AND DISEASES**  
Obesity causes 5% of deaths

> 50% of European population is overweight (30%) or obese (22%)  
5% of EU population is at risk of undernutrition

**LAND DEGRADATION:**  
30-85% - 30-85% of European agricultural land is affected by soil degradation (range depending on definition and data set used)

Figure 31: Potential Economic and Environmental Impact of Current Development Scenario vs Circular Scenario

**Synthetic Fertiliser and Pesticide Consumption**

- 2030: Current 78, Circular 50, EU-27 indexed (2012 = 100)
- 2050: Current 53, Circular 17

**Fuel and Electricity**

- 2030: Current 91, Circular 75, EU-27 indexed (2012 = 100)
- 2050: Current 82, Circular 57

**Agriculture Land**

- 2030: Current 92, Circular 76
- 2050: Current 85, Circular 59

**Water Consumption**

- 2030: Current 80, Circular 59
- 2050: Current 54, Circular 31

**GHG Emissions**

- 2030: Current 89, Circular 65
- 2050: Current 80, Circular 39

**Household Expenditure on Food and Beverage**

- 2030: Current 94, Circular 82, EU-27 indexed (2012 = 100)
- 2050: Current 89, Circular 67
EU Fertiliser Regulation

- Adoption after Council, EP Parliament ... 2017?
- Defines acceptable input materials (CMC = Component Material Categories) and product specification (PFC = Product Function Categories)
- Covers fertilisers, soil improvers, growing media, liming additives, plant biostimulants
- Defines product safety (e.g. contaminants) and characteristics (e.g. <15% organic C = “inorganic” fertiliser, minimum nutrient contents per category) → plant nutrient availability is not specified
- A product achieving EU Fertiliser Regulation criteria (CE mark) will be able to be sold anywhere in Europe
- Member States will continue to be able to authorise other products as National Fertilisers (e.g. compost produced from sewage sludge in France) or to allow spreading of materials under waste-type authorisations.
**EU Fertiliser Regulation**

- **Materials already included for authorisation**
  - compost and digestate, based on JRC proposed EU End-of-Waste criteria 2013
  - **sewage sludge** excluded as input material for composts & digestates
  - certain food industry b-products: food lime, sugar molasses, vinasse
  - certain animal by-products – manures? – list not yet included in published draft

- **Proposed cadmium** limit for inorganic macronutrient fertilisers
  - 60 mgCd/kg P₂O₅ reducing to 40 then to 20 mg after 12 years

- **Other contaminant limits:**
  - e.g. for organic fertilisers: cadmium, chromium, mercury, nickel, lead, salmonella...
EU Fertiliser Regulation
Struvite, ashes, biochars

- EU Commission has commissioned JRC to prepare draft criteria
  - mandate validated in EU Fertilisers Working Group 2015
  - call for Experts to advise this work 2/5/2016
- Objective is that EU criteria be finalised parallel to adoption of Regulation
  then immediately added into Annexes
- ESPP has published proposed outline criteria for struvite and ash-based products
  - see www.phosphorusplatform.eu/regulatory
  - ESPP draft criteria for biochars underway
EU Fertiliser Regulation

Questions and comments

• ESPP member EU Fertiliser Working Group
• Traceability ?
  - ESPP proposal: obligatory traceability and labelling for any product including sewage sludge or manure derived organics (= not if incinerated)
• Clarify criteria for adding new categories of material
  - likely significant trade, evidence of no risk, “sufficiently effective”
• Other new categories for which criteria should be prepared
  - mineral nutrient products extracted from organic waste treatment gases
    (e.g. ammonium sulfate from digester gas)
  - other precipitated phosphates (K-struvite, brushite ...)
  - dried / granulated / nutrient balanced processes manure
North Sea Resources Roundabout

- Flanders, France, Netherlands, UK
- Signed 3/3/16
- See SCOPE Newsletter 120 on www.phosphorusplatform.eu
- Identify and address barriers to export/input of recycled material / recycling
- First three materials signed:
  - compost
  - rigid PVC
  - ferrous metals
- Proposal to include struvite
EIP-AGRI: Focus Group on Nutrient Recycling

- How to improve the agronomic use of recycled nutrients:
  - tools, market strategies
  - define information gaps, R&D support needs
  - input to future Horizon 2020 and other EU programme definition
- ESPP selected to Focus Group
- First meeting end May
- Need for feedback and input

New call for EIP-AGRI Focus Group Experts open!

Apply before 21 March 2016!

Two new Focus Groups will cover the following topics:

FG 19: Nutrient recycling
Standards

- December 2015: CEN SABE (Strategic Advisory Board on the Environment) recommendations for European standards developments to support phosphorus recycling → pending adoption
  - CEN 308: Characterization and management of sludge
  - CEN 13714: Sludge management in relation to use or disposal
  - CEN 13097: Good practice for sludge utilisation in agriculture
  - CEN 165/WG 40 – Wastewater treatment plants > 50 PT
  - CEN 223: Soil improvers and growing Media
  - CEN 260 – Fertilizers and liming Materials
- ISO 275 Sludge recovery, recycling, treatment and disposal
  - WG7 Inorganic and Nutrients Recovery
Other regulatory developments

- **Nitrates Directive**: “processed manure”
- **Organic Farming Regulation**: proposed validation of recycled P products
  - struvite
  - AshDec calcium phosphate recovered from ashes
- **REACH** (EU chemicals regulation):
  - Art 2(7)d “recovered” substances/by-products
  - digestates
- **BAT BREFs** (Industrial Emissions Directive):
  - pig & poultry production
  - large combustion plants – waste incineration – food, drink & milk
  - proposed “Resource Efficiency” BREF
- **BEMPs**: EMAS (EU Eco-Management and Audit Scheme Regulation) “agriculture”
- **Horizon 2020**: EU R&D funding, e.g. circular economy, nutrient cycles, nutrient recycling pilot plants
- **EU Ecolabel**: e.g. soil improvers
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