'Nenuphar' project questionnaire (BETA Vic)
EU policies on nutrient management questionnaire

1) *In your opinion, what are the current most influential EU policies on nutrient management?*

2) *In relation to the previous answer, what are the main barriers (i.e. legal, technical, financial, social, etc.), gaps and opportunities for its implementation to improve nutrient management? Please, list them for all the policies identified in the previous question.*

Green Deal

The Farm-to-Fork and Biodiversity Strategies fix the target to reduce nutrient losses by at least -50%, without deteriorating soil fertility, resulting in a reduction in fertiliser use of at least -20%.

The target to reduce nutrient losses by -50% is now included in the United Nations COP15 Kunming-Montreal convention Global Biodiversity Framework, December 2022.

Proposed new Circular Economy Act

EU Circular Economy Act announced for 2025: Ursula von der Leyen COM presidency candidacy document and Jessica Rockwell mission letter.

The exclusion of fertilisers from the EU's sanctions on Russia illustrates our dependency on imports. Russia today still accounts for around one fifth of EU fertiliser imports (N, P and K) (Eurostat).

Food security: the EU is self-sufficient in food production, but this is only possible because of import of raw materials necessary for agricultural production and food processing, in particular phosphorus (necessary for

fertilisers and for animal feed, and around 90% imported) and nitrogen fertilisers (import dependency has increased, as EU production has fallen because of natural gas prices).

Increasing nutrient recycling (in particular phosphorus) from sewage, manures and from other organic wastes, is key to the resilience of the EU food system.

There is an absence of recent data concerning nutrient potential of sewage and organic wastes compared to current EU fertiliser use, but a study in Sweden Member States suggest that phosphorus from sewage alone could cover nearly half of mineral fertiliser use.

Tighter phosphorus discharge limits and the extension of P-removal requirements in the revised UWWTD will increase the amount of phosphorus potentially available for recycling and reuse in sewage / sewage sludge.

Ambitious "reuse and recycling" targets, under the revised UWWTD, should respond to the EU's objectives of food system resilience and circular economy.

'Phosphate rock' (meaning phosphorus in any form: fertiliser, food, chemicals, …) is on the EU Critical Raw Materials List since 2014. It was not considered for possible inclusion into the sub-list of "Strategic" Raw Materials in the 2024/1252 act because this sub-list concerns only electronics, renewable energy and aerospace and does not cover food products, animal feeds, nor raw materials necessary for food production. A process should be engaged to identify 'Strategic' food security input materials, comparable to the definition of 'Strategic' (industrial) raw materials, and with comparable actions (monitoring, supply and recycling).

This would facilitate coherence with EU policies on nutrients, in particular: Green Deal (Farm-to-Fork and Biodiversity Strategies) nutrient loss reduction targets, Circular Economy, Integrated Nutrient Management Action Plan, Soil Health, Common Agricultural Policy, energy policy (for nitrogen fertiliser production).

CAP (Common Agricultural Policy)

Barriers

See above link to Water Framework Directive

Need to ensure that Member State implementation plans for CAP respect Green Deal nutrient management objectives (Farm to Fork and Biodiversity strategy nutrient loss reduction targets, Circular Economy policy nutrient recycling objectives)

Gaps

Farm nutrient balance is not obligatory (FaST tool only "advisory", no obligation to implement balance)

Nutrient management and nutrient recycling not included in most MS action plans.

Cross-compliance (conditionality of subsidies) is currently not effectively ensured for the Water Framework Directive. Water basin action plans, and nutrient loss reduction objectives defined by water basin management committees (with the aim of achieving Quality Status objectives) should be obligatory for farmers (condition of CAP subsidies). Where necessary to achieve Quality Status objectives, agricultural nutrient management plans should be obligatory under both the Water Framework Directive and CAP.

Opportunities

Revision starting currently

CAP offers major opportunities and potential funding for agricultural nutrient management and recycling policies.

Include nutrient management plans (balanced fertilisation) and nutrient loss reduction measures (buffer strips, nutrient traps, intercropping …) as obligatory measures in catchments of eutrophication Sensitive Areas and nutrient recycling actions in GAECs and SMRs of national Implementation Plans.

Organic Farming Directive

Barriers

Process for acceptance of additional recycled nutrient materials as authorised inputs is unclear and very slow.

EGTOP Opinions concern one specific company product and process, so making their translation into Organic Farming Regulation problematic, and meaning that the assessment / regulatory acceptance process is slow and inefficient (examining of products one by one rather than definition of criteria).

Undefined term "not of factory farming origin" for certain recycled nutrient materials, with different interpretations in different Member States.

Gaps

Absence of clear criteria as to which recycled nutrient materials are potentially acceptable in Organic Farming and which are not: origin of materials ? (sewage? food waste ? food industry and abattoirs ? manure ?), which nutrients (P, N, K …) ?, solubility / plant availability of nutrients ? criteria concerning processing inputs ?

Opportunities

The EU Organic Farming Regulation 2018/848 art.5(c) specifies as a "general principle" of Organic Farming "the recycling of wastes and by-products of plant and animal origin as input in plant and livestock production".

Organic Farming has a recognised need for phosphorus and potassium inputs to avoid current trends of soil depletion (see SCOPE Newsletter n°149)

Water Framework Directive

Barriers

No link to CAP cross compliance – nutrient losses are identified locally as an obstacle to achieving Good Water Quality Status, but there is no tool for implementation (no local funding, not taken into account in CAP funding) – note – same problem for herbicides/pesticides, soil erosion

Gaps

Recycling and circular economy not mentioned.

Opportunities

Art. 9 of the Water Framework Directive: "Member States shall take account of the principle of recovery of the costs of water services, including environmental and resource costs …"

Urban Waste Water Treatment Directive

Barriers

Need to ensure mechanism to pass on cost of P recovery and recycling to water consumers

Gaps

Opportunities

Revised 2024 (pending publication). Commission can fix phosphorus "recovery and recycling rates". Nitrogen recovery will be assessed.

Sewage Sludge Directive

Barriers

Risks of refusal of sew age sludge valorisation in agriculture because of consumer or supermarket / food industry concerns, perception or marketing ("not grown in sewage").

Gaps

The existing Sewage Sludge Directive does not address microplastics nor organic contaminants (pharmaceuticals, industrial organic pollutants, e.g. PFAS), nor antimicrobial resistance.

Sewage sludge quality certification schemes are variable between Member States and are in some cases perceived as "industry controlling industry" (lack of credibility).

Opportunities

Sewage Sludge Directive revision currently proposed.
Should reaffirm the objectives of nutrient reuse and recycling (as per the revised Urban Waste Water Treatment Directive), taking into account greenhouse emission reduction objectives of wastewater treatment (including possible carbon storage in soil) with use of sewage sludge in agriculture only if:
- treated to enable energy recovery where feasible
- applied only according to crop nutrient needs (spreading plan and farm nutrient balance)
- taking into account nutrient availability in sludge
- ensuring protection of soil health (in particular organic contaminants)

The Directive revision should ensure EU-wide validation of sludge quality certification systems, and establishment of a structured EU dialogue between supermarkets, food industry, farmers, consumer organisations and NGOs, science and water industry to develop consensus acceptance of sleuge quality requirements, certification and monitoring.

Waste Framework Directive

Barriers

EU End-of-Waste status is not available for recycled nutrients for non-fertiliser uses, nor for non-nutrient materials recovered from wastewaters.

National end-of-Waste status in one Member State is often not recognised in other Member States.

Gaps

The current EU and national 'End-of-Waste' process needs to be revised to facilitate recycling whilst ensuring safety, by emphasising product quality and safety, rather than input materials (origin)

Opportunities

Create a single EU market for waste (recycled materials), especially for critical raw materials (including phosphorus), as specified in the mission letter from Ursula von der Leyen to new Environment Commissioner Jessica Rockwell mission letter).

Fiscal policy

Barriers

Essentially MS not EU competence

Gaps

Opportunities

Transfer fiscal burden from jobs to eco-taxes (climate emissions, resource consumption).

Provide fiscal incentives and other tools to support market demand for recycled nutrients, as specified in the mission letter from Ursula von der Leyen to new Environment Commissioner Jessica Rockwell mission letter).

Soil policy

Barriers

At present, no EU policy on soil quality

Gaps

Need for a soil policy comparable to the Water Framework Directive

Proposed Soil Health Directive does not include local soil management plans.

Opportunities

Proposed Soil Health Directive (not yet adopted) will provide monitoring, but probably no clear obligation to improve soil quality and protect soil.

Integrate soil health management into Water Framework Directive: Quality Status objectives, obligatory management plans.

Taxonomy

Barriers

Gaps

P-recovery from sewage is included, but not P-recovery from other sources, not N-recovery

Opportunities

Animal By-Products Regulations

Barriers

The ABP Regulations were written to address the BSE crisis and are today inappropriately conservative, preventing safe nutrient recycling.

Gaps

Category1 ABP ash is currently excluded from the EU Fertilising Products Regulation, despite decades of safe use in the UK, and despite that incineration is required in order to treat Cat1 material

Opportunities

EFSA Opinion underway on Cat1 ash use in fertilisers.

In that BSE is nearly inexistent in the EU, the ABP Regulations could be revised to ensure safety in this context whilst enabling appropriate nutrient recycling.

Animal Feed Regulations

Barriers

Currently exclude use of any nutrient recovered from manure or wastewater, irrespective of the treatment and recovery process. This inappropriately excludes recovered phosphates from ashes.

Gaps

Opportunities

Where there are no pathogen safety concerns (process ensures pathogen elimination by heat or chemical treatment, or evidence shows absence of pathogens in final product), recycled nutrient materials should be assessed on the basis of quality and contaminant levels, not by initial input material.

EU Fertilising Products Regulation

Barriers

Current process to asses and authorise additional materials or processes into “CMCs” is slow and complex

Gaps

Opportunities

NMI study underway

R&D

R&D needs identified by ESPP:

- recovery of stripped ammonia as compressed gas

- P-recovery upstream from sewage upstream of cement kiln combustion
- extraction of useful phosphorus chemicals from iron phosphates
- low-energy production of P4

Permanent (every year) monitoring of nutrient flows in Europe (EU total, and each Member State or autonomous region) to identify flows in different uses, secondary materials flows (potential for recovery), imports and exports. This should include all forms, e.g. imports of phosphorus in animal feed. Such monitoring is required by Art. 20 of the EU Critical Raw Materials Regulation 2024/1252: EU monitoring of CRM trade flows and obstacles to trade, demand, supply and supply concentration, production, bottlenecks, price volatility. This monitoring information (aggregated) will be made publicly available.

From your experience, how is the transposition and implementation of these policies at national level? (NENUPHAR demo-site countries: Spain, Hungary, Slovenia, Latvia, Lithuania, Denmark and Cyprus)

ESPPno input – European organisation

From your point of view, what are the most strategic EU economic incentives for nutrient management?

CAP

In your opinion, which would be the ideal next steps for improving EU policies for nutrient management? What future policies should focus on?

Priorities for future EU policies

Bring into CAP cross-compliance with Water Framework Directive local water quality status

CAP funding for nutrient management and recycling

Market "pull" policies for recycled nutrients: create market demand for secondary material, single market for waste, especially for critical raw materials, as specified in the mission letter from Ursula von der Leyen to new Environment Commissioner Jessica Rockwell mission letter). See ESPP draft position 2024:

ESPP proposals market pull policies

Inclusion of P4 and Purified Phosphoric Acid as a "Strategic" material: see joint Declaration 2023:

Declaration P4 PPA SRMs v20_9_23.pdf

Is there anything else you would like to add regarding nutrient management policies?

As the European Environment Agency states in its report on urban wastewater treatment plants, these facilities could, with the use of new techniques and innovation, "act as resource hubs providing reclaimed water, energy, nutrients and organic materials for reuse, recycling and recovering". For this, future EU legislation needs to take a holistic approach to nutrient recycling, ensuring coherent inclusion into critical raw material, agricultural, water, waste, health and animal feed regulations, to combine reductions of nutrient losses with increasing reuse and recycling rates.

Improved harmonisation of policies for nutrient stewardship is needed. The "Integrated Nutrient Management Action Plan' (INMAP) announced under the EU Green Deal has not yet been developed. This Plan should be developed and published in order to support the Green Deal objective to reduce nutrient losses by 50%

without deteriorating soil fertility, as fixed by the Farm-to-Fork and Biodiversity Strategies, in synergy with nutrient recycling.
INMAP should be coordinated with the future EU Circular Economy Act.

See ESPP positions on INMAP 2021 and 2022:


ESPP input INMAP v27_3_21.pdf


ESPP input EU INMAP 26_4_22.pdf

Complexity of regulation, and interactions between different regulations, can be significant obstacles to nutrient recycling implementation by operators and to investment. Commission 'FAQ's can facilitate interpretation by clarifying specific operator questions (for example the detailed FAQ developed for the EU Fertilising Products Regulation). However, such FAQs should not be limited to a single regulation and should cover relevant interactions between regulations (Commission inter-service FAQ development).