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Feedback from:

European Sustainable Phosphorus Platform

ESPP suggests that the Bioeconomy strategy should more closely integrate Circular Economy policy (in particular, the Nutrient Circular Economy) and Critical Raw Materials (phosphate rock is on the EU Critical Raw Materials List). Nutrient recycling and nutrient stewardship are essential both to “feed” the bioeconomy (fertiliser nutrients are essential for biomass production) and to limit impacts from nutrient losses (eutrophication, atmospheric emissions).

Also, the roadmap should make clearer that renewable resources considered as input to the Bioeconomy should prioritise organic wastes and by-products, in order to avoid resource and land competition with food production. Reuse of organic by-products in animal feed or fertiliser (under appropriate safety requirements) or recovery of nutrients for recycling (to fertilisers, to feed biomass production, or for industrial applications) should be a core foundation of the Bioeconomy Strategy. An important challenge in recycling and upcycling of organic wastes and by-products, which should be actively addressed in the BioEconomy Strategy, is that of contaminants and safety (pathogens, plant diseases and invasive species, organic contaminants such as pharmaceuticals or consumer chemicals). Better data, scientific understanding and risk assessment are essential. It is however equally important that the Bioeconomy Strategy engage dialogue with farmers and landowners, the food & beverage industry, retailers, consumer and environmental

associations to address risks, safety and perception of contaminants and to reduce the risk of rejection of organics recycling (e.g. refusal of use of sewage or manure derived recycled nutrients in food supply chain or bio-product criteria).

We note that the revision of the EU Fertilisers Regulation (underway) is an important tool to facilitate recycling of nutrients and return of organic carbon to soil, but that issues remain to be resolved concerning organic materials and by-products in this regulatory text. The Bioeconomy Strategy should include a link to sustainable fertilization, which is key to feed biomass production.

We note that the reference to “malnutrition” should be clarified in the proposed Roadmap. A key societal challenge today in Europe and in much of the world, directly linked to resource, nutrient and land requirements for biomass production, is dietary choice, and “overnutrition” with consumption of meat, protein and calories higher than dietary requirements or health recommendations.

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ESPP input to the EU BioEconomy Strategy

20th march 2018

We would suggest that the Bioeconomy strategy should more closely integrate Circular Economy policy (in particular, the Nutrient Circular Economy) and Critical Raw Materials (phosphate rock is on the EU Critical Raw Materials List).

Under (A) “Problem the initiative aims to tackle”

Point (f) “Get a better understanding ...”

Nutrient recycling and nutrient stewardship are essential both to “feed” the bioeconomy (fertiliser nutrients are essential for biomass production) and to limit impacts from nutrient losses (eutrophication, atmospheric emissions).

The Bioeconomy Strategy should address also nutrient demand and losses (phosphorus, nitrogen ...). Without nutrient supply (from mineral fertilisers, recycling of organic wastes and by-products) it will not be possible to “grow” the raw materials of the bio-economy. This is particularly critical for phosphorus, for which Europe is 90% dependent on imports (phosphate rock Critical Raw Material) and which cannot, unlike nitrogen, be fixed by plants. Nutrient supply must become more sustainable through nutrient recycling, whilst at the same time reducing losses to water (eutrophication / Water Framework Directive) and air (ammonia / Emissions Ceilings Directive)

Under (B) “What does the initiative aim to achieve and how”

The Bioeconomy strategy should **prioritise organic wastes and by-products as** renewable resources considered as input to the bioeconomy, in order to avoid resource and land competition with food production.

In (B), the Roadmap should clearly specify that “renewable resources” includes “unavoidable organic wastes and by-products” - otherwise this may be interpreted as meaning only crop/biomass.

Reuse of organic by-products in animal feed or fertiliser (under appropriate safety requirements) or recovery of nutrients for recycling (to fertilisers, to feed biomass production, or for industrial applications) should be a core foundation of the Bioeconomy Strategy.

We note that the **revision of the EU Fertilisers Regulation** (underway) is an important tool to facilitate recycling of nutrients and return of organic carbon to soil, but that issues remain to be resolved concerning organic materials and by-products in this regulatory text. The Bioeconomy Strategy should include a link to sustainable fertilisation, which is key to feed biomass production.

Contaminants: An important challenge in recycling and upcycling of organic wastes and by-products, which should be actively addressed in the Bioeconomy Strategy, is that of contaminants and safety (pathogens, plant diseases and invasive species, organic contaminants such as pharmaceuticals or consumer chemicals). Better data, scientific understanding and risk assessment are essential. It is however equally important that the Bioeconomy Strategy **engage European dialogue on contaminants and safety with farmers and landowners, the food & beverage industry, retailers, consumer and environmental associations** to address the perception of contaminants and to reduce the risk of rejection of organics recycling (e.g. refusal of use of sewage or manure derived recycled nutrients in food supply chain or bio-product criteria).

Under Roadmap (B) “What does the initiative aim to achieve and how”

We note that the reference to “malnutrition” should be clarified in the proposed Roadmap. A key societal challenge today in Europe and in much of the world, directly linked to resource, nutrient and land requirements for biomass production, is **dietary choice, and “overnutrition”** with consumption of meat, protein and calories higher than dietary requirements or health recommendations.

In the Roadmap, we suggest to modify the words: “*double burden of malnutrition and undernutrition*”. The challenge of “*overnutrition*” should be specifically cited. Malnutrition is ambiguous: as written it seems this applies only to undernutrition, whereas malnutrition is often linked to overnutrition. Overnutrition, and related unbalanced diet (low fibre, high sugar, high fat, high processed foods) is correlated to health problems with unsustainable costs for society.

Under B(3), bio-based sectors to reinforce, nutrient reuse and recycling should be mentioned (Nutrient Circular Economy), because this will be essential at all points in the bioeconomy (crop production, food & beverage processing, organic by-product and waste management, biomass processing and production of bio-based products, bio-fuels). Nutrient recovery and recycling at all of these levels of bio-based production will be necessary to sustainably feed biomass production, necessary to feed these sectors, and to reduce nutrient losses.

Under (B8) “*resilience of land and sea ecosystems*”, a key point is **reduction of nutrient losses, in order to address eutrophication, which today remains one of the biggest causes of failure to achieve Water Framework Directive quality objectives for freshwaters, estuaries and enclosed seas**. Climate change is expected to accentuate eutrophication risks, so making reduction of nutrient losses increasingly critical for the sustainable development of the bioeconomy.

This reduction of nutrient losses offers synergy with the use of recycled, bio-based fertilisers and the **return of organic carbon to soil** (Paris 3/1000 climate change commitment,). Soil organic carbon is also critical for nutrient efficiency and water retention, and so drought and climate change resilience of biomass production.

Under Roadmap (C) “Consultation of citizens and stakeholders”

Under this section, should be underlined need to **engage dialogue at the EU level and on the ground, with farmers and landowners, the food & beverage industry, retailers, consumer and environmental associations to address risks, safety and perception of contaminants** in recycling of organic materials (see above).

Consultation with concerned stakeholders (farmers and landowners, industry, NGOs, local and regional authorities, science ...) is also necessary to **better understand and to agree joint understanding and so develop shared strategies on the following:**

- **nutrient needs as inputs to grow the biomass raw material** to supply the Bioeconomy, and how to sustainably provide for these nutrient requirements
- **data and understanding of nutrient flows**, including relevant information on potential of different flows for recycling (nutrient concentration, contaminants) and how to share and manage such information, to facilitate optimal reuse and recycling
- **environmental impacts of this nutrient input** (fertilisers for crops, nutrients for algae cultivation ...) and **how to reduce nutrient losses** to waters (eutrophication) and to air (particulates, climate change)
- **potential for recovery of nutrients** from transformation of bio-resources to feed back into biomass production (or to other uses)
- **contaminant challenges** in these cycles
- **links between the food industry and non-food bio-economy** (use of biowastes in food production, use of food wastes in the bioeconomy) and resulting safety and consumer confidence questions
- **interactions with renewable energy** (e.g. biogas production: potential for nitrogen N recovery, phosphorus P is in digestate)
- role of nutrients in “**biorefineries**” (and biorefineries of different structures and types)
- possible **technology transfers** between sectors such as waste water, agriculture/manure, bioenergy, biorefineries ...
- link to “**sustainable chemicals**” (cf. current CEN Joint WG underway with DG GROW mandate to identify standards needs for sustainable chemicals in the circular economy)