



DRAFT SuMaNu Policy recommendation #4

The SuMaNu project platform produces a set of policy recommendations to support its aim of sustainable agriculture and nutrient recycling. These policy recommendations have been developed based on earlier projects and expert work in the SuMaNu project with a particular focus to serve the objectives and drafting process of the HELCOM Baltic Sea Regional Nutrient Recycling Strategy.

Please note that this is a draft. The final version will be published later.

Regional nutrient reallocation

Recommendations

- Develop a national strategy and consequent measures to secure sustainable use of recyclable nutrients with potential inclusion of simultaneous biofuel production.
- Create incentives to support the use and the production of manure based recycled nutrients.
- Support for the development and demonstration of using manure-based recycled nutrients, of robust manure processing technologies and of their impacts on regional level.
- Support for novel solutions and tools to raise awareness on and open practical possibilities for nutrient recycling.

Background

This policy brief focuses on regional nutrient reallocation to balance the supply and demand for manure nutrients. Manure processing is one viable alternative to ensure sustainable reuse of nutrients, and as a consequence, improve water quality.

To guarantee the sustainability of regional nutrient reallocation, proper accounting of the characteristics of the biomasses available, actual crop nutrient needs (including soil nutrient level) and nutrient balances both in the area of surplus (supply) and in the receiving region with fertilization need (demand) should be considered.

Balancing excess nutrients – supply and demand

Not all farms have sufficient field area for the sustainable use of the manure nutrients. They may need to relocate some of the nutrients to other farms and/or to (partially) separate nitrogen and phosphorus into different fractions to change their usability as fertilizers.

The need for relocation may also apply to a larger region, such as a certain area in a country. In regions of intensive animal production, the availability of manure nutrients may exceed the need of the crop production in that particular region (supply). In other regions, there are little manure nutrients available and a clear need for fertilizers. These regions could make use of recycled nutrients (demand). To enable regional reallocation, more advanced fertilizer products should be produced via manure processing to reduce the mass to be transported and/or to divide the nutrients into different products.

The goals and objectives of regional reallocation could, in addition to reducing environmental pressures in/from a given region, be linked to broader and more general objectives to boost bioeconomy, to reduce dependency on imported mineral fertilizers (circular economy, better self-sufficiency) or to support R&D, business innovations and pilots based on scientific expertise or industrial activity deriving from a given region.



Nutrient cycling in agriculture. Manure Standards -project.

Recommendations for steering mechanisms in more detail

¹ Natural Resources Institute Finland (Luke) has published a guide on the use of recycled fertilization products (at the moment only in Finnish, [http://urn.fi/URN:ISBN:978-952-](http://urn.fi/URN:ISBN:978-952-326-759-6)

1. Develop a national strategy and consequent measures to secure sustainable use of recyclable nutrients with potential inclusion of simultaneous bio-fuel production

To reduce emissions from manure, enhanced manure management and use is the key. If the solutions are linked to bio-fuel production, emission reduction may become even more effective especially with regard to greenhouse gases. An overarching strategy on the national level to support sustainable nutrient recycling with simultaneous transition towards renewable transportation would help align different sector policies (the environment, climate, energy, transport, land use), address multiple objectives, ensure broad commitment to the change and plan effective steering mechanisms. Such strategies may give security for businesses to invest in novel technologies and services in nutrient recycling.

2. Create incentives to support the use and the production of manure based recycled nutrients

Direct support for the use of recycled nutrients is recommended as they must be made a viable alternative to mineral nutrients from the perspective of an individual farmer. They could possibly be built into the CAP. The steering mechanisms should be sensitive and adapted for different manure types and different recycled fertilizer products, possibly with regional specifications, due to their different characteristics and relative share of different nutrients (and their crop availability). This also means different rates for possible compensation due to, for instance, increased field application costs due to the need of specialized dosing or equipment for different types of manures or fertilizer products.¹

Investment support for farm structures, such as storages and machinery, enabling the use of recycled nutrients may also be important for the market of recycled nutrients to develop. Support for businesses in contracting services specialized in recycled nutrients should also be considered.

To support the formation of “regional nutrient redistribution centres” to process and produce manure-based fertilizer products, investment subsidy for manure processing plants should be set. However, detailed conditions should be

[326-759-6](http://urn.fi/URN:ISBN:978-952-326-759-6)), and this assesses i.e. the applicability of different field application machinery in fertilization by recycled products.

attached to the subsidy to meet the objective of regional nutrient reallocation, including securing the sustainability of nutrient use on different territorial scales, of the processing chain (e.g. preferably positive energy balance) and in the use of the possible by- and end-products. For instance, anaerobic co-digestion of manure with sewage sludge should be avoided due to a higher contamination risk and lower P fertilizer value of the sludge. Attention should also be placed on e.g. antibiotics and heavy metals in manure to ensure no limitations in the use of the end-products (see SuMaNu Policy Recommendation #3).

Investments in manure processing could be also deployed to support smaller-scale solutions to enable regional nutrient reallocation and simultaneously facilitate locally enhanced nutrient use. E.g. mechanical separation on farms may allow part of the slurry to be transported further to a large-scale manure processing plant, to farm-cooperative processing plants or directly to other local farms. Further processing into more concentrated fractions, though, is usually economically viable only on larger scale.

To support manure being directed to regional processing plants reallocating the nutrients, incentives may also be needed to compensate for logistic costs from the farms to the plants and/or the recycled nutrients from the plants to farms. The support should be given only in cases of verified sustainable use of the end-products, i.e. verified nutrient reallocation.

Such incentives may only be needed for a shorter period of time while the markets for recycled nutrients are developed, their use on farms increased, the services supporting the use of such products developed and thus the price of the products secured.

3. Support for the development and demonstration of using manure-based recycled nutrients, of robust manure processing technologies and of their impacts on regional level

The development and demonstration of using and producing manure-based fertilizer products should be advanced. The farms need to know how the manure-based recycled nutrients work as fertilizers and how they should be handled in practice. Their quality and impacts must be known well to make them feasible options for existing fertilizer products and to open up a real market for them.

Furthermore, the processing technologies should still be improved, and their applicability and technical feasibility demonstrated. Also, their impact on practical nutrient recycling on different scales, in particular the regional scale, should be demonstrated.

4. Support for novel solutions and tools to raise awareness on and open practical possibilities for nutrient recycling

There are examples of manure exchange platforms and programmes around the world in which crop farms, horticulture and gardens could team up with animal farms to make better use of manure. These can be supported as purely voluntary initiatives by market and private actors, as local community initiatives or as more strategic regional or national programmes.



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