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- ㉑ AGRANA RESEARCH & INNOVATION CENTER (AG)

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Optimising bio-based fertilisers in agriculture

Providing a knowledge basis for new policies



COORDINATOR:

Natural Resources Institute Finland (Luke)

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Bio-based fertilisers (BBF) have the potential to minimise the environmental impact of existing fertilisers and improving sustainability through recycling of nutrient-rich side-streams. This will be achieved by developing a profound knowledge basis and new coherent methods to take full advantage of BBFs, focusing on the most promising technologies for BBF production and evaluating their fertilisation potential and other properties against national and European fertilisation requirements.

Objectives

LEX4BIO aims to decrease European dependency on finite and imported, apatite-based phosphorus and energy-intensive mineral nitrogen fertilisers. This will be achieved through the implementation of several objectives including:

- **Mapping at local, regional and European scale** the **nutrient availability** to produce BBFs, assessing their potential and identifying legal barriers and constraints
- **Identifying novel BBFs for crop production** and determining their effect on soil quality and crop growth
- **Determining the risks related to food safety, human health and environmental losses** after application of BBFs and producing guiding principles for the safe use of BBFs
- **Assessing the integrated ecological impacts** over the entire lifecycle of the production and use of BBFs
- **Determining the logistic costs, public perceptions and political actions required** for optimal use of BBFs

Expected Results



Providing a knowledge basis for developing safe and efficient BBFs to ease EU transition towards circular economy and fertiliser self-sufficiency by using BBFs.



Creating a coherent policy framework for sustainable production and use of organic-based fertilisers.



Replacing conventional, non-renewable mineral fertilisers with BBFs, reducing the external dependence and risks related to depletion, market variability, security and foreign policy.



Balancing nutrient concentrations between or within regions, thus increasing resource efficiency.



Reducing the environmental impact linked to the dispersion of nutrients present in waste flows, or to the production of fossil-based fertilisers.