

Mapping technologies for circular fertilizer production: insights from 30 nutrient recovery cases in the EU and AU

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Aim and methods

The EU-funded FERTITEC project aims to collect scattered information on nutrient recycling and recovery projects across different platforms and identify nutrient recovery technologies.

In total, the project gathered information on 188 technologies and practices related to circular fertilizer production from national and EU-level initiatives, such as

- NUTRIMAN
- FERPLAY
- CiNURGi
- SYSTEMIC
- LEX4BIO
- MainstreamBIO
- P2GreeN
- SEA2LAND
- Novafert

From this larger set, 30 cases from regions across the EU and the African Union were chosen for further assessment based on geographical and technological representativeness, scale and data availability.

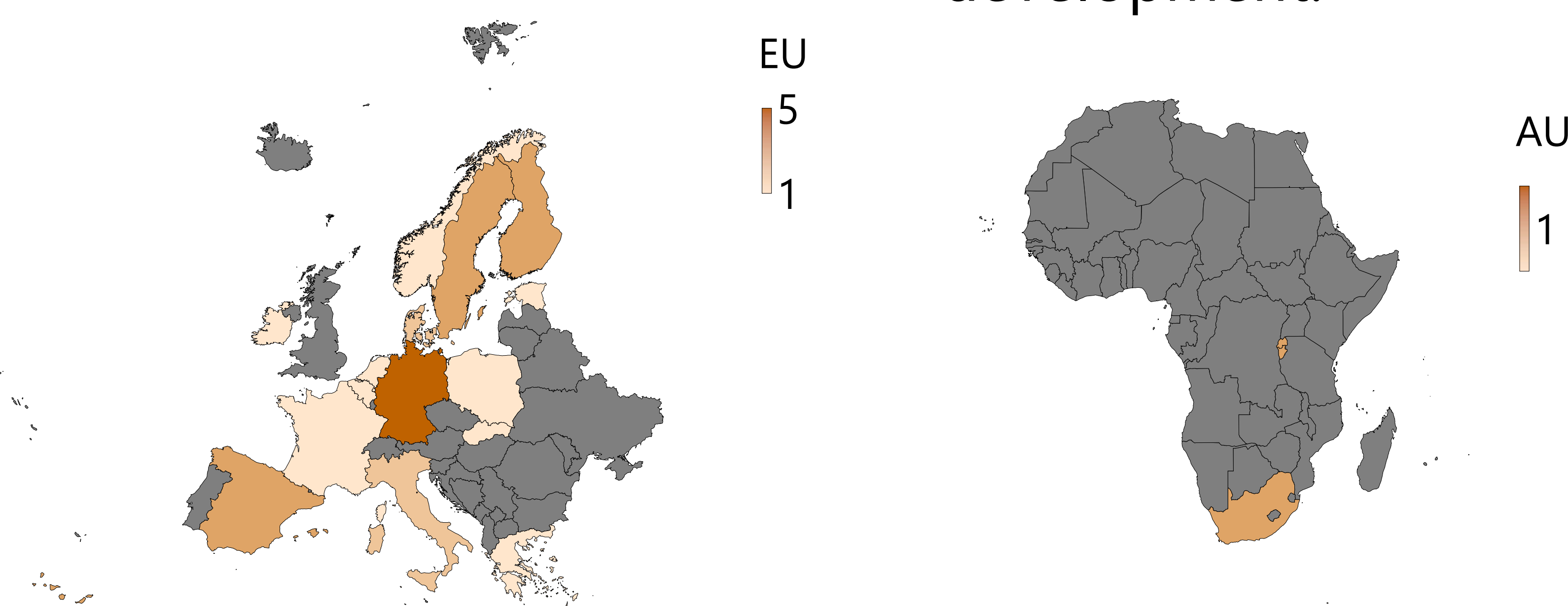


Figure 1. Geography and number of selected 30 cases in EU and AU.

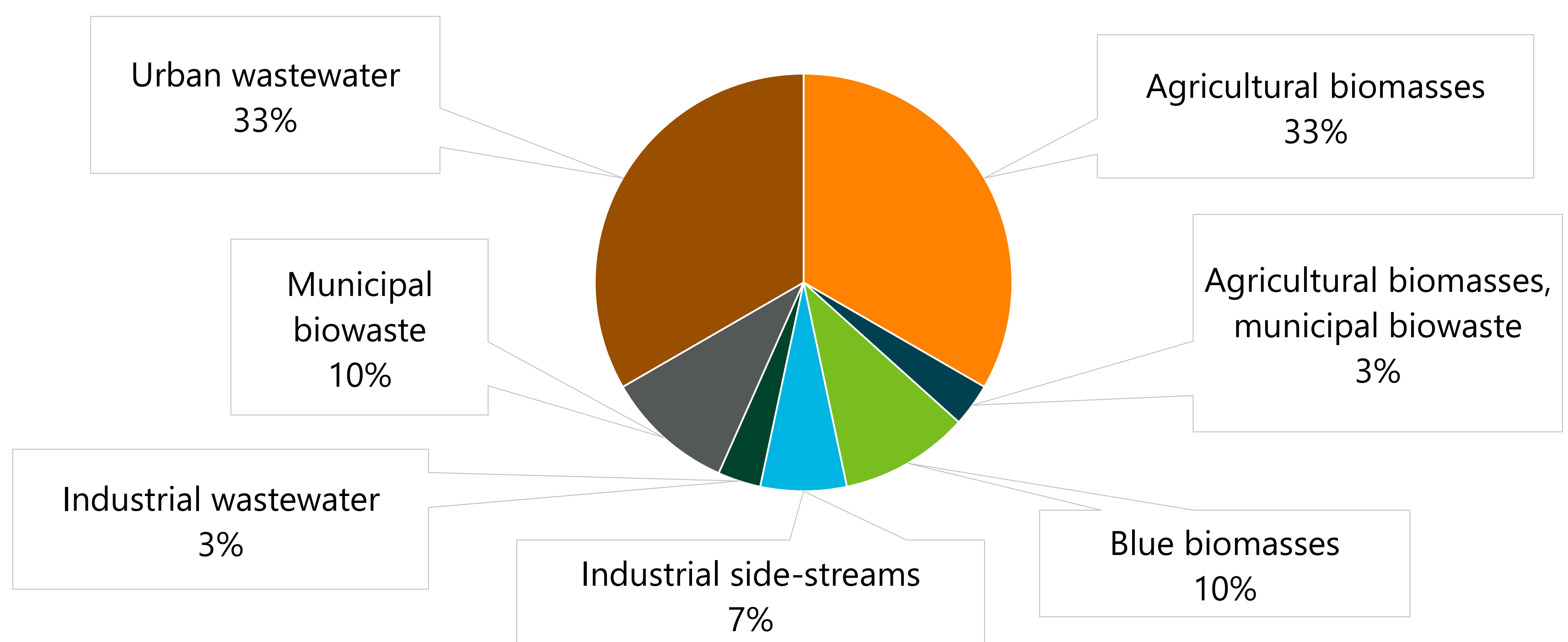


Figure 2. The main biomasses related to the technologies.

Results and next steps

The chosen cases reflect a wide array of nutrient recovery routes that utilize secondary materials from agricultural, municipal, and industrial sources.

The technological approaches in these cases are equally diverse.

These cases lay the groundwork for the next project phase, which will deepen the assessment of technological, environmental, and societal performance to guide future circular fertilizer development.

Table 1. Main technologies involved.

Main technology	Number of cases
Algae cultivation	1
Anaerobic digestion and post-treatment	5
Composting	2
Concentration/evaporation	2
Drying, mixing, pelletisation/granulation	3
Fermentation	1
Hydrothermal carbonisation	1
Incineration and recovery	4
Insect farming and post processing	2
Membrane stripping, P precipitation	1
N precipitation and recovery	1
Pyrolysis	1
Separation/fractionation	1
Stripping and scrubbing	1
Struvite precipitation	1
Vivianite precipitation	1

30 cases will be compiled into datasheets, which will be made available via the FERTITEC platform later in 2026.

<https://fertitec-project.eu/>

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