



## BBF VALUE CHAINS

### REGIONAL BIO-BASED FERTILIZER VALUE CHAINS AND BUSINESS MODELS

#### SHORT SUMMARY FOR PRACTITIONERS

EN version

The development and implementation of RUSTICA bio-based fertilizer (RBBF) production technologies contributes to the provision of sustainable alternatives to mineral fertilizers. However, questions remain on the establishment of viable regional value chains and business models. In May and June 2022, the second round of RUSTICA-workshops were organized in the 5 partnering regions. In all of these regions, stakeholders from the agri-food, fertilizer and waste treatment sector were brought together to discuss potential value chains for innovative bio-based fertilizers.

In all regions, the value chain mapping revealed that some actors carry out multiple stages of the value chain. Similar actors were identified as potential adopters of RBBF-technologies. Stakeholders agreed that small waste producers such as farmers would not be interested in adopting RBBF-technologies given organizational barriers such as lack of infrastructure and time. High energy and mineral fertilizer prices were identified as a great opportunity for bio-based fertilizers, while complexity of legislation was considered a critical threat. Finally, stakeholders generally agreed that the best approach to implement new bio-based fertilizer value chains is to build on existing networks and business models.

#### SHORT SUMMARY FOR PRACTITIONERS

NATIVE version

De ontwikkeling en toepassing van RUSTICA biogebaseerde meststoffen (RBBF) technologieën draagt bij tot het verschaffen van duurzame alternatieven voor minerale meststoffen. Er blijven echter vragen over de totstandbrenging van adequate regionale waardeketens en bedrijfsmodellen. In mei en juni 2022 werd de tweede ronde van RUSTICA-workshops georganiseerd in de 5 partnerregio's. Belanghebbenden uit de agrovoedingssector, de meststoffensector en de afvalverwerkingssector werden samengebracht om potentiële waardeketens voor innovatieve biogebaseerde meststoffen te bespreken.

In alle regio's bleek uit het in kaart brengen van de waardeketen dat sommige actoren meerdere activiteiten van de waardeketen uitvoeren. Soortgelijke actoren werden geïdentificeerd als potentiële adopters van de RBBF-technologieën. De belanghebbenden waren het erover eens dat kleine afvalproducenten zoals landbouwers niet geïnteresseerd zouden zijn in het invoeren van RBBF-technologieën gezien organisatorische belemmeringen zoals gebrek aan infrastructuur en tijd. De hoge energie- en minerale meststoffenprijzen werden beschouwd als een grote kans voor biogebaseerde meststoffen, terwijl de complexiteit van de wetgeving als een belangrijke barrière werd beschouwd. Tot slot waren de belanghebbenden het erover eens dat de beste aanpak om nieuwe waardeketens te implementeren, is om voort te bouwen op bestaande netwerken en bedrijfsmodellen.



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#### CONTEXT

Residues and waste streams from the fruit and vegetable agri-food system can be used as fertilizer resources by employing innovative soil improvement production technologies. This can stimulate the development of sustainable alternatives to mineral fertilizers, since the result of the development of these technologies can be a valuable bio-based fertilizer (BBF) tailored to regional needs.

#### PROBLEM

Questions remain on the establishment of regional value chains and business models centred around these technologies. It is necessary to map the current value chain in order to understand each regional context before elaborating on potential new BBF value chains and business models.

#### SOLUTION

In May and June 2022, the second regional RUSTICA-workshops were organized in the 5 partnering regions: Flanders, Friuli-Venezia Giulia, Almería, Pays de la Loire and Valle del Cauca. In a first exercise, the regional bio-based fertilizer value chains were mapped. In a second exercise, barriers and drivers towards BBF-technology investment were identified. Finally, potential circular value chain configurations were designed.

#### OUTCOME

1. In all regions, the value chain mapping revealed that some actors carry out multiple stages of the value chain at once, such as waste production and treatment. Additionally, similar potential adopters of innovative BBF-technologies were identified: either individual adopters such as waste management companies or fertilizer producers, or adopting networks of waste producers or technology providers.
2. Stakeholders agreed that small waste producers such as farmers would not be as interested in adopting the BBF-technologies as waste collectors, processors or fertilizer producers. They stressed the importance of organizational barriers such as lack of infrastructure and time. Additionally, stakeholders considered the high energy and mineral fertilizer prices as a great opportunity for bio-based fertilizers, while they considered complexity of legislation as a critical threat.
3. Across regions, all stakeholders agreed that it would be easier to build on existing networks and business models such as well-organized collection systems.

#### PRACTICAL RECOMMENDATIONS

- ✓ Small waste producers should not be targeted as key operating actors for complex waste conversion technologies given knowledge barriers and organizational hurdles such as lack of infrastructure and time.
- ✓ Key hurdles to be overcome include the complexity of legislation and the logistic difficulties of cooperation between actors.
- ✓ To build regional bio-based value chains and business models, it is most feasible to build on existing systems of waste collection and fertilizer production. These existing systems are different across regions. Therefore, value chains and business models can differ regionally.