

Description on the research I am conducting as a new PhD student from September 2018

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The main objective of my PhD project is to investigate the barriers for and the impacts of introducing emerging waste management and bio-refinery systems at societal levels. Special focus of my PhD is to understand the existing governance framework for food waste in Europe and in case-study countries to assess the impacts of introducing innovative decentral systems on the environment and greenhouse gas emissions. Based on this, to explore the regulatory barriers for such an introduction, and to evaluate the need for new policy instruments and governance systems to support the transformation into closed loop (circular bio-economy) organic matter cycles from present European and national reference systems to the decentralized system. Barriers at horizontal (e.g. between sector policies) and vertical (EU, Member State, regional, local) scales will have to be identified and solutions proposed.

Some of the specific purposes of my PhD project are:

- To Measure the efficiency of the current policy/regulative framework in reducing micro pollutants (i.e. heavy metals) accumulation in our food and food waste at international, EU, and local level (from centralized systems to circular decentralized systems).
- To analyze the practical viability and effectiveness of alternative regulatory measures (economic and policy measures) to support local bio resource management systems as a key towards a regenerative European level circular economy.
- To assess the sustainability performances of local production systems (economic, environmental and social). I.e. Measure the possible socio-economic advantages of local bio-based production systems.