"Manure nutrient recycling" session – Summary of outcomes

- The presented projects showed a certain diversity, focusing (not only) on manure, but some targeting AD digestate in general (also including other substrates), optimized feed for improved animal digestion, algae technology integrated in the processing, or organic waste from aquaculture as a nutrient source.
- All projects have a balanced nutrient management and reduced nutrient loss / reduced emissions in agriculture as a common target, in most cases leading to P-/N-rich products (potentially in combination with carbon compounds) to be used as a fertilizer.
  Regarding manure, the handling AND the management on farm level is key.
- Currently, the regulatory and operational guidelines for farmers are insufficient for a precise crop nutrition as the Nitrate framework directive and the water framework directive are sometimes conflicting; in some countries the only focus is on the limitation of Nitrate, but Phosphorus is "hidden under the carpet". Farmers need support not to violate any directive.
- A sufficient process technology level provided, the relevant goal for all projects should be to deliver products which have a high user-acceptance in the market (good example: The SYSTEMIC project has already 28 plants as followers).

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- "High value products" should be prioritized; a blend of several components (which requires to fulfill FPR CMC criteria) to create customized fertilizers is a desired outcome.
- Terminology: "Tailor-made fertilizer (TMF)" is a project-derived term (not in line with legislation terminology) used for such kind of customized fertilizer products that are precisely dedicated to the respective crop, seasonal and soil requirement. This can be a mineral fertilizer (MF), an organo-mineral fertilizer (OMF) or an organic fertilizer (OF).
- The preferred types of manure by farmers are (1) cattle, (2) pig, (3) poultry manure.
- P and N have the highest priority for recycling because they are creating the biggest concerns for soil and water. An improved nutrient use efficiency could also be considered for Sulfur and Carbon. Potassium does not create any issue and is thus not in focus - but can be used for irrigation as a component of the liquid phase after separation.
- Still open points: Investment / operation costs, transporting distances, will the market be ready for recycled products, will any supporting tools be provided along the EU Farm-to-Fork strategy?