

Friend or foe in sustainability transitions? The interplay of diversity and directionality in the Wageningen-based Alternative Protein Innovation System (APIS)

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Literature on mission-oriented innovation policy and mission-oriented innovation systems has highlighted the necessity of clear 'directionality' when it comes to achieving transitions to more sustainable modes of production and consumption. Directionality is created by actors across the value chain and the wider network in attempts to shape transition pathways. Simultaneously, literature on diversity in transitions has stressed the need of keeping diverse directions open while warning for early lock-ins and path dependencies. Like directionality, diversity is also created by innovation system actors in order to tackle the complex and uncertain nature of sustainability transitions. We aim to show how socio-technological processes related to the protein transition are shaped by differing dynamics across scales, thus resulting in a complex constellation of diversity and directionality in a mission-oriented innovation system. We conduct a qualitative single-case study of the Wageningen alternative protein innovation system (APIS) by means of 35 semi-structured interviews. The research question is as follows: How do diversity and directionality unfold in a mission-oriented innovation system? We focus on the Wageningen APIS in order to provide insights into the types of socio-technological trajectories actors are pursuing in alternative proteins and how different selection environments shape each solution trajectory. We observe that the Wageningen APIS is composed of a strong mission of a 'Protein Transition' and exhibits a clear directionality towards meat substitutes. Yet, our results show that underlying this direction several diverse transition trajectories coexist due to factors such as researchers' personal interests and competences, networks, expected consumer preferences, and global future visions.