

## Upscaling of a regional sustainable farming network to an international knowledge-exchange network: implications on knowledge exchange and stakeholder learning.

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Today's Agricultural Knowledge and Information Systems (AKIS) do not meet the challenge to increase simultaneously agricultural productivity and sustainability. Furthermore, increased attention is required to close the research and innovation divide (EC, 2013). Cooperation between research and other actors (i.e. extension, farmers, ...) is crucial for innovation-driven research and should be promoted, notably through the European Innovation Partnerships (EIP).

The European DAIRYMAN network is regarded by the European Commission as a good example of EIP. The network is an upscaling of the regional Dutch network 'Cows and Opportunities' to the broader north-west European region. We describe both networks and the process of upscaling. We investigate the success of the upscaling, by reflecting on differences in network structure (composition, organization) and processes of knowledge exchange within the networks, and if and how these networks contribute to closing the aforementioned divide.

The Dutch 'Cows and Opportunities' network started in 1998 as a public-private partnership to deal with nutrient management issues in dairy farming (Oenema et al., 2001). The regional network comprises 16 commercial pilot dairy farmers that continuously strive - together with researchers, advisors, and an experimental farm - towards the development of a sustainable and socially acceptable dairy farming system.

The DAIRYMAN project (INTERREG NWE, 2009-2013) was constructed as an upscaling of this Dutch network, where a new approach of cooperation in knowledge production and transfer was elaborated and practiced. The overall aim of the project was to strengthen rural communities in NW Europe by improving farm resource management in a profitable way, leading to a more competitive dairy sector, stronger regional economies, and improved environmental performance of the rural area. In 10 European regions networks were set up, comprising a total of 130 commercial dairy pilot farms, 9 so-called Knowledge Transfer Centers (KTC's) constructed as experimental farms, extended with other stakeholders like policy makers and farm advisors. In addition to the regional networking activities, the DAIRYMAN project also focused on the interregional connection of these networks. Interregional networking activities stopped at the end of the project period, but some of the regional activities are still ongoing.

We have performed in-depth semi-structured interviews with regional key partners and selected pilot farmers and analysed documents from the regional networks to gain insight in the network structures and activities. Information on knowledge exchange and learning processes will be described by performance indicators (INTERREG monitoring framework), and a selection of social learning indicators (Dlouhá et al., 2013).

Based on preliminary results we discern considerable differences between the regional networks. These differences relate to actors involved, intensity of communication and collaboration, and trust between actors in the network. Regional networks differed in level of maturity, both in terms of expertise (e.g. senior scientists vs. junior scientists) and duration (built on existing network vs. newly constructed network at start of DAIRYMAN project). This significantly influenced the level of trust between actors, the networking activities and the range of knowledge exchange. Regional networking activities included, amongst others, discussion groups with pilot farmers, researchers and advisors, pilot farm visits and workshops. The interregional DAIRYMAN network was constructed by connecting the regional networks, at an overarching level. The management of the interregional network was directed at stimulating learning and knowledge exchange between regions, and was performed by a selection of regional actors (mainly researchers). Overall, it was concluded that knowledge and tools can be exploited much better by constructing and interconnecting regional networks. However, to improve bottom-up knowledge transfer and innovation-driven research, attention should be given to a good representation of all stakeholder types at interregional level.