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**Multidisciplinary approaches to livestock production**

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Livestock production is an essential component of a sustainable food supply. The dimensions of sustainability combined with the complexity of biology call for multidisciplinary approaches to assess the functioning of (components of) livestock production systems. Horizon 2020 projects such as Saphir and Feed-a-Gene are funded by the European Commission and have a multidisciplinary approach towards livestock production (e.g. nutrition and genetics, genetics and health, novel management strategies and socio-economic aspects). The objective of this session is to address and discuss the challenges and opportunities in multidisciplinary research in livestock production. As there is no 'one-size-fits-all' solution, how can different actors and stakeholders make collectively best use of (disciplinary) knowledge and levers to make livestock production more sustainable?

**Twists and turns of interdisciplinary work in research projects: which conditions and achievements ?**

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The emphasis on interdisciplinary research is far from new: promoting it was at the core of the DGRST French research plan in the 70's and of the Hawkesbury University experience in Australia. It resulted in the emergence of the INRA SAD division in the 80's. Today, many funding agencies ask for interdisciplinary work teams. Well recognized journals such as *Science* give room to interdisciplinary results. Doctoral schools value interdisciplinary training even if this remains controversial regarding recruitment standards. More epistemological reflexion is available to address the foundations of interdisciplinary scientific work. Anyway, practising interdisciplinary work and managing interdisciplinary projects remain a big challenge. There is no clear-cut recommendations or on-the-shelf tools which can be transferred to newcomers. Many researchers who joined interdisciplinary projects find it difficult, disappointing. They acknowledge that the project is more a collection of disciplines working on separate tasks with loose coordination in terms of renewed understanding of the issue addressed in the project. Why is it so? I will rest on my experience at the interface between agronomic and social sciences to address the dynamic of interdisciplinary work in practice. I will put emphasis on various dynamic patterns and stress the need for intermediary objects, shared learning and reflexivity along the interdisciplinary journey. I will illustrate that fruitful interdisciplinary work takes place at the border of the disciplines but often questions core assumptions underlying its main stream. Therefore, taking part to interdisciplinary work put the participants in a risky position in their own community as the legitimacy of their work becomes discussed. To escape this uncomfortable position, researchers often trigger a debate on the balance between excellence and relevance of the scientific work. I will then conclude by focusing on the management of interdisciplinary projects. I will argue that people involved in the management of interdisciplinary work act as brokers. As for any brokering work this implies to have the ability and the curiosity to navigate between different points of view on a reality and to support the cross fertilization between these points of view.