

Bridging two communities in farming system research: IFSA europe group and farming system design

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Introduction

Farming system research (FSR) studies groups of farms sharing biophysical, socioeconomic, or operational traits and constraints. Its focus has evolved from enhancing smallholder productivity through technical improvements to adopting a holistic framework integrating systems thinking and cross-level interactions. Contemporary FSR emphasizes farm resilience, co-design methods, and farmers' active role in research and innovation (Darnhofer et al. 2012). The International Farming Systems Association (IFSA) institutionalized this approach, framing farming systems as subsystems of local communities or food networks (Brossier et al. 2012). Although design has long informed FSR to adapt technologies, practices, and systems guided by diagnostic phases (Byerlee et al. 1982), the Farming System Design (FSD) community prioritizes its role in modeling for innovation and integrated assessment (Donatelli et al. 2007), later incorporating stakeholder-driven processes (Meynard et al. 2023). Amid increasingly complex challenges facing the agri-food sector, integrating diverse perspectives into interdisciplinary cooperation is promising (Batie 2008). While this diversity is a strength, it may also lead to overlap and redundancy. This analysis explores potential bridges between the IFSA and FSD communities, aiming to compare their conceptual foundations identify complementarities and highlight shared priorities to strengthen cooperation in advancing FSR.

Linkages between the two Communities' conceptual foundations

FSR institutionalization unfolded in three phases: (1) 1980s Kansas State University conferences birthed the Association for Farming Systems Research and Extension, later evolving into IFSA's global symposia until 2005. (2) From 1993, the IFSA European group formed a steering committee and launched regular biannual symposia. (3) In 2007, FSD community emerged, focusing on design-driven innovation. Despite being rooted in similar foundations, their methods partly diverge (Figure 1). IFSA expanded globally while anchoring regional networks like the European group. Its approach to FSR is grounded in a broad array of concepts and has progressively targeted multi-level systemic transitions by using integrative inter- and transdisciplinary approaches (Darnhofer et al. 2012), while retaining links with delivery structures (e.g., extension services) through the concept and discussions of agricultural knowledge and innovation systems. FSD aligns instead with agronomy associations, integrating design theory into modeling for participatory, exploratory approaches emphasizing situated knowledge (Salembier et al. 2021). While IFSA appears to be constantly and empirically broaden FSR's boundaries, FSD developed specific expertise in normatively grounded modeling approaches. Besides, both communities seem to under-explore the landscape level dimension of farming systems, which could contribute addressing broader ecological and socio-economic interdependencies (Rizzo et al. 2013).

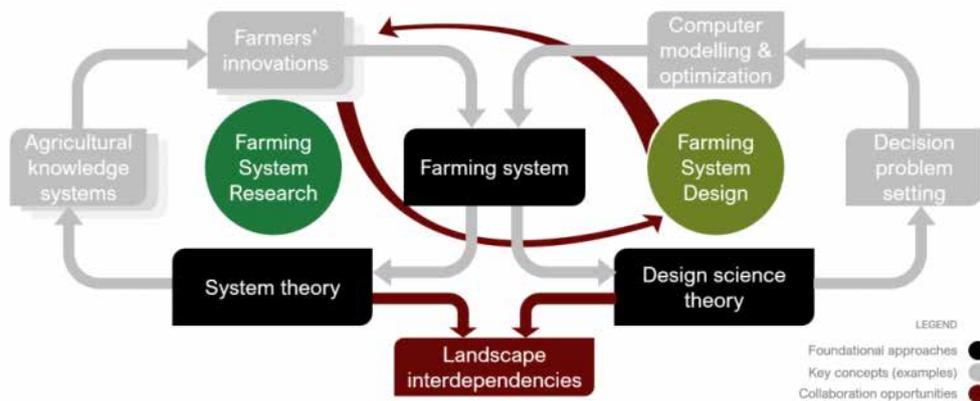


Figure 1. Farming system as a nexus between FSR and FSD.

Discussion and perspectives

Comparing the thematic and methodological approaches of the IFSA Europe group and FSD community highlights opportunities for bridges in developing FSR. A thorough comparison, however, requires analysis of the relevant literature, especially conference proceedings. Some major limitations include the need to update IFSA Europe's reflexive analysis (Barbier et al. 2012), and filling the gap of a comprehensive collection and review of FSD's partially published outputs (e.g., Wery and Langeveld 2010). Notably, this analysis could enable the identification of farming systems studied by both communities, allowing for a comparison of approaches and results. In perspective, bridging the two communities could involve formulating complementary research questions—for example, visualizing actor networks and practices in socio-technical systems—to foster synergies in producing knowledge more relevant to practice. Finally, decision and design theories appear as the common foundation from which to initiate joint efforts between IFSA and FSD researchers in addressing systemic transitions and contribute more effectively to sustainability.

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