The table below details the main scientific themes that will be addressed at the conference. Please select one to three scientific themes from the list that best fit the content of your abstract. To indicate your choice, please write 1, 2 or 3 (1 being the most suitable theme) in the table below.

List of themes	**Your choice (1,2,3)**
Analysis of innovative practices and transition pathways	
Systemic innovation for agrifood systems transformation	
Co-design methods and tools for agrifood systems	
Coupled innovation processes for agrifood system change (reconnecting the dynamics of innovation in agriculture and food)	3
Agrifood system management enhancing biodiversity	
Modelling for anchored agricultural system change	
Role of digitalization for enhanced agroecological systems	
Co-design of territorial scenarios for agricultural change with stakeholders	
Capacity building for scaling up change in agricultural systems	
Managing climate risks in agrifood systems	
Considering resilience in farming system assessment and design	
Change in policies and advisory services to enhance the transition of agrifood systems	
Design at the territory level for sustainable and healthy agrifood systems	1
Territory and value chain interactions for agrifood system transition	2
Analysis of sociotechnical systems to drive agrifood system design	

EMPOWERING SYSTEMIC CHANGE AT A TERRITORY SCALE: A COLLECTIVE LEARNING EXPERIMENT WITH STAKEHOLDERS ALONG THE AGRIFOOD CHAIN IN THE PILAT, FRANCE

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Four Keywords: agrifood system, innovation, value-chain, action-research

Introduction

Profound changes are needed to support the global food and agriculture systems nourish the world population (UN, 2019), with fundamental processes to restructure, stir directions, innovate, on multiple scales, persistently and throughout the entire system (Fedele et al., 2019). Moreover, designing effective solutions requires considering farmer's particular climate and soil conditions, available means and resources, and institutional and socio-economic contexts (Meynard et al., 2012). Shifting the agrifood systems within which farms are embedded entails working with and for the broad range of actors involved (Gliessman, 2016). In order to do so, supporting the self-organization of actors, in a bottom-up approach, and on a territory, scale has the potential to drive important shifts, such as pesticide use reduction. However, this remains an important gap in the literature (Jacquet et al., 2022). Action-research has proven helpful in empowering actors to face complex issues, while helping acquire new knowledge on agrifood systems (Conner et al., 2010; Swords, 2019). We present the findings from a territory-wide multi-actor action-research experiment aimed at supporting the development of a low to no pesticide fruit agrifood system.

Methods

An initial study, based on 35 semi-structured interviews and 20 participant observations was first conducted in order to understand barriers and leverages to reducing the use of pesticides in the arboriculture production of the Pilat Natural Regional Park, France (Hirson-Sagalyn et al., 2024). This study laid the groundwork to design the research project presented herein. A hybrid methodology was selected, combining Territorial Dialog (Barret, 2003), and Systems Oriented Design (Sevaldson, 2022). The approach included semi-structured interviews (lasting 60-120min each), several half-day collective workshops, a full-day event, site-visits, and numerous individual meetings with actors across the agrifood system. Data from each step informed the next, in an iterative process (Figure 1).

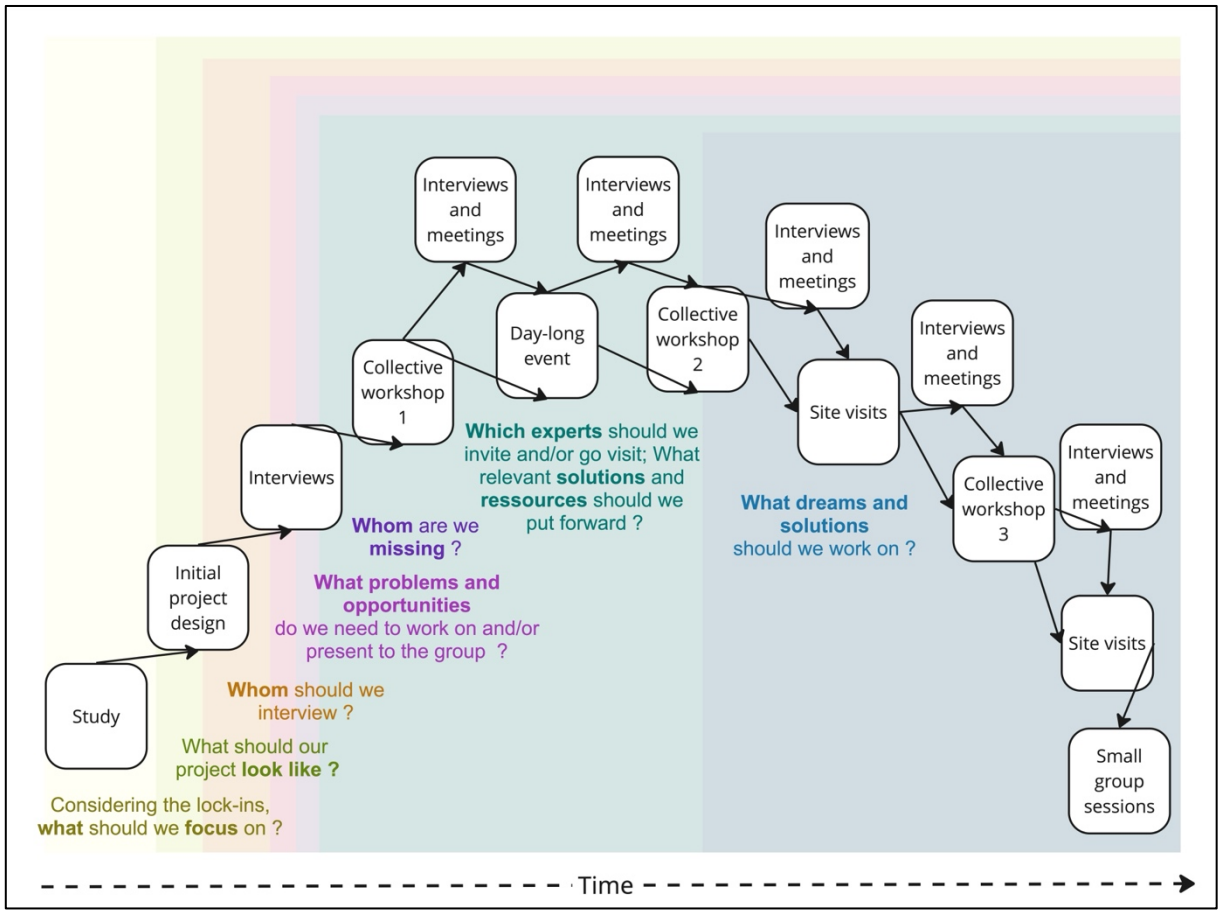

Figure 1. Design process overview: questions appeared over time; the answer to these questions helped form new knowledge, which in turn informed future action.

Results

Results focus on the territory-wide design process aimed at supporting systemic change within the agrifood system. Several synchronous and asynchronous phases took place, in order to help the group form an understanding of the starting situation, then explore, evaluate, select, and develop solutions together. Interviews helped the facilitators gain knowledge of fruit in the Pilat: its production, storage, processing, selling, distributing, serving, via multiple food chains. Subsequent workshops and events helped tease out problems and opportunities along the value chain and throughout the territory, define 11 main varied challenges (ranging from logistic solutions, to facilitating farmer-chef agreements), and explore concrete solutions (e.g. a collective processing facility for smallholding farmers; a system for calculating savings from food-waste reduction measures). In some instances, this resulted in coupled innovations. For example design work included storage units for small volumes of fruit coming from different farms as well as means to support dialog between producers and clients, notably to alleviate storage needs and adjust delivery frequency. Particular attention was placed on fostering relationships among project participants to build project capacity, and finding ways to involve key actors in the design process.

Discussion and Perspectives

Research on workshop-based design processes that foster collaboration among the broad range of actors involved in agrifood systems is only at its infancy (Jeuffroy et al., 2022). This study advances such knowledge, while also elucidating the role of complementary activities in achieving the transformational goals at stake. Key themes include ways to encourage bold visions and maintain a systems-wide approach while landing on operative solutions. We also delve into issues of actor engagement and inclusivity. In agroecology co-design involving key

future users such as farmers or cooks, who have high interest but limited capacity to participate in workshops, can be challenging. Our study highlights modalities that can help integrate these actors' perspectives in design considerations, such as running the project conjointly with local socio-political actors and technicians, and diversifying ways to engage with the project.

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